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Resource Tables

Environmental Protection Agency
FY 2000 Annual Performance Plan and Congressional Justification
Table of Contents

Introduction and Overview
EPA's Mission and Purpose i-1
Goals i-2
Organization of the Annual Plan and Congressional Justification i-4
Annual Plan Overview i-8

Resource Table
Resources by Appropriation RT-1
Resources by Goal/Appropriation RT-3
Resources by Goal/Objective RT-10

Goal 1: Clean Air I-1
Attain NAAQS) for Ozone and PM. I-13
Reduce Emissions of Air Toxics I-39
Attain NAAQS for CO, SO2, NO2, Lead I-57
Acid Rain I-65

Goal 2: Clean and Safe Water II-1
Safe Drinking Water, Fish and Recreational Waters II-13
Conserve and Enhance Nation's Waters II-37
Reduce Loadings and Air Deposition II-61

Goal 3: Safe Food III-1
Reduce Agricultural Pesticides Risk III-9
Reduce Use on Food of Pesticides Not Meeting Standards III-17

Goal 4: Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems IV-1
Reduce Public and Ecosystem Exposure to Pesticides IV-15
Reduce Lead Poisoning IV-23
Safe Handling and Use of Commercial Chemicals and Microorganisms IV-29
Healthier Indoor Air IV-43
Improve Pollution Prevention Strategies, Tools, Approaches IV-53
Decrease Quantity and Toxicity of Waste IV-65
Assess Conditions in Indian Country IV-75

Goal 5: Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response V-1
Reduce or Control Risks to Human Health V-9
Prevent, Reduce and Respond to Releases, Spills, Accidents or Emergencies V-39

Goal 6: Reduction of Global and Cross-Border Environmental Risks VI-1
Reduce Transboundary Threats: Shared North American Ecosystems VI-7
Climate Change VI-19
Stratospheric Ozone Depletion VI-39
Protect Public Health and Ecosystems From Persistent Toxics VI-45
Achieve Cleaner and More Cost-Effective Practices VI-55

Goal 7: Expansion of Americans' Right to Know About Their Environment VII-1
Increase Quality/Quantity of Education, Outreach, Data Availability VII-9
Improve Public's Ability to Reduce Exposure VII-23
Enhance Ability to Protect Public Health VII-35

Goal 8: Sound Science, Improved Understanding of Environmental Risks, and Greater Innovation to Address Environmental Problems VIII-1
Research for Ecosystem Assessment and Restoration VIII-11
Research for Human Health Risk Assessment VIII-23
Emerging Risk Issues VIII-35
Pollution Prevention and New Technology VIII-43
Increase Use of Integrated, Holistic, Partnership Approaches VIII-53
Increase Opportunities for Sector Based Approaches VIII-57
Regional Enhancement of Ability to Quantify Environmental Outcomes VIII-63
Science Advisory Board Peer Review VIII-65
Incorporate Innovative Approaches to Environmental Management VIII-69

Goal 9: A Credible Deterrent to Pollution and Greater Compliance with the Law IX-1
Enforcement Tools to Reduce Non-Compliance IX-5
Increase Use of Auditing, Self-Policing Policies IX-25

Goal 10: Effective Management X-1
Executive Leadership X-7
Management Services, Administrative, and Stewardship X-11
Building Operations, Utilities and New Construction X-23
Provide Audit and Investigative Products and Services X-29

Special Analysis
Major Management Issues SA-1
EPA User Fee Program SA-9
Working Capital Fund SA-12
The Customer Service Program SA-13
Costs and Benefits of Economically significant Rules in FY 1999 or 2000 ..... SA-15
Non-Appropriated Funds SA-27
Program and Activity Highlights SA-28
Key Programs by Appropriation SA-29
State and Tribal Assistance Grants SA-45
Object Classification SA-46

Introduction/Overview

Table of Contents

Introduction and Overview

EPA's Mission and Purpose i-1
Goals i-2
Organization of the Annual Plan and Congressional Justification i-4
Annual Plan Overview i-8

EPA's Mission and Purpose

The mission of the Environmental Protection Agency (EPA) is to protect human health and to safeguard the natural environment -- air, water, and land – upon which life depends. EPA's purpose is to ensure that:

- All Americans are protected from significant risks to human health and the environment where they live, learn, and work.
- National efforts to reduce environmental risk are based on the best available scientific information.
- Federal laws protecting human health and the environment are enforced fairly and effectively.
- Environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy.
- All parts of society -- communities, individuals, business, state and local governments, and tribal governments -- have access to accurate information sufficient to effectively participate in managing human health and environmental risks.
- Environmental protection contributes to making our communities and ecosystems diverse, sustainable, and economically productive.
- The United States plays a leadership role in working with other nations to protect the global environment.

EPA's Goals

EPA has developed a series of ten strategic, long-term Goals in its Strategic Plan. These goals, together with the underlying principles that will be used to achieve them, define the Agency's planning, budgeting, analysis, and accountability process.

- **Clean Air:** The air in every American community will be safe and healthy to breathe. In particular, children, the elderly, and people with respiratory ailments will be protected from health risks of breathing polluted air. Reducing air pollution will also protect the environment, resulting in many benefits, such as restoring life in damaged ecosystems and reducing health risks to those whose subsistence depends directly on those ecosystems.

- **Clean and Safe Water:** 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.

- **Safe Food:** The foods Americans eat will be free from unsafe pesticide residues. Children especially will be protected from the health threats posed by pesticide residues, because they are among the most vulnerable groups in our society.

- **Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems:** Pollution prevention and risk management strategies aimed at cost-effectively eliminating, reducing, or minimizing emissions and contamination will result in cleaner and safer environments in which all Americans can reside, work, and enjoy life. EPA will safeguard ecosystems and promote the health of natural communities that are integral to the quality of life in this nation.

- **Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response:** America's wastes will be stored, treated, and disposed of in ways that prevent harm to people and to the natural environment. EPA will work to clean up previously polluted sites, restoring them to uses appropriate for surrounding communities, and respond to and prevent waste-related or industrial accidents.

- **Reduction of Global and Cross-Border Environmental Risks:** The United States will lead other nations in successful, multilateral efforts to reduce significant risks to human health and ecosystems from climate change, stratospheric ozone depletion, and other hazards of international concern.

- **Expansion of Americans' Right to Know About Their Environment:** Easy access to a wealth of information about the state of their local environment will expand citizen involvement and give people tools to protect their families and their communities as they see fit. Increased information exchange between scientists, public health officials, businesses, citizens, and all levels of government will foster greater knowledge about the environment and what can be done to protect it.

- **Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems:** EPA will develop and apply the best available science for addressing current and future environmental hazards, as well as new approaches toward improving environmental protection.

- **A Credible Deterrent to Pollution and Greater Compliance with the Law:** EPA will ensure full compliance with laws intended to protect human health and the environment.

- **Effective Management:** EPA will establish a management infrastructure that will set and implement the highest quality standards for effective internal management and fiscal responsibility.

Organization of the Annual Plan

The organization of EPA's FY 2000 Annual Plan and Congressional Justification reflects the Agency's continuing commitment to link planning and budgeting in a coherent, integrated process. In the spirit of reinventing government to better serve the American people, the Agency for the second year presents its budget as its Annual Plan. The FY 2000 Annual Plan builds on the successes and challenges of the FY 1999 Annual Plan, which was the first budget the Agency presented in this new format.

The Annual Plan presents the Agency's Goals and Objectives, and identifies the resource levels and activities associated with them. The Annual Plan sets forth the intermediate, measurable levels of performance for each Objective in the budget year; as such, it is the linchpin to each of the Agency's Objectives contained in the Agency's five-year Strategic Plan. As a result, the Annual Plan promotes fiscal accountability through a direct connection between resources and outcomes.

Resource Tables

The resource tables provide a broad overview of the resources that the Agency is requesting for FY 2000 by Goal, Objective, and Appropriation. (The dollar amounts in these and other tables may not add due to independent rounding.)

Goal Chapters include:

- **Background and Context:** Sets the broad context for the Goal and briefly explains why the Goal is of National importance.

- **Resource Summary:** Provides a broad overview of the resources for FY 2000 by Goal, Objective, and Appropriation.

- **Means and Strategy:** Broadly describes the Agency's approach to achieving the strategic Goal.

- **Highlights:** Gives an overview of major activities and programs which contribute to achieving the Goal.

- **Strategic Objectives and Annual Performance Goals:** Includes all the Objectives under each Goal and links the Objectives with FY 2000 Annual Performance Goals.

- **External Factors:** This section addresses the external-Agency factors such as participation in environmental programs by State and local governments and other stakeholders, or economic and technological factors, that may enhance or impede progress toward achieving environmental goals. For some Goals, this section includes a discussion of legislative proposals for FY 2000 which, along with the requested resources, are required for the Agency to meet Annual Performance Goals and achieve Objectives.

Objective Sections Include:

- **Objective Statement:** Objectives are a critical part of the planning and budgeting process, and they respond to the GPRA requirement to plan achievable Objectives. Each Objective supports the attainment of a specific Goal.

- **Resource Summary:** Reports resources by Appropriation account for the Objective

- **Key Programs:** Reports resources for Key Programs, which are core Agency programs contributing to the Objective. Resources listed under an Objective may not represent the total Key Program resources, as a Key Program may be involved in more than one Objective.

- **FY 2000 Request:** These narratives describe specific Agency functions and the operational processes, as well as the human, capital and technological resources required to meet the performance goals.

- **FY 2000 Change from FY 1999 Enacted:** Describes major changes, by appropriation account, in programmatic funding within the Objective.

- **Annual Performance Goals:** Annual Performance Goals are central to measuring progress toward achieving Objectives. They are quantifiable standards, values, or rates against which actual achievement can be compared. They establish the connection between longer-term objectives and the day-to-day activities in the Agency's programs and will be used by managers to determine how well a program or activity is doing in accomplishing its intended results. This Annual Plan lists Annual Performance Goals for both 1999 and 2000, as well as a description of how achieving the Annual Performance Goals advance accomplishment of the Objectives.

- **Key Performance Measures:** Key Performance Measures provide the means for determining the extent to which annual goals and multi-year objectives are being achieved. As such, they are essential to program evaluations that help to guide the Agency's strategic planning.

- **Verification and Validation of Performance Measures:** This section describes how the values used in Performance Measures are verified and validated. This section includes a description of the source of performance measure data as well as procedures for quality assurance. This section may also include information on the methodology of data collection and review.

- **Coordination with Other Agencies:** This section is new in the FY 2000 Annual Plan. It describes partnerships with other Federal and state agencies which are crucial to the success of our Nation's environmental programs.

- **Statutory Authority:** This section cites the public law that gives the Agency legal authority to carry out the Objective.

Special Analyses

The final section of the Annual Plan includes:

- Major Management Issues: This section is new in the FY 2000 Annual Plan. It describes the nature of EPA's most pressing management problems, actions taken, and progress to date in addressing the major management challenges faced by the Agency.

- Summary of Key Programs: Reports totals for Agency Key Programs, across Goals and Objectives.

- User Fees: This section describes the Agency's user fee programs. User fees are the Congressionally-authorized collection of fees charged to Agency customers which cover the cost of selected permitting, testing, registration, and approval actions.

- Working Capital Fund: This section describes the Working Capital Fund, a revolving fund authorized by law to finance a cycle of operations, where the costs of goods and services provided are charged to the Agency users on a fee-for-service basis.

- Customer Service Standards: This section describes the Agency's plan to improve its mission of protecting public health and the environment by more efficiently and effectively serving the public, industry, state and local agencies, and other customers.

- External Costs and Benefits: This section identifies regulatory actions that are likely to result in a rule that may have an annual effect on the economy of $100 million or more. This analysis is required by executive order and is reported in the Agency's annual "Regulatory Plan."

- Non-Appropriated Funds: Describes non-appropriated funds for FY 2000, such as user fees.

- Appropriation by Object Class: Provides information on types of obligations within the appropriation..

- State and Tribal Assistance Grants (STAG): Tables provide a breakdown of the entire STAG account (e.g. Clean Water State Revolving Fund), as well as resources requested for STAG categorical grants.

Use of Non-Federal Parties in Preparing this Annual Plan

The Annual Plan was prepared in conformance with section 220.6 of OMB Circular A-11, concerning the role of non-Federal parties in preparing the Annual Plan.

Relationship between the Annual Plan and the Strategic Plan

The Annual Plan makes no substantive changes (not previously noted) to the Agency's Strategic Plan which was submitted to Congress in September 1997.

Relationship between Budgeted Resources and Annual Performance Goals and Measures

Annual Performance Goals are related to the resource levels contained in each Objective. Annual Performance Goals for FY 2000 in this Annual Performance Plan are based upon the resource levels in the Agency's enacted FY 2000 budget. However, resources may contribute not only to the budget year's Annual Performance Goals but also to the accomplishment of Goals in future years. For example, a performance goal to complete a number of Superfund site cleanups, or develop research methods and models, generally requires a period longer than one year. Thus, FY 2000 activities will contribute to completion of work in FY 2000 or beyond. Likewise, some FY 2000 Annual Performance Goals are achievable only with funding provided in prior years.

Given this multi-year characteristic of some of the resources requested, it is not always possible to establish direct linkages between the budget requested for a particular year and the achievement of all performance goals for that year.

Office of Research and Development: Operating Expenses/Working Capital Fund Allocation

The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives to more properly reflect costs of the Agency's objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Plan Overview

For nearly three decades, the Environmental Protection Agency (EPA) and its partners have made significant strides in controlling pollution and other environmental risks to human health and the environment. The air, land, and water are now safer for all Americans due to our Nation's investment in environmental protection.

The FY 2000 Annual Plan and Congressional Justification requests $7.207 billion in discretionary budget authority, and 18,406 FTE. In addition, the President's FY 2000 request includes $200 million in mandatory budgetary authority for Superfund orphan shares, and $1.9 billion in bond authority for new "Better America Bonds." The FY 2000 budget request will help build strong, healthy communities for the 21st Century. This budget proposal is built on the principle that a healthy environment and a healthy economy go hand in hand.

Building Livable Communities through "Better America Bonds"

EPA will play a key role in implementing the "Better America Bonds" program, which is a major component of the Administration's Livability Initiative. These bonds will help State and local governments take the initiative in safeguarding their land and water for future generations. Since 1960, urban sprawl has consumed 1.5 million acres of farmland yearly. This initiative will help state and local governments to preserve open space, protect water quality, and clean up abandoned industrial sites.

This initiative will provide $9.5 billion in bond authority over five years ($1.9 billion in FY 2000) for investments by state and local communities, resulting in Federal tax credits of almost $700 million over the next five years. These bonds will help communities preserve green space for attractive, liveable communities and promote sustainable economic development. This innovative financial tool will be a model for future environmental protection by giving communities the flexibility they need to direct resources to their most pressing environmental needs.

Clean Air Partnership Fund

One of the Administration's most important public health commitments is to improve the air that Americans breathe. Over one third of Americans still live in areas where the air does not meet the new air quality standards. This budget includes $200 million in new funding for a Clean Air Partnership Fund. This fund will provide new grant resources and opportunities for cities, states and tribes to partner with the private sector, the federal government and each other to provide healthy clean air in the communities in which we live.

The Clean Air Partnership Fund will demonstrate locally managed programs that achieve early integrated reductions in soot, smog, air toxics and greenhouse gases. The Fund will direct new resources to state and local governments to find the most innovative, cost-effective and protective ways to reduce soot, smog, air toxics and greenhouse gases that contribute to climate change.

The Air Toxics program will develop tools and data that will allow the Agency to move the program from an almost exclusively technology based program to a risk-based program with a significant focus on urban air toxics. The Air Toxics program has been provided with approximately $18 million in new funding. The recent Cumulative Exposure Project (CEP) indicates that concentrations of air toxics may be high in

almost every area of the country, especially in and around urban areas. The air toxics program is geared to reduce risks for people who live and work in urban areas, which include a disproportionate number of poor and minority Americans. It will bring increased protection to a larger number of more sensitive populations, such as children and the elderly.

Meeting the Climate Change Challenge

Furthermore, this budget invests approximately $216 million for EPA's portion of the Climate Change Technology Initiative (CCTI). This multi-agency program continues the Administration's five-year commitment to address the significant threat that global warming poses to public health and the environment. This is the second year of the Administration's commitment to reduce greenhouse gas emissions through partnerships with businesses, schools, state and local governments, other organizations, and investments in energy efficient technologies and tax incentives for consumers who purchase energy efficient products.

Protecting Children's Health

One of the Clinton-Gore Administration's highest priorities has been, and continues to be, protecting the health of our children – giving them a healthier start in life. Children are among the most vulnerable members of society. EPA, as part of the government-wide interagency initiative on children's asthma, is taking a leadership role in reducing children's exposure to asthma-causing toxins in our environment. President Clinton has provided an additional $17 million dollars for children's asthma for education, outreach, research, and air monitoring activities. An increase of $12 million dollars in funding is for science activities that focuses on other chronic childhood afflictions and ailments, such as cancer and developmental disorders.

Ensuring Clean and Safe Water

This budget supports EPA's efforts to clean up and restore our nation's rivers, lakes and coastal waters, as well as its restoration of watersheds across the country, with $630 million for the Clean Water Action Plan, a multi-Agency initiative to protect the Nation's watersheds and promote clean water, and an additional $21 million in related funding. A key focus of the Plan is to reduce nonpoint source pollution, for which this budget includes $200 million for nonpoint source grants.

EPA's FY 2000 President's Budget also includes a proposal that will allow states greater flexibility to address their most pressing water quality problems. The proposal will give states the option to set aside up to 20 percent of their FY 2000 Clean Water State Revolving Fund (CWSRF) allotment for making grants for implementing non-point source pollution and estuary management projects. Pollution from non-point sources is now the leading cause of water pollution. These sources of pollution are harder to identify and control than those associated with point sources.

In addition, although the CWSRF showed a decrease from the previous year, the Administration is still on track to meet its goal for the CWSRF to provide an average of $2.0 billion in annual financial assistance. A total of almost $16 billion has already been provided to capitalize the CWSRF, almost 90 percent more than originally authorized by Congress. (The program was scheduled to end in 1994.)

The Administration is also on track to meet its goal for the Drinking Water State Revolving Fund (DWSRF) to provide an average of $500 million a year, and to has proposed a $50 million increase for the DWSRF in FY 2000.

A $50 million increase is provided for water and wastewater projects along the U.S./Mexico Border. With these resources, the Agency provides direct grant assistance to address the environmental and public health problems associated with untreated industrial and municipal sewage on the border.

Empowering Citizens with Knowledge about their Environment

The Agency is committed to enabling citizens to assess the risks posed by their local environments and allow them to make better decisions on how to handle those risks in their lives. This budget includes an investment of $13.5 million additional dollars in the Chemical-Right-to-Know initiative. This will ensure that the public has basic health data for industrial chemicals released in their communities due to an unprecedented voluntary partnership with industry. Through this and other Right-to-Know programs supported by the Agency, Americans will have unprecedented access to information. As a further step in our commitment to improving and expanding access to information, we are pioneering a new Information Office which will advocate the use and management of information as a strategic resource to enhance public health and environmental protection.

Cleaning up Toxic Waste Sites

The budget continues a commitment to clean up toxic waste sites with $1.5 billion for Superfund cleanups, and $200 million in mandatory spending authority for Superfund orphan shares, to reduce the effect of uncontrolled releases on local populations and sensitive environments. The Agency will continue to address clean up efforts at over 89% of Superfund sites. Combined with continuing administrative reforms, these funds will help meet the President's pledge to complete the clean up of two thirds of Superfund hazardous waste sites by 2002.

Revitalizing Communities through the Brownfields Initiative

The FY 2000 budget continues the President's Brownfields initiative, which promotes local cleanup and redevelopment of industrial sites, bringing jobs to blighted areas. This budget includes $91.7 million for technical assistance and grants to communities for site assessment and redevelopment planning, as well as revolving loan funds to finance clean up efforts at the local level. Through FY 2000, EPA will have funded Brownfields site assessment pilots in 350 communities.

Strengthening Tribal Partnerships

The Agency continues its commitment to tribal programs with a total request of $165.8 million. New funding will provide tribes with program and technical assistance and will assure that tribes have adequate information with which to make environmental decisions. In addition, the President's Budget proposes to eliminate the current statutory ceiling on grant funds that may be awarded to tribes for non-point source activities under the Clean Water Act. This is especially significant since there is increasing demand for the limited pool of tribal grant funds.

Summary

The EPA's FY 2000 Annual Plan and Congressional Justification moves our Nation forward with innovative, common sense, cost-effective programs to ensure strong and healthy communities in the 21st Century by addressing environmental problems through innovative programs and focusing on high-risk areas. The budget continues our commitment to partnerships, good stewardship and strong leadership in the Nation's efforts for a clean, safe and healthy environment.

Resource Table

Resources by Appropriation RT-1
Resources by Goal/Appropriation RT-3
Resources by Goal/Objective RT-10

FY 2000 Annual Performance Plan and Congressional Justification

Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Environmental Program & Management			
Budget Authority	$1,993,780.2	$1,848,000.0	$2,046,992.7
Full-Time Equivalents (FTE)	11,471.9	11,471.4	11,561.4
Envir. Program & Mgmt - Reim			
Budget Authority	$0.0	$0.0	$0.0
Full-Time Equivalents (FTE)	11.5	11.5	1.5
Science & Technology			
Budget Authority S&T Program	$673,660.8	$700,000.0	$679,754.4
Budget Authority Derived from Superfund	($40,200.8)	($40,000.0)	($37,271.4)
Budget Authority Appropriated in S&T	$633,460.0	$660,000.0	$642,483.0
Full-Time Equivalents (FTE)	2,428.1	2,553.0	2,455.6
Science and Tech. - Reim			
Budget Authority	$0.0	$0.0	$0.0
Full-Time Equivalents (FTE)	24.9	24.9	35.9
Building and Facilities			
Budget Authority	$52,948.0	$56,948.0	$62,630.5
Full-Time Equivalents (FTE)	0.0	0.0	0.0
State and Tribal Assistance Grants			
Budget Authority	$2,902,657.0	$3,406,750.0	$2,837,957.0
Full-Time Equivalents (FTE)	0.0	0.0	0.0
Leaking Underground Storage Tanks			
Budget Authority	$71,209.9	$72,500.0	$71,556.0
Full-Time Equivalents (FTE)	85.8	85.8	86.8
Oil Spill Response			
Budget Authority	$17,321.3	$15,000.0	$15,618.1
Full-Time Equivalents (FTE)	103.6	103.6	103.6
Inspector General			
Budget Authority IG Program	$43,391.3	$43,391.0	$40,161.9
Budget Authority Derived from Superfund	($12,237.3)	($12,237.0)	($10,753.2)
Budget Authority Appropriated in IG	$31,154.0	$31,154.0	$29,408.7

FY 2000 Annual Performance Plan and Congressional Justification

Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Full-Time Equivalents (FTE)	284.4	395.4	275.0
Rereg. & Exped. Proc. Rev Fund			
Budget Authority	$0.0	$0.0	$0.0
Full-Time Equivalents (FTE)	222.4	222.4	222.4
Hazardous Substance Superfund			
Budget Authority Superfund Program	$2,040,306.9	$1,447,763.0	$1,451,975.4
Budget Authority Transfer to S&T	$40,200.8	$40,000.0	$37,271.4
Budget Authority Transfer to IG	$12,237.3	$12,237.0	$10,753.2
Budget Authority Appropriated in SF	$2,092,745.0	$1,500,000.0	$1,500,000.0
Full-Time Equivalents (FTE)	3,599.5	3,373.6	3,520.5
Superfund Reimbursables			
Budget Authority	$0.0	$0.0	$0.0
Full-Time Equivalents (FTE)	143.0	143.0	143.0
Budget Amendment			
Budget Authority	($5,000.0)	$0.0	$0.0
Full-Time Equivalents (FTE)	$0.0	$0.0	$0.0
ENVIRONMENTAL PROTECTION AGENCY			
Budget Authority	$7,790,275.4	$7,590,352.0	$7,206,646.0
Full-Time Equivalents (FTE)	$18,375.1	$18,384.6	$18,405.7
**** The Agency budget authority does not include Fees**			
Fees	**$24,000.0**	**$0.0**	**$20,000.0**

FY 2000 Annual Performance Plan and Congressional Justification

Goal Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Clean Air			
Budget Authority	$525,639.6	$536,368.0	$722,058.8
Full-Time equivalents (FTE)	1,777.1	1,762.3	1,802.6
Environmental Program & Management			
Budget Authority	$168,540.3	$157,039.4	$157,500.4
Full-Time equivalents (FTE)	1,133.3	1,124.3	1,133.7
Science & Technology			
Budget Authority	$155,840.5	$172,726.8	$154,799.6
Full-Time equivalents (FTE)	643.8	638.0	668.9
State and Tribal Assistance Grants			
Budget Authority	$201,258.8	$206,601.8	$409,758.8
Full-Time equivalents (FTE)	0.0	0.0	0.0
Clean and Safe Water			
Budget Authority	$2,815,308.5	$3,418,339.7	$2,551,369.2
Full-Time equivalents (FTE)	2,465.9	2,495.1	2,522.0
Environmental Program & Management			
Budget Authority	$364,723.8	$410,064.4	$372,252.4
Full-Time equivalents (FTE)	2,109.8	2,133.8	2,152.8
Science & Technology			
Budget Authority	$68,774.9	$77,715.5	$72,307.0
Full-Time equivalents (FTE)	356.1	361.3	369.2
State and Tribal Assistance Grants			
Budget Authority	$2,381,809.8	$2,930,559.8	$2,106,809.8
Full-Time equivalents (FTE)	0.0	0.0	0.0

FY 2000 Annual Performance Plan and Congressional Justification

Goal Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Safe Food			
Budget Authority	$65,205.9	$67,546.4	$78,583.2
Full-Time equivalents (FTE)	692.0	702.4	712.2
Environmental Program & Management			
Budget Authority	$60,755.9	$56,831.7	$68,713.1
Full-Time equivalents (FTE)	440.6	440.6	443.9
Science & Technology			
Budget Authority	$4,450.0	$10,714.7	$9,870.1
Full-Time equivalents (FTE)	29.0	39.4	45.9
Rereg. & Exped. Proc. Rev Fund			
Budget Authority	$0.0	$0.0	$0.0
Full-Time equivalents (FTE)	222.4	222.4	222.4
Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems			
Budget Authority	$259,721.3	$237,789.8	$277,166.0
Full-Time equivalents (FTE)	1,122.8	1,124.9	1,117.9
Environmental Program & Management			
Budget Authority	$156,480.8	$134,256.7	$176,412.0
Full-Time equivalents (FTE)	1,001.9	1,008.6	1,022.8
Science & Technology			
Budget Authority	$18,592.0	$16,890.5	$14,111.3
Full-Time equivalents (FTE)	120.9	116.3	95.1
State and Tribal Assistance Grants			
Budget Authority	$84,648.5	$86,642.6	$86,642.7
Full-Time equivalents (FTE)	0.0	0.0	0.0

FY 2000 Annual Performance Plan and Congressional Justification

Goal Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response			
Budget Authority	$2,256,934.3	$1,655,913.5	$1,656,719.5
Full-Time equivalents (FTE)	4,304.8	4,316.9	4,246.1
Environmental Program & Management			
Budget Authority	$153,835.9	$136,267.9	$148,285.2
Full-Time equivalents (FTE)	994.4	985.9	995.9
Envir. Program & Mgmt - Reim			
Budget Authority	$0.0	$0.0	$0.0
Full-Time equivalents (FTE)	11.0	11.0	0.0
Scence & Technology			
Budget Authority	$15,990.6	$58,607.0	$17,824.2
Full-Time equivalents (FTE)	84.9	203.3	84.1
Science and Tech. - Reim			
Budget Authority	$0.0	$0.0	$0.0
Full-Time equivalents (FTE)	24.9	24.9	35.9
State and Tribal Assistance Grants			
Budget Authority	$64,527.2	$62,847.2	$64,247.2
Full-Time equivalents (FTE)	0.0	0.0	0.0
Leaking Underground Storage Tanks			
Budget Authority	$69,128.7	$70,418.7	$69,500.7
Full-Time equivalents (FTE)	72.4	72.4	73.4
Oil Spill Response			
Budget Authority	$16,780.2	$14,458.9	$15,076.9
Full-Time equivalents (FTE)	103.6	103.6	103.6

FY 2000 Annual Performance Plan and Congressional Justification

Goal Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Hazardous Substance Superfund			
Budget Authority	$1,936,671.7	$1,313,313.8	$1,341,785.3
Full-Time equivalents (FTE)	2,870.6	2,772.8	2,810.2
Superfund Reimbursables			
Budget Authority	$0.0	$0.0	$0.0
Full-Time equivalents (FTE)	143.0	143.0	143.0
Reduction of Global and Cross-border Environmental Risks			
Budget Authority	$398,286.4	$229,366.9	$407,414.2
Full-Time equivalents (FTE)	530.2	522.4	519.9
Environmental Program & Management			
Budget Authority	$228,563.5	$125,745.9	$234,675.1
Full-Time equivalents (FTE)	431.4	418.9	415
Science & Technology			
Budget Authority	$69,722.9	$53,621.0	$72,739.1
Full-Time equivalents (FTE)	98.8	103.5	104.9
State and Tribal Assistance Grants			
Budget Authority	$100,000.0	$50,000.0	$100,000.0
Full-Time equivalents (FTE)	0.0	0.0	0.0
Expansion of Americans' Right to Know About their Environment			
Budget Authority	$158,923.3	$133,467.2	$144,599.1
Full-Time equivalents (FTE)	736.2	720.8	754.3
Environmental Program & Management			
Budget Authority	$135,887.7	$119,753.9	$129,101.5
Full-Time equivalents (FTE)	681.7	669.9	705.4

FY 2000 Annual Performance Plan and Congressional Justification

Goal Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Science & Technology			
Budget Authority	$20,221.3	$11,517.3	$12,732.6
Full-Time equivalents (FTE)	38.7	39.9	36.5
Hazardous Substance Superfund			
Budget Authority	$2,814.3	$2,196.0	$2,765.0
Full-Time equivalents (FTE)	15.8	11.0	12.4
Sound Science, Improved Understanding of Env. Risk and Greater Innovation to Address Env. Problems			
Budget Authority	$322,661.8	$346,996.2	$321,747.4
Full-Time equivalents (FTE)	1,212.1	1,194.2	1,187.3
Environmental Program & Management			
Budget Authority	$45,960.7	$54,566.0	$45,952.0
Full-Time equivalents (FTE)	225.6	220.6	205.7
Science & Technology			
Budget Authority	$270,881.1	$289,297.3	$270,210.6
Full-Time equivalents (FTE)	977.2	972.6	972.3
Hazardous Substance Superfund			
Budget Authority	$5,820.0	$3,132.9	$5,584.8
Full-Time equivalents (FTE)	9.3	1.0	9.3
A Credible Deterrent to Pollution and Greater Compliance with the Law			
Budget Authority	$332,733.8	$319,390.3	$331,335.0
Full-Time equivalents (FTE)	2,559.3	2,554.4	2,540.1
Environmental Program & Management			
Budget Authority	$236,470.8	$225,784.3	$236,694.8

FY 2000 Annual Performance Plan and Congressional Justification

Goal Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Full-Time equivalents (FTE)	2,397.3	2,396.4	2,382.3
Science & Technology			
Budget Authority	$8,760.7	$8,583.9	$8,892.9
Full-Time equivalents (FTE)	78.7	78.7	78.7
State and Tribal Assistance Grants			
Budget Authority	$70,412.7	$70,098.6	$70,498.5
Full-Time equivalents (FTE)	0.0	0.0	0.0
Hazardous Substance Superfund			
Budget Authority	$17,089.6	$14,923.5	$15,248.8
Full-Time equivalents (FTE)	83.3	79.3	79.1
Effective Management			
Budget Authority	$659,860.5	$645,174.0	$715,653.6
Full-Time equivalents (FTE)	2,974.7	2,991.2	3,003.3
Environmental Program & Management			
Budget Authority	$442,560.8	$427,689.8	$477,406.2
Full-Time equivalents (FTE)	2,055.9	2,072.4	2,103.9
Envir. Program & Mgmt - Reim			
Budget Authority	$0.0	$0.0	$0.0
Full-Time equivalents (FTE)	0.5	0.5	1.5
Science & Technology			
Budget Authority	$226.0	$326.0	$8,995.6
Full-Time equivalents (FTE)	0.0	0.0	0.0
Building and Facilities			
Budget Authority	$52,948.0	$56,948.0	$62,630.5

FY 2000 Annual Performance Plan and Congressional Justification

Goal Appropriation Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Full-Time equivalents (FTE)	0.0	0.0	0.0
Leaking Underground Storage Tanks			
Budget Authority	$2,081.2	$2,081.3	$2,055.3
Full-Time equivalents (FTE)	13.4	13.4	13.4
Oil Spill Response			
Budget Authority	$541.1	$541.1	$541.2
Full-Time equivalents (FTE)	0.0	0.0	0.0
Inspector General			
Budget Authority	$31,154.0	$43,391.0	$29,408.7
Full-Time equivalents (FTE)	284.4	395.4	275.0
Hazardous Substance Superfund			
Budget Authority	$130,349.4	$114,196.8	$134,616.1
Full-Time equivalents (FTE)	620.5	509.5	609.5
ENVIRONMENTAL PROTECTION AGENCY			
Budget Authority	$7,790,275.4	$7,590,352.0	$7,206,646.0
Full-Time equivalents (FTE)	18,375.1	18,384.6	18,405.7
**** The Agency budget authority does not include Fees**			
Fees	**$24,000.0**	**$0.0**	**$20,000.0**

FY 2000 Annual Performance Plan and Congressional Justification

Goal Objective Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Clean Air			
Budget Authority	$525,639.6	$536,368.0	$722,058.8
Full-Time Equivalents (FTE)	1,777.1	1,762.3	1,802.6
Attain NAAQS for Ozone and PM			
Budget Authority	$361,648.7	$384,863.2	$489,618.4
Full-Time Equivalents (FTE)	1,100.1	1,086.2	1,135.3
Reduce Emissions of Air Toxics			
Budget Authority	$97,546.9	$90,700.3	$175,485.3
Full-Time Equivalents (FTE)	395.1	394.2	399.4
Attain NAAQS for CO, SO2, NO2, Lead			
Budget Authority	$44,878.2	$42,184.1	$36,523.5
Full-Time Equivalents (FTE)	189.9	189.9	175.9
Acid Rain			
Budget Authority	$21,565.8	$18,620.4	$20,431.6
Full-Time Equivalents (FTE)	92.0	92.0	92.0
Clean and Safe Water			
Budget Authority	$2,815,308.5	$3,418,339.7	$2,551,369.2
Full-Time Equivalents (FTE)	2,465.9	2,495.1	2,522.0
Safe Drinking Water, Fish and Recreational Waters			
Budget Authority	$1,026,835.1	$1,092,624.2	$1,079,342.0
Full-Time Equivalents (FTE)	864.4	868.6	861.5
Conserve and Enhance Nation's Waters			
Budget Authority	$300,672.5	$339,236.8	$311,444.1
Full-Time Equivalents (FTE)	714.2	727.5	770.3

FY 2000 Annual Performance Plan and Congressional Justification

Goal Objective Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Reduce Loadings and Air Deposition			
Budget Authority	$1,487,800.9	$1,986,478.7	$1,160,583.1
Full-Time Equivalents (FTE)	887.3	899.0	890.2
Safe Food			
Budget Authority	$65,205.9	$67,546.4	$78,583.2
Full-Time Equivalents (FTE)	692.0	702.4	712.2
Reduce Agricultural Pesticides Risk			
Budget Authority	$26,477.5	$29,139.0	$30,830.1
Full-Time Equivalents (FTE)	291.3	291.3	294.4
Reduce Use on Food of Pesticides Not Meeting Standards			
Budget Authority	$38,728.4	$38,407.4	$47,753.1
Full-Time Equivalents (FTE)	400.7	411.1	417.8
Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems			
Budget Authority	$259,721.3	$237,789.8	$277,166.0
Full-Time Equivalents (FTE)	1,122.8	1,124.9	1,117.9
Reduce Public and Ecosystem Exposure to Pesticides			
Budget Authority	$48,998.9	$43,178.2	$51,050.8
Full-Time Equivalents (FTE)	231.6	231.6	241.7
Reduce Lead Poisoning			
Budget Authority	$30,844.6	$30,817.4	$29,213.5
Full-Time Equivalents (FTE)	119.3	119.3	119.3
Safe Handling and Use of Commercial Chemicals and Microorganisms			
Budget Authority	$44,750.6	$42,443.2	$56,874.1
Full-Time Equivalents (FTE)	349.1	344.5	347.1

FY 2000 Annual Performance Plan and Congressional Justification

Goal Objective Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Healthier Indoor Air			
Budget Authority	$34,017.6	$29,629.4	$40,778.6
Full-Time Equivalents (FTE)	152.8	150.3	130.0
Improve Pollution Prevention Strategies, Tools, Approaches			
Budget Authority	$26,829.8	$21,884.0	$25,116.1
Full-Time Equivalents (FTE)	79.9	79.9	77.2
Decrease Quantity and Toxicity of Waste			
Budget Authority	$23,429.1	$18,852.5	$21,026.0
Full-Time Equivalents (FTE)	135.5	132.0	131.0
Assess Conditions in Indian Country			
Budget Authority	$50,850.7	$50,985.1	$53,106.9
Full-Time Equivalents (FTE)	54.6	67.3	71.6
Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response			
Budget Authority	$2,256,934.3	$1,655,913.5	$1,656,719.5
Full-Time Equivalents (FTE)	4,304.8	4,316.9	4,246.1
Reduce or Control Risks to Human Health			
Budget Authority	$2,076,119.9	$1,491,141.1	$1,477,134.1
Full-Time Equivalents (FTE)	3,435.7	3,455.5	3,367.4
Prevent , Reduce and Respond to Releases, Spills, Accidents or Emergencies			
Budget Authority	$180,814.4	$164,772.4	$179,585.4
Full-Time Equivalents (FTE)	869.1	861.4	888.7
Reduction of Global and Cross-border Environmental Risks			
Budget Authority	$398,286.4	$229,366.9	$407,414.2

FY 2000 Annual Performance Plan and Congressional Justification

Goal Objective Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Full-Time Equivalents (FTE)	530.2	522.4	519.9
Reduce Transboundary Threats: Shared North American Ecosystems			
Budget Authority	$120,392.3	$71,025.9	$119,987.5
Full-Time Equivalents (FTE)	83.0	81.8	81.8
Climate Change			
Budget Authority	$232,960.4	$127,968.9	$242,765.0
Full-Time Equivalents (FTE)	333.9	324.3	325.7
Stratospheric Ozone Depletion			
Budget Authority	$26,914.3	$17,033.8	$27,046.5
Full-Time Equivalents (FTE)	34.4	36.9	36.9
Protect Public Health and Ecosystems From Persistent Toxics			
Budget Authority	$6,883.2	$4,125.8	$6,943.1
Full-Time Equivalents (FTE)	39.3	27.9	30.0
Achieve Cleaner and More Cost-Effective Practices			
Budget Authority	$11,136.2	$9,212.5	$10,672.1
Full-Time Equivalents (FTE)	39.6	51.5	45.5
Expansion of Americans' Right to Know About their Environment			
Budget Authority	$158,923.3	$133,467.2	$144,599.1
Full-Time Equivalents (FTE)	736.2	720.8	754.3
Increase Quality/Quantity of Education, Outreach, Data Availability			
Budget Authority	$75,522.7	$67,818.5	$77,487.5
Full-Time Equivalents (FTE)	351.1	366.2	395.2

FY 2000 Annual Performance Plan and Congressional Justification

Goal Objective Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Improve Public's Ability to Reduce Exposure			
Budget Authority	$49,959.0	$42,247.7	$41,230.8
Full-Time Equivalents (FTE)	229.9	218.4	224.1
Enhance Ability to Protect Public Health			
Budget Authority	$33,441.6	$23,401.0	$25,880.8
Full-Time Equivalents (FTE)	155.2	136.2	135.0
Sound Science, Improved Understanding of Env. Risk and Greater Innovation to Address Env. Problems			
Budget Authority	$322,661.8	$346,996.2	$321,747.4
Full-Time Equivalents (FTE)	1,212.1	1,194.2	1,187.3
Research for Ecosystem Assessment and Restoration			
Budget Authority	$106,489.4	$111,978.7	$118,553.3
Full-Time Equivalents (FTE)	402.3	400.8	456.4
Research for Human Health Risk Assessment			
Budget Authority	$57,063.6	$50,573.7	$56,229.1
Full-Time Equivalents (FTE)	235.6	219.1	261.6
Research to Detect Emerging Risk Issues			
Budget Authority	$61,639.2	$56,648.8	$49,806.9
Full-Time Equivalents (FTE)	192.3	211.8	137.0
Pollution Prevention and New Technology for Environmental Protections			
Budget Authority	$54,246.4	$77,286.3	$55,801.7
Full-Time Equivalents (FTE)	197.4	196.0	185.7
Enable Research on Innovative Approaches to Current & Future Env Problems - NOT IN USE			
Budget Authority	$0.0	$0.0	$0.0

Goal 1: Clean Air

Goal 1: Clean Air I-1
Attain NAAQS) for Ozone and PM. I-13
Reduce Emissions of Air Toxics I-39
Attain NAAQS for CO, SO2, NO2, Lead I-57
Acid Rain I-65

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Clean Air

Strategic Goal: The air in every American community will be safe and healthy to breathe. In particular, children, the elderly, and people with respiratory ailments will be protected from health risks of breathing polluted air. Reducing air pollution will also protect the environment, resulting in many benefits, such as restoring life in damaged ecosystems and reducing health risks to those whose subsistence depends directly on those ecosystems.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Clean Air	**$525,639.6**	**$536,368.0**	**$722,058.8**	**$185,690.8**
Attain NAAQS for Ozone and PM	$361,648.7	$384,863.2	$489,618.4	$104,755.2
Reduce Emissions of Air Toxics	$97,546.9	$90,700.3	$175,485.3	$84,785.0
Attain NAAQS for CO, SO2, NO2, Lead	$44,878.2	$42,184.1	$36,523.5	($5,660.6)
Acid Rain	$21,565.8	$18,620.4	$20,431.6	$1,811.2
Total Workyears:	1,777.1	1,762.3	1,802.6	40.3

Background and Context

Despite concerted efforts to achieve cleaner, healthier air, air pollution continues to be a widespread public health and environmental problem in the United States, contributing to illnesses such as cancer, respiratory, developmental, and reproductive problems. In many cases, air pollutants end up on the land or in rivers, lakes, and streams, harming the life in them. Air pollution also makes soil and waterways more acidic, reduces visibility, and corrodes buildings.

EPA is responding to air pollution because the problem is national and international in scope. The majority of the population lives in expanding urban areas, where air pollution crosses local and state lines and, in some cases, crosses our borders with Canada and Mexico. Federal assistance and leadership are essential for developing cooperative state, local, tribal, regional, and international programs to prevent and control air pollution and for ensuring that national standards are met.

Means and Strategy

Criteria pollutants. EPA develops standards to protect public health and the environment that limit concentrations of the most widespread pollutants (known as criteria pollutants), which are linked to many serious health and environmental problems:

- Ground-level ozone. Causes respiratory illness, especially in active children; aggravates respiratory illnesses such as asthma; and causes damage to vegetation and visibility problems.

- Carbon monoxide (CO). Interferes with the delivery of oxygen to body tissues, affecting particularly people with cardiovascular diseases.

- Sulfur dioxide (SO_2). Aggravates the symptoms of asthma and is a major contributor to acid rain.

- Nitrogen dioxide (NO_2). Irritates the lung and contributes to the formation of ground-level ozone, acidic deposition, and visibility problems.

- Lead. Causes nervous system damage, especially in children, leading to reduced intelligence.

- Particulate matter (PM). Linked to premature death in the elderly and people with cardiovascular disease and to respiratory illness in children; affects the environment through visibility impairment.

Hazardous air pollutants. Hazardous air pollutants (HAPs), commonly referred to as air toxics or toxic air pollutants, are pollutants that cause, or may cause, adverse health effects or ecosystem damage. The Clean Air Act Amendments of 1990 list 188 pollutants or chemical groups as hazardous air pollutants and target sources emitting them for regulation. Examples of air toxics include heavy metals such as mercury and chromium, dioxins, and pesticides such as chlordane and toxaphene. HAPs are emitted from literally thousands of sources including stationary as well as mobile sources. Adverse effects to human health and the environment due to HAPs can result from exposure to air toxics from individual facilities, exposures to mixtures of pollutants found in urban settings, or exposure to pollutants emitted from distant sources that are transported through the atmosphere over regional, national, or even global airsheds.

Compared to information for the criteria pollutants, the information about the potential health effects of HAPs (and their ambient concentrations) is relatively incomplete. Most of the information on potential health effects of these pollutants is derived from experimental animal data. Of the 188 HAPs mentioned above, almost 60 percent are classified by EPA as known, probable, or possible carcinogens. One of the more documented ecological concerns associated with toxic air pollutants is the potential for some to damage aquatic ecosystems. Deposited air pollutants can be significant contributors to overall pollutant loadings entering water bodies.

Acid rain. The Clean Air Act Amendments of 1990 established a program to control emissions from electric power plants that cause acid rain and other environmental and public health problems. Emissions of SO_2 and nitrogen oxides (NO_x) react in the atmosphere and fall to earth as acid rain, causing acidification of lakes and streams and contributing to the damage of trees at high elevations. NO_x emissions are a major precursor of ozone, which affects public health and damages crops, forests, and materials. NO_x deposition also contributes to eutrophication of coastal waters, such as the Chesapeake and Tampa Bays. Additionally, before falling to earth, SO_2 and NO_x gases form fine particles that affect public health by contributing to premature mortality, chronic bronchitis, and other respiratory problems. The fine particles also contribute to reduced visibility in national parks and elsewhere. Acid deposition also accelerates the decay of building materials and paints and contributes to degradation of irreplaceable cultural objects such as statues and sculptures.

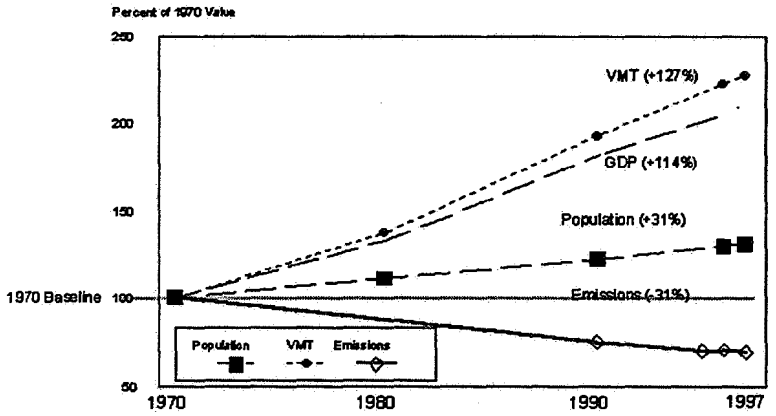
Percent Change in National Air Quality Concentrations and Emissions (1988-1997)

	Percent Decrease in Concentration 1988-1997	Percent Decrease in Emissions 1988-1997
Carbon Monoxide (CO)	38	25
Lead	67	44
Nitrogen Dioxide (NO_2)	14	1 (NO_x)
Ozone (Pre-existing NAAQS) (1-hour)	19	20 (VOC)
Ozone (Revised NAAQS) (8-hour)	16	
PM_{10}	26	12
Sulfur Dioxide (SO_2)	39	12

The table above summarizes the 10-year percent changes in national air quality concentrations and emissions. It shows that air quality has continued to improve during the past 10 years for all six pollutants. Nationally, air quality concentration data taken from thousands of monitoring stations across the country have continued to show improvement since the 1980's for ozone, PM, CO, NO_2, SO_2, and lead. In fact, all the years throughout the 1990s have shown better air quality than any of the years in the 1980s. This steady trend of improvement resulted despite the fact that weather conditions in the 1990s were generally more conducive to higher pollution levels, such as ground-level ozone formation.

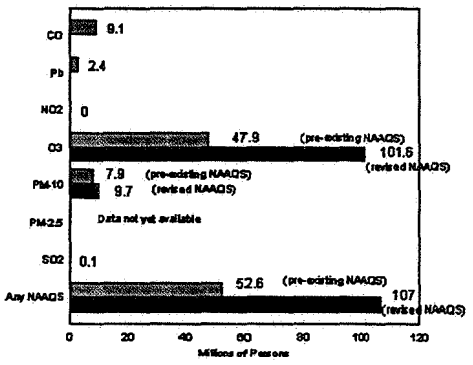
The dramatic improvements in emissions and air quality occurred simultaneously with significant increases in economic growth and population. The improvements are a result of effective implementation of clean air laws and regulations, as well as improvements in the efficiency of industrial technologies.

Comparison of Growth Areas and Emissions Trends



While progress has been made, it is important not to lose sight of the magnitude of the air pollution problem that still remains. Despite great progress in air quality improvement, in 1997 there were still approximately 107 million people nationwide who lived in counties with monitored air quality levels above the primary national air quality standards.

Number of People Living in Counties with Air Quality Concentrations Above the Level of the NAAQS in 1997



To continue to reduce air pollution, the Clean Air Act sets specific targets for the mitigation of each air pollution problem and identifies specific activities and a multi-year schedule for carrying them out. The Act also requires the air quality monitoring that helps us measure progress. In addition, the Act lays out a specific roadmap for achieving those goals - what we the Agency and our partners -- states, tribes, and local governments -- have to do to clean up the air. One constant across the titles in the Act is that the pollution control strategies and programs it contains are all designed to get the most cost-effective reductions early on. The early reductions program in toxics, Phase 1 of the Acid Rain program, and the Maximum Achievable Control Technology (MACT) program were all designed to achieve early reductions, making our air cleaner and safer to breathe. The problems that remain are some of the most difficult to solve.

We have developed strategies to address this difficult increment and overcome the barriers that have hindered progress in clean air in the past. We will use the flexibility built into the Clean Air Act, which is not wedded to hard and fast formulas or specific technological requirements.

We will focus our efforts on:

- Coupling ambitious goals with steady progress - The emphasis will be on near-term actions towards meeting the standards, while giving states, tribes, and local governments time to come up with more difficult measures. We recognize that it will be difficult for some areas of the country to attain the new National Ambient Air Quality Standards (NAAQSs) for ozone and fine particles, and we believe it will take more than individual efforts to achieve the needed emission reductions. We will work with states, tribes, and local governments to identify ways to achieve interim reductions, principally through regional strategies, national measures, and the air toxics and acid rain programs by building on cross-pollutant emission reductions.

  Using these strategies gets steady progress toward the goal and for many areas will achieve the goal. For those areas where additional measures are required, this work will allow steady progress toward the goal while providing the time to identify measures that will get that last increment to fully achieve the goal.

- Maintaining accountability with flexibility - Ensuring that there is no backsliding in the progress already made to meeting the Clean Air goal is critical. We will also use the Act's flexibility to develop innovative measures such as the NO_x trading program, which builds on the acid rain program to help states, tribes, and local governments reduce emissions at the lowest cost.

- Fostering technical innovations where they provide clear environmental benefits - Market-based approaches provide "niches" for many types of technologies; no one size will fit all. Sources can improvise, innovate, and otherwise be creative in reducing emissions. We will promote such technological innovation and then disseminate it to others to show how they can get needed reductions.

- Building partnerships - There are numerous forms of partnerships, all of which we have used at one point or another in implementing the Clean Air Act: using public outreach to educate people on the air problems and encourage them to work to solve them; involving groups, such as the multi-state Ozone Transport Assessment Group, to study a problem and provide recommendations to EPA on ways to solve it; working with organizations like the National Academy of Sciences (NAS) on both short-term and long-term research priorities; and engaging in regulatory negotiations to bring stakeholders to work on a problem and address a specific regulatory issue. We will continue to use these types of partnerships as appropriate to implement the Clean Air Act.

Research

The Agency is seeking to understand further the root causes of the air toxics environmental and human health problems in urban areas and, thereby improving the ability to weigh alternative strategies for solving those problems. Research will be devoted to the development of currently unavailable health effects and exposure information to determine risk and develop alternative strategies for maximizing risk reductions. We will be able to model and characterize not only the current toxics risk and compare national program alternatives, but also identify regional and local "hot spots" and model alternative strategies to assist states and localities in solving their air and water toxics problems.

Using these strategies, we will work with areas that have the worst problems to develop strategies accounting for unique local conditions that may hinder them from reaching attainment. We also will work with states, tribes, and local governments to ensure that work they are doing on the PM and ozone standards effectively targets both pollutants, as well as regional haze, to maximize the effectiveness of control strategies. On the national level, we will continue to target source characterization work, especially emission factors, that is essential for the states, tribes and localities to develop strategies to meet the standards. We will look closely at urban areas to determine the various sources of toxics that enter the air, water, and soil and determine the best manner to reduce the total toxics risk in these urban areas. We will also focus on research that would inform and enhance our regulatory decisions as well as research that would explore emerging areas.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Attain NAAQS for Ozone and PM

By: 2000 Provide new information on the atmospheric concentrations, human exposure, and health effects of particulate matter (PM), including PM2.5, and incorporate it and other peer-reviewed research findings in the second External Review Draft of the PM AQCD for NAAQS review.

By: 2000 EPA will certify that 5 of the estimated 30 remaining nonattainment areas have achieved the one-hour National Ambient Air Quality Standards (NAAQS) for ozone.

Objective 02: Reduce Emissions of Air Toxics

By: 2000 Provide methods to estimate human exposure and health effects from high priority urban air toxics, and complete health assessments for the highest priority hazardous air pollutants (including fuel/fuel additives).

By: 2000 Air toxics emissions nationwide from stationary and mobile sources combined will be reduced by 5% from 1999 (for a cumulative reduction of 30% from the 1993 level of 1.3 million tons.

Objective 03: Attain NAAQS for CO, SO2, NO2, Lead

By: 2000 Maintain healthful and improve substandard ambient air quality with respect to carbon monoxide, sulfur dioxide, nitrogen dioxide and lead.

Objective 04: Acid Rain

By: 2000 5 million tons of SO2 emissions from utility sources will be reduced from the 1980 baseline. Reflects total reduction that will be maintained annually.

By: 2000 2 million tons of NOx from coal-fired utility sources will be reduced from levels before implementation of Title IV of the Clean Air Act Amendments. Reflects total reduction that will be maintained annually.

Highlights

This budget request includes a new $200 million Clean Air Partnership Fund to provide through grants an opportunity for cities, states, and tribes to partner with the private sector, the Federal government and each other to provide healthy clean air to local citizens. The Fund will demonstrate smart multi-pollutant strategies that reduce air toxics, soot and smog as well as greenhouse gas emissions to protect our health and climate. The Clean Air Partnership Fund will bring the most creative ideas for cleaning the air we breathe to where they are needed most -- local communities. Innovative ideas for clean air -- ideas that save money and reduce pollution -- can be demonstrated to create a cleaner, more efficient environment at the local level. The Clean Air Partnership Fund will act as a magnet for local innovation and investment.

As part of fulfilling the President's mandate for common-sense, flexible implementation of the new PM NAAQS, OAR must provide Regions, states, and tribes with new information and tools that they need to characterize the $PM_{2.5}$ problem and develop cost-effective solutions. Because $PM_{2.5}$ is a newly regulated pollutant, only very limited source and emissions data are available. Development of refined characterization and emission inventory tools that relate mass and speciated monitoring data to potential emission sources will greatly enhance the information gained from the

$PM_{2.5}$ monitoring network. Also, emissions characterization will include information on the chemical composition of directly emitted particles, which is essential for developing source signatures used in relating ambient data to sources, as well as in conducting source-related health risk assessments. Initial results for this characterization effort will be used in the next periodic review of the $PM_{2.5}$ NAAQS. Emission characterization will focus primarily on fugitive emissions from area sources, diesel emissions from mobile sources, and selected major point source categories. The characterization and activity data work will be done in conjunction with states and tribes.

EPA is also aware that in some cases individual states, tribes, and local governments cannot solve their air pollution problems merely by analysis of problems and development of solutions within their own jurisdictions. For a number of situations, upwind emissions from other jurisdictions contribute significantly to nonattainment -- or interfere with maintenance--of a NAAQS, or affect visibility. In such cases, states, tribes, and local governments will have to join together in multi-jurisdictional efforts to gather and analyze data to document the degree of transport and recommend and implement strategies to reduce the transported contributions. The Ozone Transport Assessment Group, the Ozone Transport Commission, and the Grand Canyon Visibility Transport Commission are examples of such efforts. EPA has been actively involved in these efforts and intends to become involved in any similar future efforts that are needed.

Moreover, as some of these programs move into the implementation stage, EPA will provide the data system infrastructure to operate emissions trading programs. For example, EPA will operate the allowance and emissions tracking systems for the Ozone Transport Commission's NO_x trading program.

Ozone and PM Research

EPA's Tropospheric Ozone and PM Research Programs are devoted to the mission of providing an improved scientific basis for: 1) periodic review and revision of the NAAQS, as needed; and 2) implementation and attainment of the NAAQSs.

Under the Tropospheric Ozone Research Program, the Agency develops information, methods, models, and assessments to support implementation of the current ozone NAAQS and the required review of the standard every five years. Implementation-related research is coordinated through NARSTO (the North American Research Strategy for Tropospheric Ozone) to improve the scientific basis for future ozone attainment strategies through the implementation and attainment of NAAQS. The NAAQS review efforts are closely coordinated within EPA to ensure assessment documents are produced in time to support policy decisions.

Under the PM Research Program, research focuses on areas recommended by NAS that contribute to the NAAQS review and implementation and attainment of the NAAQS. Such areas include: outdoor measures versus actual human exposures; exposure of sensitive subpopulations to PM; dosimetry; effects of PM and copollutants; susceptible subpopulations; mechanisms of injury; assessment of hazardous PM components; source-receptor measurement tools; application of methods and models; and analysis and measurement. Research will also aid in ensuring that the

sites, which were initially designed to support implementation, are sufficient to meet the health and exposure research needs.

Targeting Air Toxics Risks in Urban Areas

To date, our air toxics program priority has been to reduce toxic emissions through technology-based MACT standards. Since 1990, EPA has issued 27 air standards which, when fully implemented, will reduce one million tons per year of toxic air emissions. The next step is to begin to identify and reduce the remaining risk. Our plan is to build on current technical capabilities and develop inventories, modeling capability, and an air toxics monitoring network to determine risk and measure risk reduction on a national and local scale. In addition, we plan to measure risk and determine if additional regulations are needed to address residual risk remaining after the MACT standards are promulgated.

In 2000, EPA will promote a new national regulatory strategy that targets the highest risk toxics in the most populated areas. The Agency will target both stationary and mobile sources as well as the interrelationships with the water and solid waste media. EPA proposes to make a very deliberate effort to use risk assessment tools to set an agenda that provides a new focus for the air toxics program. This includes setting an alternative cross-media agenda based on cumulative environmental risk. The concept of making risk-based decisions is not new to the Agency, but the technical difficulty of determining risk has restricted its use. When risk assessment is used, it is generally applied very narrowly -- for example, in setting individual standards -- but has not been used to set a broad multi-media program agenda. We believe that the science of determining risk has advanced sufficiently to enable the Agency to make much better cross-Agency decisions on how to protect public health and the environment.

Air Toxics Research

The Air Toxics Research Program will provide the effects information, as well as the exposure, source characterization, and other data, to quantify existing emissions, key pollutants, and strategies for cost effective risk management. The program will focus on the 30 most hazardous air pollutants found in urban areas. Research will focus on these areas: (1) health effects characterization and methods; (2) exposure assessment methods and models; (3) assessments and assessment methods; and (4) risk reduction and mobile emission models.

Acid Rain

The Acid Rain program will begin Phase II in the emissions reduction program with calendar year 2000. In Phase II, the allowance allocation for the Phase I plants is to be reduced and all the remaining powerplants, with limited exceptions, are to be subjected to the allowance requirements. There will be a cap on power plant SO_2 emissions. Regional reductions of nitrogen oxide pollution from powerplants using an emissions trading approach will get to clean air faster and cheaper without imposing unfair burdens on local communities.

EPA is responsible for operating the Clean Air Status and Trends Network (CASTNet) dry deposition network and for providing support for operations of the National Atmospheric Deposition Program (NADP) wet deposition network and for a number of visibility monitoring sites. These monitoring efforts play a crucial role in the Acid Rain Program's ongoing assessment activities, including reporting program results for GPRA and fulfilling assessment responsibilities under Title IX of the Clean Air Act and the U.S.-Canada Air Quality Agreement. In 2000, EPA will be analyzing the costs and benefits of the program for inclusion in NAPAP's 2000 Integrated Assessment Report to Congress. Assessment activities are critical to determine what environmental and public health results are being achieved as emission reductions are realized. Assessing the results of the Acid Rain Program will involve analyses over various spatial scales as well as over time to address the expected lag times for seeing ecological responses to large reductions in emissions and deposition.

Other Highlights

For all NAAQS pollutants, we will continue area redesignations as they meet the standard, carry out the regular review of the NAAQS using the most current science, and ensure that areas that have clean air stay clean. For the CO, SO_2, NO_2 and lead programs, there are some states that have areas that cannot meet attainment because of some particular, source-specific problem. These sources are often high-profile and critical to the local economy. We will work cross-Agency to develop strategies that help them to comply while being sensitive to the economic and other issues.

EPA has established a permitting program, run by the states, for air emission sources to bring all the regulatory requirements of a plant into one unified operating permit document. There are also permit programs preconstruction facilities. EPA will continue to simplify and streamline the rules and guidance in implementing these programs to simplify their use by the industrial sources.

External Factors

Federal, state, tribal, and local governmental agencies; industry; and individuals must work together to achieve the goal of healthy, clean air. Success is far from guaranteed. Much remains to be done if the health and environmental improvement targets in the Clean Air goal are to be achieved. Meeting the goal depends on strong partnerships among many stakeholders. States, in particular, will play a pivotal role by enforcing, permitting, providing information and working with EPA on standard setting.

EPA's ability to achieve our long-term goals and objectives is also predicated on an adequate level of resources for program implementation. The objectives in this plan are based on requested funding levels. If appropriations are lower or different from requested, some objectives may be difficult to achieve. Other factors that could delay or prevent the Agency's achievement of some

objectives include: lawsuits that delay or stop planned activities and new or amended legislation, extreme natural conditions, and unanticipated economic growth.

A variable that we have to consider in developing programs to achieve the Clean Air goal is unforeseen climatic extremes. In developing their clean air strategies, states, tribes, and local governments consider the normal meteorological patterns. However, a hot, dry summer, for example, may prevent areas from gaining the three full years with clean air data needed to gain attainment with air standards despite the full implementation of emission control plans. Additionally, clean air strategies attempt to predict changing demographics, transportation demands, impacts of urban sprawl, and industrial growth. An increase or large shift in any of these factors can significantly impact air quality.

Accomplishing the Acid Rain objective's targets for a decrease in ambient concentration and deposition of nitrates assumes that other sources of nitrogen oxides, such as mobile sources, do not grow at a faster rate than currently projected. The Acid Rain program is also affected by demand for electric power and the fuels used by electric utilities.

The rate at which toxicity testing external to EPA on alternative Tier 2 and Tier 3 fuel/fuel additives is completed will determine the number of risk assessments that can be completed in 2000 and in out years. This external testing is done by a variety of scientists who work for oil companies, academia, pharmaceutical companies, and other Federal agencies, such as the National Institutes of Health or the Food and Drug Administration, as well as contractors who specialize in this work. The information may be generated for reasons that have little to do with EPA's programs -- such as a result of some academic work or for some occupational exposure concern -- or as a result of a direct EPA requirement beyond that of the fuels and fuels additives program -- such as for pesticide tolerances. There is toxicity data generated for many reasons and the data generated may be relevant to the work of the mobile source program. Hazardous Air Pollutant (HAP) testing through the HAP Test Rule is also critical for development of cancer and non-cancer dose-response assessments as part of the Urban Air Toxics Strategy which seeks to reduce risk of the 33 HAPs presenting the greatest threat to public health. Without this fundamental data, toxic emission reduction and subsequent risk reduction to the American population, could be significantly delayed.

Coordination with Other Agencies:

Clean air is a national goal which requires the cooperation and efforts of many agencies, organizations, industries and academic entities. Beyond EPA, for example, each state has a department of natural resources, environment, or health that deals with air pollution issues. The Agency coordinates with several other Federal agencies in achieving goals related to ozone and particulate matter. For example, EPA worked closely with the Department of Agriculture in developing its agricultural burning policy. EPA, the Department of Transportation, and the Army Corp of Engineers, work with state and local agencies to help them manage growth and urban sprawl. EPA worked with the Department of the Interior, National Park Service, in developing its regional haze program and deploying the IMPROVE visibility monitoring network.

Research

EPA's tropospheric ozone research program is coordinated with the research efforts of others. As such, a significant portion of the tropospheric ozone research is coordinated through the efforts of NARSTO. The remainder of the EPA tropospheric ozone research program focuses on needs associated with the review of the tropospheric ozone NAAQS, which is also not being met by others.

The science and policy communities have agreed that solving the PM issue will require substantial, coordinated research efforts. EPA is taking steps to achieve public/private coordination and cooperation by (1) initiating health and exposure research coordination among Federal agencies and with public/private research organizations; (2) completing an EPA Research Strategy for PM; and (3) participating as a sponsoring member of NARSTO as it realigns its mission and research agenda to include PM atmospheric sciences research. An inventory of PM research in the public and private sectors has been developed.

The 1998 Appropriations Act identified an important role for NAS in developing and monitoring implementation of a comprehensive, prioritized, near- and long-term PM research plan, working in close consultation with representatives from many public and private sector organizations. The PM research plan is intended to be the principal guideline for the Agency's PM research program for the next several years. The plan also affects other agencies, with Congress expecting the EPA and other Federal agencies to review their ongoing PM research activities and, where appropriate, re-focus activities so as to be consistent with the NAS plan.

EPA is the world leader in several areas of PM research (e.g., causal mechanisms). Opportunities exist to complement EPA capabilities through programs targeted toward the academic community, such as in epidemiology research to evaluate the consequences of long-term exposure to ambient PM. The Department of Health and Human Services supported much of the current epidemiological research on links between long-term exposure to ambient PM and life shortening and other long-term health effects, thus the capacity to conduct large-scale epidemiological research on PM is generally found outside EPA. EPA is entering into an Interagency Agreement with the National Institute of Allergy and Infectious Diseases to study, for the next several years, the role of PM and co-pollutants on asthma in children.

In a national air toxics strategy, EPA will address whether any control measures are needed to address the urban toxics risk beyond other actions required nder the Clean Air Act Amendments. EPA's toxic research supports the Agency's regulatory efforts, which aid state and local governments in lowering major source and mobile source emissions.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Clean Air

Objective #1: Attain NAAQS for Ozone and PM

By 2010, improve air quality for Americans living in areas that do not meet the National Ambient Air Quality Standard (NAAQS) for ozone and particulate matter (PM).

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Attain NAAQS for Ozone and PM	**$361,648.7**	**$384,863.2**	**$489,618.4**	**$104,755.2**
Environmental Program & Management	$86,102.3	$81,847.5	$74,644.4	($7,203.1)
Science & Technology	$128,926.6	$147,060.1	$126,164.0	($20,896.1)
State and Tribal Assistance Grants	$146,619.8	$155,955.6	$288,810.0	$132,854.4
Total Workyears:	1,100.1	1,086.2	1,135.3	49.1

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Particulate Matter Monitoring Network (non-grant)	$25,000.0	$25,000.0	$14,613.0
Particulate Matter Monitoring Network Grants	$50,700.0	$50,700.0	$42,535.0
Air,State,Local and Tribal Assistance Grants: Other Air Grants	$95,919.8	$105,255.5	$112,975.0
Mobile Sources	$54,824.2	$45,975.0	$47,464.0
Tropospheric Ozone Research	$19,762.7	$20,083.4	$7,217.9
Particulate Matter Research	$37,587.0	$55,656.8	$61,855.6
Sustainable Development Challenge Grants*	$7,686.8	$0.0	$0.0

Urban Environmental Quality and Human Health	$440.0	$0.0	$0.0
EMPACT	$3,537.3	$2,578.7	$2,273.6
Project XL	$390.5	$0.0	$390.5
Common Sense Initiative	$135.6	$0.0	$635.6
Tribal Capacity	$3,812.7	$3,812.7	$3,894.9
Clean Air Partnership Fund	$0.0	$0.0	$133,300.0

* Effective in the FY 1999 Enacted Budget, these resources were transferred to Goal 8.

FY 2000 Request

Under the Clean Air Act, EPA must set NAAQSs for pollutants that are widespread, endanger public health and the environment, and originate from numerous and diverse sources. For each pollutant, EPA sets health-based or "primary" standards to protect human health, and welfare-based or "secondary" standards to protect the environment (crops, vegetation, wildlife, buildings, and national monuments, etc.). States and tribes then must develop and carry out strategies and measures to attain the NAAQSs. These strategies and measures are included in state implementation plans (SIPs) and tribal implementation plans (TIPs). The Clean Air Act also requires states with national parks and wilderness areas to develop programs to protect and improve visibility. EPA works in partnership with Federally recognized tribes to carry out Federal trust responsibilities and implement those provisions of the Act that most effectively address air quality management concerns on tribal lands.

EPA's strategy for achieving the objective for ozone, PM, and regional haze builds on the President's July 16, 1997, letter "Implementation of Revised Air Quality Standards for Ozone and Particulate Matter," to EPA's Administrator. In carrying out the strategy, EPA is committed to a common sense, cost-effective approach that follows the principles outlined when the new standards were announced. The strategy and implementation principles take into account the recommendations and ideas of an interagency Administration group and of a broad-based committee established by EPA under the Federal Advisory Committee Act (FACA). This strategy also includes an interagency research program, including a full scientific and technical review of the new fine particulate ($PM_{2.5}$) standard by 2002.

In 2000, EPA will provide research, tools, and data: (1) to support EPA's decisions on the need to revise or reaffirm the NAAQS for PM in 2002 and later years; and (2) to support state, tribal, and local analyses of their ozone and PM problems and the need for additional air pollution controls. EPA also will make a determination on whether to establish Federal standards and measures for key stationary and mobile sources that contribute to unhealthy levels of ozone and $PM_{2.5}$ and that are best regulated at the national level. The proposal implements President Clinton's July 1997 plan for enhancing scientific knowledge and filling critical information gaps before states, tribes, and local governments identify areas not meeting the health-based NAAQSs and begin to develop programs

to reduce health risks. The proposal also helps align EPA-funded research with PM research recommendations from the National Academy of Sciences (NAS).

EPA will focus extensively on public outreach and access to high quality information for general and technical audiences to facilitate public understanding and smooth implementation of the new NAAQSs. Improved information quality and access will enable citizens and users to obtain "real-time" air quality information, and enable EPA to better track environmental indicators and assess progress.

Ozone

Ozone can impair normal functioning of the lungs in healthy people, as well as in those with respiratory problems. Relatively low amounts of ozone can cause chest pain, shortness of breath, and coughing. Ozone also may worsen asthma, bronchitis, and emphysema. Repeated exposure to elevated levels of ozone over months to years may damage lung tissue and reduce quality of life. Repeated exposure to high levels of ozone for several months can also produce permanent structural damage in the lungs. Adverse ecosystem effects are known to occur for various species of vegetation and are likely to extend to entire ecosystems. Ozone damage to plants is extensive, with an estimated impact exceeding $34 million in lost crops and timber products each year.

More people are exposed to unhealthful levels of ozone than to any other air pollutant. Over 122 million people live in areas that do not meet the new health standard for ozone, over 15 million more than the previous standard. Meeting the new ozone standard will protect 13 million more children from exposure to unhealthful levels of smog than the previous standard.

Unlike most other pollutants, ozone is not emitted directly into the air by specific sources, but is created by sunlight acting on nitrogen oxides (NO_x) and volatile organic compounds (VOCs). Some common sources include: gasoline vapors, chemical solvents, combustion products of fuels, and consumer products. Emissions of NO_x and VOCs from motor vehicles and stationary sources can be carried hundreds of miles from their origins, and result in high ozone concentrations over very large areas of the country.

To address the persistent and widespread problem of ozone transport, EPA will continue to work with affected states, local governments, and tribes using a regional approach. Two multi-state groups -- the Ozone Transport Commission (OTC) and the Ozone Transport Assessment Group (OTAG) – collaborated to recommend regional strategies to control ozone transport in the Northeast, Southeast, and Midwest. Relying on the recommendations of the OTAG, EPA proposed a NO_x emission control strategy to reduce transport of ozone and major ozone precursors that contribute to downwind nonattainment and interfere with maintenance of the ozone NAAQS for 22 eastern states and the District of Columbia. Building on the success of the market-based acid rain program, OTAG proposed a large-scale, market-based NO_x trading program. This trading program should result in a cost-effective solution for attaining and maintaining the new NAAQS. To facilitate trading

programs, EPA will continue to review and approve emissions trading protocols for nationally significant source categories.

To better assess the causes of the ozone problem, EPA will continue to collect ambient air measurements for a target list of VOCs, (precursors to both ozone and PM) as well as for nitrogen, ozone, and both surface and upper air meteorological measurements from the photochemical assessment monitoring station (PAMS) network. By 2000, most of the PAMS areas will have monitoring sites with three to seven years of data. Continued national and local analyses of the PAMS data will provide: 1) insight into how ozone precursors and toxic pollutants contribute to the ozone problem; 2) a trends assessment of ozone, ozone precursors, and toxic pollutants; 3) an evaluation of pollutant management programs: and, 4) a data base for developing control strategies. EPA also will explore and implement improvements to emissions testing and monitoring approaches for VOCs, including better and less expensive continuous monitors and more reliable techniques for analysis of water-based coatings, inks, and other solvents.

To address the need for further reductions in motor vehicle emissions to attain and maintain the new NAAQS, the Agency will review current motor vehicle and fuel standards and develop new programs. In 1996, light-duty vehicles (LDVs) and light-duty trucks (LDTs) contributed more than 22 percent of national NO_x emissions and 25 percent of VOC emissions. In 1998 EPA submitted its Tier II Report to Congress (EPA 420-R-98-008; July 31, 1998) according to the requirements under subsection 202(I) of the Clean Air Act. The Tier II report concluded that there is a need for further reductions in emissions for LDVs and LDTs. The Agency will complete heavy-duty gasoline standards and Tier II LDV and LDT standards which will be effective not earlier than the 2004 model year. EPA will start working on post 2004 NO_x and PM standards for heavy-duty vehicles.

Building on the emission standards for compression ignition (CI) engines promulgated in the early 1990s, EPA recently promulgated a new emission control program for non-road engines. Domestic and ocean-going CI marine engines account for approximately 4.5 percent of total mobile source NO_x emissions nationwide. However, because of the nature of their operation, the contribution of these engines to NO_x levels in certain port cities and coastal areas is much higher. To address these emissions, this program contains stringent standards that will greatly reduce NO_x emissions from these marine engines at or above 37 kilowatts (50 horsepower). EPA will finalize marine diesel engine standards and will publish the determination of significance for the large spark-ignition (SI) non-road engines. These standards set out a two-phase emission control strategy for marine diesel engines that are derived from, or use the same technologies as, land-based nonroad or locomotive engines. The first phase would go into effect in 2004 or 2006, depending on engine size. The second phase would go into effect in 2008 or 2010, but will be subject to a feasibility review in 2003. EPA expects to see a 34 percent reduction in NO_x emissions and a 14 percent reduction in PM emissions in 2030 when the program is fully phased-in. Overall, the program would provide much-needed assistance to states facing ozone and particulate air quality problems that are causing a range of adverse health effects for their citizens, especially in terms of respiratory impairment and related illnesses.

EPA will implement regulations for the control of exhaust emissions from new SI gasoline marine engines, including outboard engines, personal watercraft engines, and jet boat engines. These regulations will achieve 75 percent reduction in hydrocarbon (HC) emissions from new gasoline marine engines by the year 2025. The emission standards, which will affect outboard and personal watercraft engines, will be phased in over a nine-year period beginning in model year 1998. The 1990 emissions from marine vessels operating in the South Coast Air Basin have been estimated to be in the range of 30 to 40 tons of NO_x per day. EPA has been an active participant in the International Maritime Organization's (IMO's) negotiations of a new Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), which will reduce NO_x from marine diesel engines. The MARPOL standards are expected to reduce NO_x emissions by 30 percent per engine compared to current engines and will apply to all engines installed on or after January 1, 2000. These standards will apply to the majority of foreign-flagged ocean-going vessels.

EPA will implement the emission standards for locomotives that will result eventually in more than 60 percent reduction in NO_x, beginning in the year 2000, to help states comply with NAAQS for ozone and PM. Since locomotive emissions have not been regulated before, it was necessary for EPA to create a comprehensive program, including not only emission standards, but also test procedures and a full compliance program. There are three separate sets of locomotive emission standards, with applicability of the standards dependent on the date a locomotive is first manufactured. The first set of standards (Tier 0) apply to locomotives and locomotive engines originally manufactured from 1973 through 2001, any time they are remanufactured in calendar year 2000 or later. The second and third sets of standards (Tier 1 and Tier 2) apply to locomotives and locomotive engines originally manufactured on or after January 1, 2002 (Tier 2 standards will take effect on January 1, 2005). The Agency will establish a rigorous emission testing program to make sure that locomotives comply with these standards for the life of the locomotive.

The Agency will continue to ensure implementation of vehicle inspection and maintenance (I/M) programs and to review SIPs. In 2000 about 37 states will be implementing I/M programs. EPA primarily will provide technical and programmatic guidance to states and local agencies for implementing high technology-based I/M programs. The Agency will develop Onboard Diagnostics (OBD) SIP credits and will finalize implementation guidance for I/M test methods. In preparation for 2001 implementation of mandatory OBD inspection in I/M lanes, EPA will evaluate the adequacy of the OBD technology in identifying high emitting vehicles, vehicle owner responsiveness to OBD malfunction indicator lights, and adequacy of the technology in replacing tailpipe testing for OBD-equipped vehicles throughout their useful life.

EPA will assist in the evaluation of the National Highway System Designation Act (NHSDA) programs, facilitating actions across regions to ensure national consistency on the adequacy of demonstrations. As part of implementing the new ozone-regional haze standards, EPA's Transportation Air Quality (TRAQ) Center will continue assistance to states and local governments including implementation of the transitional transportation conformity rule and support for voluntary mobile source programs. EPA will continue to develop partnerships that emphasize the development of innovative transportation control strategies and voluntary mobile source programs.

The Agency will implement Phase II of the reformulated gasoline (RFG) program, which will result in additional VOC and NO_x emission reductions involving approximately 30 billion gallons of reformulated gasoline in 18 states and will provide technical and programmatic guidance to states implementing clean fuel programs. EPA will continue efforts to enhance state flexibility to adopt RFG programs. RFG is designed to reduce vehicle emissions of ozone-forming pollutants, and it is estimated to reduce both VOC and toxic emissions by 25 percent. EPA will process approximately 100,000 fuel quality reports and review 156 fuel surveys with 17,000 samples.

The National Vehicle and Fuels Emissions Laboratory (NVFEL) will continue to conduct tests to support mobile source programs. In 2000, EPA will conduct testing activities for fuel economy, LDV and heavy-duty engine (HDE) characterization, Tier II testing, Tier I tailpipe and cycle effects, reformulated gasoline, future fleets, OBD evaluations, certification audits and recall programs. The NVFEL will conduct testing on approximately 20 classes of LDVs and 30 HDVs for compliance with standards. The MOBILE6 model will be implemented by users; the Agency will provide support.

The certification program will oversee more than 100 original equipment manufacturers and issue certificates of compliance with the latest emission standards for criteria pollutants. The mobile source fees program will collect approximately $10.87 million, offsetting costs of the certification, recall, selective enforcement audit, and fuel economy programs. The statutory fuel economy information program will issue 1,000 fuel economy consumer labels and data for the Gas Mileage Guide and "gas guzzler" tax collection. This program will issue approximately 600 certificates for LDVs, 400 certificates for CI ignition engines, 100 certificates for SI and marine engines, 1,500 test audits for manufacturer compliance and 400 confirmatory tests. The Agency will respond to approximately 200 Freedom of Information Act (FOIA) requests.

EPA will continue implementing the new compliance assurance program (referred to as "CAP 2000") for LDVs and LDTs which integrates the certification and in-use programs, easing manufacturers testing and reporting. CAP 2000 will simplify and streamline the current procedures for pre-production certification of new motor vehicles. This certification program will provide the same environmental benefits as the current procedures while significantly reducing the certification cost for manufacturers giving manufacturers more control of production timing. Manufacturers will be allowed to voluntarily opt-in to the CAP 2000 procedures beginning with the 2000 model year. EPA estimates that, overall, manufacturers would save about $55 million dollars a year.

Particulate Matter

PM is the term for solid or liquid particles found in the air. Some particles are large enough to be seen as soot or smoke. Others are so small they can be detected only with an electron microscope. Because particles originate from a variety of mobile and stationary sources (diesel trucks, woodstoves, power plants, etc.), their chemical and physical compositions vary widely. PM can be directly emitted or can be formed in the atmosphere when gaseous pollutants, such as sulfur dioxide (SO_2), VOCs and NO_x, react to form fine particles.

The health risks estimated from current fine particulate matter exposures represent tens of thousands of premature deaths each year, placing fine PM at or near the top of environmental health threats. EPA estimates that approximately 74 million people live in areas that may not meet the new $PM_{2.5}$ standard. Meeting the new standard will save up to 15,000 lives per year, and protect an additional 12 million children.

EPA will better define the $PM_{2.5}$ problem through assisting states and tribes in establishing a nationwide monitoring network and carrying out source characterization analyses. Since promulgating the new $PM_{2.5}$ standards, EPA has been working with states and tribes to install fine PM monitors and obtain data on fine particle emissions. This network is expected to be operational on December 31, 1999. EPA has committed to provide 100 percent of the funding through state and tribal grants under the authority of section 103 of the Clean Air Act. EPA also will promote the use of continuous PM monitoring and improved fine PM test methods. States and tribes will also use the air quality data and chemical speciation data to identify PM sources and "hot spots" and use this information in developing SIPs and TIPs. EPA is discussing with the NAS and other scientists ways to increase the usefulness of the resultant monitoring data to PM health effects and epidemiology researchers.

EPA, states, and tribes will continue to monitor PM_{10} and EPA will use the monitoring data for PM_{10} to designate attainment/nonattainment areas, characterize emission sources, evaluate air quality models, and contribute the regular scientific health review of the standard.

EPA will assist states, local governments, and tribes in devising stationary source and mobile source strategies to reduce PM. All on-going efforts to meet the pre-existing PM_{10} standards will help to meet the new standards as well. Accordingly, EPA will continue to assist states, local governments, and tribes in maintaining existing control programs in this interim period between having promulgated final particulate matter standards and developing new SIPs and TIPs that address the revised PM standards.

Levels of PM caused by mobile sources are expected to rise in the future due to the predicted increase in the number of individual mobile sources and in motor vehicle travel. The Agency will continue to address the need for further reductions in motor vehicle emissions to attain and maintain the NAAQSs through the review of current motor vehicle and fuel standards and the development of new programs. In 2000, the Agency will finalize the revised guidance on estimating PM_{10} and $PM_{2.5}$ emissions from mobile sources. EPA will implement the new diesel fuel standards and the 1999 rule technology and will evaluate progress on the clean diesel initiative. The Agency will finalize heavy-duty gasoline standards, the Tier II LDV and LDT standards, the new diesel fuel sulfur controls and the PM standards for the nonroad engines Tier III NOx (2001 tech review). The Agency will develop new PM emission factors and will start working on PART6 (Particulate emission factor model) for PM_{10} inventories and analyses. EPA will conduct studies on in-use performance of advanced technology vehicles.

EPA will develop a series of guidance documents for the new particulate matter program to provide infrastructure for implementing the new standards. EPA will continue public outreach activities, especially to create materials for the general public on fine particulate matter.

EPA will improve the characterization of mobile, stationary, and fugitive source particulate matter contribution to $PM_{2.5}$ nonattainment designations. Emission factors and inventories will be developed along with air quality models (e.g., MODELS3). This is a critical need before SIP planning can proceed for 2002. The highest priority for $PM_{2.5}$ emission sources will be combustion processes, condensibles, ammonia, and priority SO_2 and NO_x sources. Area sources of $PM_{2.5}$ are high profile and high emitting point sources. For mobile sources, EPA will continue to highlight cycle effects including development and testing of realistic light, medium, and heavy-duty vehicle cycles as well as non-road cycles. This testing will involve a broad range of model years and an intensive look at pre- and post-control nonroad engines.

Visibility

Visibility impairment, caused by the presence of tiny particles in the air, is most simply described as the haze that obscures the clarity, color, texture, and form of what we see. The Clean Air Act gives special protection to natural areas that we want to preserve for future generations, such as our national parks and wilderness areas.

EPA proposed a regional haze program in conjunction with the new standards for ozone and particulate matter and will promulgate a final rule in 1999. Because of regional variations in natural conditions which combine with man-made pollution to produce regional haze, EPA believes that regional haze should be addressed through a region-specific program that accounts for these variations. This most likely would result in a regional program for Western states that is different, for example, from one for Northeastern states.

Since 1987, EPA has supported the long-term visibility monitoring program known as the Interagency Monitoring of Protected Visual Environments (IMPROVE) network. The IMPROVE network collects data on visibility, including optical and photographic data, at 30 sites. To broaden understanding of class I area visibility, EPA will add an additional 78 sites to the IMPROVE network by the end of 1999. EPA will work with western states to determine the steps that are needed to preserve clear days and improve visibility in the 16 national parks and wilderness areas located in the Colorado Plateau. An Eastern regional haze program will address visibility impairment in the Appalachian Mountains. IMPROVE sites will also better characterize background $PM_{2.5}$ levels.

Regional emissions reductions to attain a fine particle NAAQS and meet requirements of other programs (such as the acid rain program) are expected to improve visibility in certain parks and wilderness areas, particularly in the East. In parts of the West, visibility is expected to improve as Western states implement the recommendations of the Grand Canyon Visibility Transport Commission.

Implementation of NAAQSs and Visibility Requirements

Ground-level ozone, fine PM, and regional haze have many similarities. Both ozone and PM (and the resulting regional haze) remain in the atmosphere for days, leading to regional scale transport that can affect broad areas of the country. Both pollutants are formed under certain atmospheric conditions by gases, such as NO_x and VOCs, emitted by the same types of sources. Moreover, there are similar health effects associated with exposure to ozone and PM (e.g., increased respiratory symptoms and increased hospital admissions and emergency room visits for respiratory causes). The similarities between the pollutants and the regional haze problem provide opportunities for integrated strategies for reducing pollutant emissions in the most cost-effective ways.

EPA is developing guidance for implementing the revised ozone and PM NAAQS and the regional haze rule. In that effort, EPA is incorporating the results of the process EPA established under the FACA to obtain ideas on an integrated approach to implementing the standards. In August 1998, EPA issued for public review and comment draft guidance on some implementation aspects, including a possible nonattainment classification scheme, SIP submission and attainment dates, reasonably available control measures and technology (RACM/RACT) provisions, and SIP requirements for a new transitional classification for the new 8-hour ozone NAAQS. EPA issued for public review and comment draft guidance covering additional implementation aspects in October 1998. After considering comments on these drafts, EPA intends to issue final guidance in mid-1999.

The proposed regional NO_x emission control strategy noted above is anticipated to bring many areas into attainment of the 1-hour and 8-hour ozone standards earlier than would have otherwise been possible, and will reduce the need for other areas to develop local emission control measures in order to attain the NAAQS. The regional NO_x program will also reduce particulate matter emissions.

The strategy for implementing the ozone, particulate matter, and regional haze standards will be targeted at maintaining air quality protection efforts currently underway and building on the agreements and progress already made by communities and businesses. In carrying out the implementation strategy, EPA will seek to reward state, tribal, and local governments and businesses that take early action to reduce air pollution levels through cost-effective approaches and address pollution that travels across jurisdictional lines. EPA will work with states and tribes to develop control programs that employ regulatory flexibility to minimize economic impacts on businesses to the greatest possible degree consistent with public health protection. EPA also will attempt to minimize regulatory burdens for states, tribes, local governments, and businesses and ensure that air quality planning and related Federal, tribal, state and local planning are coordinated.

Research

Tropospheric Ozone

The Tropospheric Ozone Research Program provides the scientific foundation for understanding the potential risks and developing the necessary solutions in support of implementation of the current ozone NAAQS and the required review of the standard every five years. Implementation-related research is coordinated through NARSTO (the North American Research Strategy for Tropospheric Ozone partnership, chartered by the White House in February, 1995), which seeks to improve the scientific basis for ozone attainment strategies in the United States, Canada, and Mexico.

As part of its NARSTO-related research, EPA will complete its ozone-focused research on atmospheric chemistry and modeling to produce, evaluate, and apply a next generation atmospheric model for ozone (Models-3/CMAQ, the Community Multi-scale Air Quality model). In 2000, the ozone component of the Models-3/CMAQ will be evaluated against field data to ensure its reliability in future attainment planning. EPA researchers will also conclude work on the model which will correct some of the well-documented deficiencies in the chemistry mechanisms for biogenic and aromatic volatile organic compounds (VOCs). Correcting these deficiencies will remove some of the uncertainties that state, tribal and local air quality managers face in forecasting the benefits of alternative ozone source controls.

Another area of focus in FY2000 will be to improve methods for making physical observations of ambient VOC and NO_x chemistry which leads to ozone formation, and to test these methods in regional field studies. These methods hold the potential to manage precursor emissions in order to reduce tropospheric ozone. For NO_x and its products, the EPA will produce a method by which progress in emissions reductions and air quality benefits from controls placed on utilities and automobiles under the 1998 state implementation plans (SIPs) required in the Ozone Transport Region of the Eastern U.S. can be measured by observation.

EPA will continue to perform periodic, comprehensive scientific assessments of ozone. Agency consultation and support in the area of ozone will permit risk assessments by state, regional, and international air pollution control organizations with more certainty. These efforts will provide EPA's Office of Air and Radiation with the information needed to develop and implement ozone policies based on sound science. In 2000, new information on the atmospheric concentrations, human exposure, and health and environmental effects of tropospheric ozone will be incorporated into the External Review Draft of the Ozone Air Quality Criteria Document (AQCD), which will be completed and released for public comment and Clean Air Science Advisory Committee (CASAC) review in 2000. Additional EPA research will focus on developing a NAAQS for carbon monoxide. This involves creating a development plan, CASAC review of the plan, and development of an External Review Draft of the AQCD, CASAC and public review of the External Review Draft, and incorporation of review comments before a Carbon Monoxide AQCD can be finalized in 2000.

Particulate Matter

The particulate matter (PM) research program provides the scientific foundation for understanding the potential risks and developing the necessary solutions in support of implementation of the current PM NAAQS and the statutorily required review of the standard every five years. EPA's PM research will support this mandate through NAAQS review and implementation in keeping with the PM NAAQS implementation plan laid out in the July 16, 1997 Memorandum for the Administrator of the Environmental Protection Agency from President Clinton.

One of the most significant steps in re-evaluating the PM NAAQS is the development of a risk assessment based on an AQCD. To meet the re-evaluation schedule of PM NAAQS in 2002, an External Review Draft of the PM AQCD must be completed and reviewed (as per Clean Air Act mandate) by the CASAC in 2000. To support this review, researchers will perform periodic, comprehensive scientific assessments to understand the differences in health effects between coarse and fine particles and interactions of PM with other pollutants and weather. Researchers also will conduct scientific assessments to determine the best health and exposure metrics to estimate health outcomes and susceptibility of sensitive subgroups, such as children. These efforts will enable state, regional, and international air pollution control organizations to perform risk assessments with greater certainty. In 2000, EPA will complete two key studies describing PM health effects in exposed humans. This study, along with two others to be completed in 1999, will form the basis of the AQCD.

The Agency's PM research efforts will focus on the reasearch areas recommended by the National Academy of Sciences (NAS) in its report "Research Priorities for Airborne Particulate Matter I." These areas include:

- Outdoor measures versus actual human exposures.
- Exposure of susceptible subpopulations to PM.
- Source-receptor measurement tools.
- Application of methods and models.
- Assessment of hazardous PM components.
- Dosimetry.
- Effects of PM and co-pollutants.
- Susceptible subpopulations.
- Mechanisms of injury.
- Analysis and measurement.

In 1997, EPA promulgated a new PM NAAQS that added PM2.5. This resulted in the need for several new research activities to aid implementation and to make implementing the new PM 2.5 standard more cost-effective. Recognizing the similarities between these PM implementation research needs and those for tropospheric ozone, NARSTO has expanded its mission to include PM research. The EPA's part of the NARSTO agenda will seek to: (1) understand further and be able to model the atmospheric chemistry of PM with respect to fate and transport, and (2) develop and

evaluate particle measurement methods to characterize atmospheric PM and evaluate attainment progress. The results of this research program in 2000 will provide the preliminary evaluation of an air quality model (the Models-3/CMAQ model for PM) that the States can use to predict which reductions in emissions sources will likely achieve PM NAAQS attainment. Models-3/CMAQ and similar models require the best available understanding of air chemistry, in this case the formation of PM2.5. Thus in 2000, EPA research will produce information on key chemical and physical processes that determine the mass and chemical composition of PM. EPA will also improve receptor models as an important means of identifying source categories contributing PM to a given geographic area of concern, and determining the benefits of their control as they occur. These research efforts support the NAS research areas "outdoor measures versus actual human exposure," "source-receptor measurement tools," and "assessment of hazardous PM components."

The greatest uncertainties for PM risk assessment are in our knowledge of the mechanisms of mortality and morbidity, characteristics of the particles responsible for the effects, quantitative nature of the effects (e.g., the shape of the dose-response curve), and exposures (particularly of susceptible subpopulations) to PM of ambient origin. EPA will continue to evaluate the relationship between health effects and PM exposures, using epidemiological techniques and significantly improved characterization of exposures. This work will enable researchers to both characterize and quantify the morbidity and mortality associated with "real world" short- and long-term exposures. These activities support three research areas recommended by the NAS, i.e. "outdoor measures versus actual human exposure," "assessment of hazardous PM components,"and "susceptible subpopulations. "

EPA will also continue a substantial effort in toxicological and clinical research to identify and evaluate several hypotheses regarding the biological mechanisms for respiratory and cardiovascular effects associated with PM. Research will continue to focus on the potential role of metals present in PM in producing effects, the effects of pre-existing disease on susceptibility and dosimetry, cardiopulmonary mechanisms, and identification of the characteristics of PM (size, composition) associated with effects. Research to identify and evaluate plausible mechanisms will provide valuable information for future toxicological assessments and epidemiological studies. These efforts support three additional research areas recommended by the NAS ("dosimetry," "susceptible subpopulations," and "mechanisms of injury") and further support the area of "assessment of hazardous PM components."

In addition, the Agency will conduct research to characterize source emissions to clarify which sources are significant contributors to ambient fine particles. Studies will be conducted to develop particle size distribution data for a variety of sources, such as residual fuel oil and pulverized coal. Continued research will also be conducted to evaluate and, where necessary, improve or develop control technologies for a variety of industrial and commercial sources. The Agency will conduct PM chemistry, atmospheric modeling, emissions modeling and source apportionment research to support NAAQS implementation. Major epidemiologic, exposure, and toxicologic research studies supporting upcoming NAAQS reviews will be carried through uninterrupted, consistent with NAS plans on aerosols research needs.

In order to refine estimates of actual human exposure to PM, research will continue to concentrate on measurement, characterization, and modeling. Studies will characterize population exposures to ambient and indoor pollution. In 2000, new studies of the exposure of susceptible subpopulations (i.e., people with chronic obstructive pulmonary disease and with cardiovascular disease) will identify how much of the total exposure of these subpopulations to PM10 and PM2.5 comes from ambient air, either outdoor or indoor.

FY 2000 Change from FY 1999 Enacted

Ozone

EPM

- (-$6,500,000) Funding to support the National Alternative Fuels Training Center, National Center for Vehicle Emissions, Southwest Center for Environmental Research and Policy, Southern Appalachian Mountain Initiative, and the Northeast States for Coordinated Air Use Management has been eliminated.

S&T

- (+$706,000) The increased resources will support the implementation of the Tier II standards according to the requirements under subsection 202(I) of the Clean Air Act which determined the need for further reductions in emissions for LDVs and LDTs. EPA will complete heavy-duty gasoline standards and will make a regulatory determination on Tier II LDV and LDT standards which will be effective not earlier than the 2004 model year.

- (-$1,250,000) Funding to support the California Regional PM_{10} and $PM_{2.5}$ Air Quality Study, a Congressional earmark, has been eliminated.

Research

- (+$1,010,800 and +7.8 workyears) The Agency requires increased resources (resulting from a redirection from the One Atmosphere Research Program) to prepare external review draft of revised Ozone AQCD for CASAC review and to develop the Carbon Monoxide AQCD, to meet schedule set by EPA Administrator to comply with non-discretionary Congressionally-mandated review/revision of criteria and NAAQS for ozone and carbon monoxide.

- (-$9,677,200 and -36.2 workyears) Given the need to address the National Academy of Sciences (NAS) recommendations for an expanded Particulate Matter Research Program, resources will be redirected to support particulate matter research. As a result, the Agency will not continue to provide resources to a number of ozone programs. These include the

following: 1. Delivery of an extensively improved air quality model (Models-3/CMAQ-Ozone) for projecting the benefits of ozone precursor controls, staff will be redirected to the development, testing, and evaluation of a particulate matter/aerosols component of Models-3. 2. Research conducted to develop and refine emission models and methodologies, ecosystem-related air quality research, and ozone-specific health research will be terminated. 3. Tropospheric ozone atmospheric chemistry and modeling efforts which have been devoted to the development of ambient air measurement techniques and Observational Based Methods will be eliminated. Remaining funds will support the NARSTO efforts.

- (-$4,680,000) Funding to support the following 1999 Congressional earmarks will not be continued in 2000: the University of California/Riverside CE-CERT program and the Southern Oxidants Study.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Particulate Matter/Visibility

EPM

- (-$500,000) EPA will reduce funding for the OTC NO_x Budget Trading Program reflecting a shift from design and development of the program to its operation. EPA will continue to partner with the 12 states of the OTC by operating the OTC NO_x Budget Trading Program, i.e., track emissions, maintain allowance trading accounts, record allowance transfers and conduct annual compliance certification for the 1,000 sources in the Ozone Transport Region.

- (+$3,400,000) EPA will increase funding for developing $PM_{2.5}$ emission factors that states, tribes, and local agencies will need to develop and implement control strategies and for sources to write permits under the revised $PM_{2.5}$ NAAQS.

- (+$3,400,000) EPA will increase funding for developing guidance, models, outreach activities and analyze monitoring data and emission inventories to assist states in attaining the new NAAQS for particulate matter

- (-$8,900,000) Funding is reduced for two visibility-related programs: a study of the air pollution problems in the Big Bend National Park and regional approaches to haze. We will continue to work on regional approaches for defining reasonable progress for improving visibility.

- (+$2,100,000) Total payroll costs for this objective will increase by $2,100,000 to reflect increased workforce.

S&T

- (-$10,000,000) EPA will reduce funding for characterizing the composition of $PM_{2.5}$ particles using chemical speciation studies as many of the sites will be established. Funding will continue for operations and maintenance and analyses.

- (-$1,300,000) The Agency will reduce resources in the area of emissions characterization for mobile sources modeling because most modeling data analysis and model programming will be done in-house.. EPA is under a statutory requirement to review and update emission factors periodically. Data on these sources is currently very limited, yet these sources are known to be having a growing contribution to overall air pollution.

Research

- (+$9,595,100, +65.3 workyears) Increased resources in FY 2000 reflect the Agency's continuing commitment to address the recommendations by NAS for PM research and support the five university-based research centers focused on PM research. Additional PM research will produce a better understanding of the causal agents of PM health effects and identify susceptible populations, enabling more focused risk management approaches for reducing PM-related health risks. This also includes new funding in FY2000 to conduct PM chemistry, atmospheric modeling, emissions modeling and source apportionment research to support NAAQS implementation. The additional funding will aid in an effort to ensure the PM speciation sites (initially designed to support implementation) are sufficient to meet health and exposure research needs.

- (+$270,000, + 5.0 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These limited term appointments will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (-$3,656,300) Funding to support the following 1999 Congressional earmarks will not be continued in 2000: the Environmental Lung Center of the National Jewish Center and the Lovelace Respiratory Institute.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

All STAG

- (+$133,300,000) Clean Air Partnership Fund. The Fund will provide an opportunity for cities, states, and tribes to partner with the private sector, Federal government and each other to provide healthy clean air to local citizens. The fund will demonstrate smart multi-pollutant strategies that reduce greenhouse gases, air toxics, soot, and smog to protect our climate and our health.

  The Clean Air Partnership Fund will: be a catalyst for innovative local, state, private partnerships for air pollution reductions; demonstrate locally managed, self-supporting programs that achieve early integrated reductions in soot, smog, air toxics, and greenhouse gases; be used to capitalize local revolving funds and other financial mechanisms that leverage the original federal investment and result in greater resources for air pollution reduction; and, stimulate technology innovation.

  The Clean Air Partnership will fund more optimal, multi-pollutant control strategies. Currently, businesses and municipalities often invest in short-term, single-pollutant control approaches. The Partnership will encourage many industries, such as electric utilities and the transportation sector, to pursue comprehensive criteria pollutant reductions while improving energy and operation efficiencies, thereby also reducing greenhouse gas emissions. The Clean Air Fund will provide these needed resources through mechanisms that promise significant leveraging of non-Federal resources. It is expected that the Fund will support the development of local revolving funds which will provide low-interest loans, matching funds, public-private partnerships, and other capitalization mechanisms.

- (-$8,200,000) In 2000, EPA will reduce Section 103 STAG funding for the nationwide $PM_{2.5}$ monitoring network. Through 1998 and 1999 funding, states and local agencies will be able to purchase and deploy $PM_{2.5}$ monitors for their individual networks. The 2000 STAG funds will provide state and local agencies with sufficient funds to operate and maintain their networks and augment selected sites with meteorological equipment and continuous $PM_{2.5}$ monitors needed to characterize the $PM_{2.5}$ problem.

- (-$3,500,000) Funding is decreased for a Congressional earmark for section 103 and 105 air quality grants.

- (+$11,200,000) Section 105 funding is increased to build and maintain state and local capacity to carry out Federal requirements for ozone, $PM_{2.5}$, and regional haze. In 2000, activities to be funded include: preparing emission inventories and evaluating control strategies for particulate matter; implementing the SIPs updated in response to the NO_x SIP call. The increase in grant dollars for this objective includes funds to implement section 6102 of the Transportation Equity Act for the 21st Century.

Annual Performance Goals and Performance Measures

Achieve one-hour ozone NAAQS

In 2000 EPA will certify that 5 of the estimated 30 remaining nonattainment areas have achieved the one-hour National Ambient Air Quality Standards (NAAQS) for ozone.

In 1999 8 additional areas currently classified as nonattainment will have the 1-hour ozone standard revoked because they meet the old standard.

Performance Measures	FY 1999	FY 2000
Areas Designated for the 8-hour Ozone Standard		100 Percent
Reductions in National Highway Vehicle VOC Emissions		1,406 Tons
Reductions in National Highway NOx Emissions		926,000 Tons
Reductions in National Non-road Mobile Source VOC Emissions		343,000 Tons
Reductions in National Non-road Mobile Source NOx Emissions		133,000 Tons
Areas to Have The One Hour Ozone Standard Revoked		5 Areas
Publish Notice Revoking 1-Hour Standard	8 Areas	
Consumer Product Rules	1 Rules	
National Guidance on Ozone SIP	1 Issued	
States submit designations of areas for attainment of the ozone standard	50 States	

Baseline: As a result of the Clean Air Act Amendments of 1990, 101 areas were designated non-attainment for the 1-hour ozone standard. In 1996, as indicated in the most recent air quality trends report, 59 areas are in non-attainment. The trends data are updated each year with a one-year lag time (i.e. the 2000 information will be available in 2002). Currrently, 38 areas are still in non-attainment. The 1995 baseline for national non-road mobile source emissions was 2,433,000 tons for VOCs and 4,675,000 tons

for NOx. Mobile source data are validated by using speciated test data from the mobile source emission factor program, along with peer-reviewed models which estimate national tons for the relevant year of interest.

PM2.5 NAAQS

In 2000 Maintain progress and continue to implement measures to reduce particulate emissions, and transition to and implement the PM2.5 NAAQS.

In 1999 Deploy PM-2.5 ambient monitors including: mass, continuous, speciation, and visibility sites resulting in a total of 1500 monitoring sites.

Performance Measures	**FY 1999**	**FY 2000**
Areas Designated for PM10 Standard		100 Percent
Reductions in National Highway Vehicle PM10 Emissions		55,000 Tons
Reductions in National Highway Vehicle PM2.5 Emissions		52,000 Tons
National Guidance on PM-2.5 SIP and Attainment Demonstration Requirements	1 Issued	
Provide Draft Documents to CASAC for PM NAAQS Review	30-SEP-1999	

Baseline: Performance Baseline: As a result of the Clean Air Act amendments of 1990, 84 areas were designated as non-attainment of the PM10 standard. In 1996, as indicated in the most recent air quality trends report, 79 areas were in non-attainment. Currently, 77 areas are still in non-attainment. The trends data are updated each year with a one-year lag time (i.e., the 2000 information will be available in 2002).

Research

Ozone Measurement Research

In 2000 In FY00, develop tropospheric ozone precursor measurement methods, emissions based air quality models, observations based modeling methods, and source emissions information to guide State Implementation Plan (SIP) development under the current ozone NAAQS

In 2002 Develop Tropospheric Ozone Precursor Measurements, and observational Modeling to Guide Cost-Effective Control Options

In 2001 Develop tropospheric ozone precursor measurements, modeling, source emissions, and control information to guide cost effective risk management options

Performance Measures	**FY 1999**	**FY 2000**
Recommend method for measuring NOx (nitrogen oxides and their reaction products).	09/30/2002	
Recommend method for measuring NOx (nitrogen oxides and thier products)		09/30/2000

Complete development and begin evaluation of the "Morphecule" approach for including complex chemical reaction mechanisms in photochemical pollution models like Models-3/CMAQ to be used in SIP development.		1 approach
Complete evaluation of Models-3/CMAQ against field data to demonstrate reliability in ozone NAAQS attainment planning		09/30/2000
In 1999 report on quantifying the uncertainty in emissions, chemical parameters and meteorological conditions for trajectory model.	30-SEP-1999	

Baseline: Performance Baseline: A need exists to develop models, methods, and information to guide State Implementation Plan development under the current ozone NAAQS. Development of "formal" baseline information for EPA research is currently underway.

Ozone Research

In 2000 In FY00, provide new information on the atmospheric concentrations, human exposure, and health and environmental effects of tropospheric ozone and incorporate it and other peer-reviewed research findings in an External Review Draft of the Ozone AQCD for NAAQS review; complete the final Carbon Monoxide AQCD.

In 2000 Evaluate Models-3/Community Multi-Scale Air Quality (CMAC) against Field Data to Demonstrate Reliability in Ozone NAAQS Attainment Planning

Performance Measures	**FY 1999**	**FY 2000**
Final Carbon Monoxide Air Quality Criteria Document.		1 document
External Review Draft of the Ozone Air Quality Criteria Document will be completed and released for public comment and review by the Clean Air Scientific Advisory Committee (CASAC).		1 document

Baseline: Performance Baseline: A clear understanding of tropospheric ozone is needed in order to complete the Ozone AQCD External Review Draft. AQCDs are required to meet NAAQS review cycles. Development of "formal" baseline informtion for EPA research is currently underway.

PM Effects Research

In 2000 In FY00, provide new information on the atmospheric concentrations, human exposure, and health effects of particulate matter (PM), including PM2.5, and incorporate it and other peer-reviewed research findings in the second External Review Draft of the PM AQCD for NAAQS review.

In 1999 Identify and evaluate at least two plausible biological mechanisms by which PM causes death and disease in humans

In 2000 Describe PM Health Effects in Exposed Humans

Performance Measures	FY 1999	FY 2000
Reports (1) describing research designed to test a hypothesis about mechanisms of PM-induced toxicity; 2) charcterize. factors affecting PM dosimetry in humans; 3) ID PM characteristics (composition)	30-SEP-1999	
Hold CASAC review of draft PM Air Quality Criteria Document.		09/30/2000
Complete longitudinal panel study data collection & preliminary report on exposure of susceptible subpopulations to total PM & co-occurring gases of ambient origin and identify key exposure parameters...		1 report
Data generated from PM monitoring studies in Phoenix, Fresno, and Baltimore will be used to reduce uncertainties on atmospheric PM concentrations in support of Draft PM Air Quality Criteria Document.		09/30/2000
Reports on (1) role of host susceptibility factors, such as compromised cardiopulmonary systems, on responses to PM exposures and (2) data on regional deposited dose of inhaled ultrafine particles.		09/30/2000
Report on results from Baltimore study evaluating the cardio-vascular and immunological responses of elderly individuals to PM.		1 report
Delivery of computer model to assess the effect of spatial variability on human exposure as manifested by health.	30-SEP-1999	
Reports on (1) long-term exposures to PM and effects on mortality and lung function.	30-SEP-1999	

Baseline: A clear understanding of PM is needed in order to complete the PM AQCD External Review Draft. The current baseline is the 1996 PM Criteria Document. By 2000, EPA's revised, draft Criteria Document will reflect scientific advances, in line with recommendations of the National Academy of Sciences, and reduce uncertainties concerning the scientific basis for the PM standard.

PM Measurement Research

In 2000 In FY00, develop particulate matter (PM) measurements, methods, emissions-based air quality models, and source emissions and control information to guide State Implementation Plan (SIP) development under the current PM NAAQS.

In 1999 By 1999, and beyond produce data, models, and technical information which can be used by Federal, State and Local air pollution regulatory officials to refine the accuracy (size distribution and chemical composition) of directly emitted fine particulate and fine paticulate (particulate less than 2.5

In 2000	Preliminary Evaluation of Models-3/Community Multi-Scale Air Quality (CMAQ) for PM to Demonstrate Realiability in PM NAAQS Attainment Planning
In 2001	Provide measurements, modeling, source emissions, and control information for PM by species and size to guide risk assessment and PM risk management

Performance Measures	FY 1999	FY 2000
Produce data on the size distribution of particles emitted from residential wood combustion (fireplac	30-SEP-1999	
Produce improved receptor models (CMB8 and UNMIX) for measurement of source category emissions impacts on air quality.		2 models
Complete a preliminary evaluation of Models-3/Community Multi-Scale Air Quality (CMAQ) for PM, demonstrating its potential reliability for PM NAAQS attainment planning		09/30/2000
In 1999 establish five airborne particulate matter (PM) research centers to conduct integrated studies on PM exposure, dosimetry and extrapolation modeling, toxicology and epidemiology.	30-SEP-1999	

Baseline: Performance Baseline: A need exists to develop models, methods, and information to guide SIP development under the current PM NAAQS. Development of "formal" baseline info for EPA research is currently underway.

Verification and Validation of Performance Measures

Data sources:

- EPA Aerometric and Information Retrieval System (AIRS) Air Quality Subsystem;
- EPA National Emission Trends Database;
- EPA Findings and Required Elements Data System (FREDS);
- IMPROVE database.

Data from the Aerometric Information and Retrieval System (AIRS) Air Quality Subsystem are used to determine if nonattainment areas have their requisite three years of clean air data needed for redesignation. The National Emission Trends database will be used to determine if the states have reduced their VOC, $PM_{2.5}$, and NO_x emissions. The FREDS system tracks the progress of states and Regions in reviewing and approving the required elements of the state implementation plans also needed for redesignation to attainment. The IMPROVE database provides data on visibility improvement from various sites nationally.

The EPA's highway vehicle emission factor model, MOBILE, provides average in-use fleet emission factors for VOC, CO and NO_x for each category of vehicle under various conditions affecting in-use emission levels (e.g., ambient temperatures, average traffic speeds, gasoline volatility) as specified by the model user. It is used by EPA in evaluating control strategies for highway mobile

sources, by states and other local and regional planning agencies in the development of emission inventories and control strategies for SIPs under the Clean Air Act. The model has been periodically updated to reflect the collection and analysis of additional emission factor testing results over the years, as well as changes in vehicle, engine, and emission control system technologies, changes in applicable regulations and emission standards and test procedures, and improved understanding of in-use emission levels and the factors that influence them.

Program audits assess the effectiveness of I/M programs by evaluating their operations, ability to identify pollutants, and success in ensuring the repair of vehicles. EPA also tracks the number of states implementing the I/M programs and completion of the National Highway System Designation Act (NHSDA) evaluations. NHADA amended the Clean Air Act requirements for I/M programs.

For the RFG program, the reporting system collects data on quality for RFG and conventional gasoline to determine fuel program benefits. The system electronically processes approximately 100,000 fuel quality reports. The electronic data interchange was recognized in the President's report on Reinventing Government as a dramatic new industry reporting initiative.

For modeling, the verification system is the MOBILE highway vehicle emission factors model. The Agency will continue utilizing the testing results, number of labels and certificates issued for the compliance programs and testing programs.

QA/QC Procedures

The QA/QC of the national air monitoring program has several major components: the Data Quality Objective (DQO) process, reference and equivalent methods program, the precision and accuracy of the collected data, EPA's National Performance Audit Program (NPAP), systems audits, and network reviews. To ensure quality data, the State and Local Air Monitoring Sites (SLAMS) are required to meet the following: 1) each site must meet network design and siting criteria; 2) each site must provide adequate QA assessment, control and corrective action functions according to minimum program requirements; 3) all sampling methods and equipment must meet EPA reference or equivalent requirements; 4) acceptable data validation and record keeping procedures must be followed; and 5) data from the SLAMS must be summarized and reported annually to EPA.

There are additional quality assurance/quality control measures specified for the collection of particulate data, such as Federal Reference Method Performance Evaluation Program, collocated samples, and field and laboratory blanks. Finally, there are systems audits that regularly review the overall air quality data collection activity for any needed changes or corrections.

Plans to Improve Data

The emissions data are difficult to quality assure because of the varying methods of determining the total emissions in a given area. In the future, EPA will post all state, tribal, and local agency emissions data in a compiled data base so that all stakeholders can provide a much more

intense review of the inventory. Also, the Emissions Inventory Improvement Project (EIIP), which has provided consistent methods of estimating emissions data and has developed consistent quality assurance methods for use by the states, will substantially improve state emissions data. Emissions data for the EIIP are subject to enhanced quality assurance before they are entered into an air quality model. In addition, preliminary air quality model results identify specific weaknesses in the emissions inputs.

The IMPROVE network will be enhanced by the upgrade of 30 existing IMPROVE samplers and the establishment of 78 new sites in 1998 and 1999. In 2000, new aerosol measurements will be collected from the upgraded IMPROVE samplers, which will facilitate more frequent data collection while maintaining consistency with the historical measurements. The new sites established in 1998 and 1999 will provide additional information on class 1 areas previously not covered in the IMPROVE monitoring network.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

The Agency continues to coordinate with other Agencies as appropriate in the formulation and implementation of its regulatory mission. For example, EPA has worked closely with the Department of Agriculture in developing its agricultural burning policy. EPA has also worked with the Department of the Interior, National Park Service, in developing its regional haze program and deploying the IMPROVE visibility monitoring network.

Research

EPA's tropospheric ozone research program is coordinated with the research efforts of others. As such, a significant portion of the tropospheric ozone research is coordinated through the efforts of NARSTO. The remainder of the EPA tropospheric ozone research program focuses on needs associated with the review of the tropospheric ozone NAAQS, which is also not being met my others.

The science and policy communities have agreed that solving the PM issue will require substantial, coordinated research efforts. EPA is taking steps to achieve public/private coordination and cooperation by (1) initiating health and exposure research coordination among Federal agencies

and with public/private research organizations; (2) completing an EPA Research Strategy for PM; and (3) participating as a sponsoring member of NARSTO as it realigns its mission and research agenda to include PM atmospheric sciences research. An inventory of PM research in the public and private sectors has been developed.

The 1998 Appropriations identified an important role for NAS in developing and monitoring implementation of a comprehensive, prioritized, near- and long-term PM research plan, working in close consultation with representatives from many public and private sector organizations. The PM research plan is intended to be the principal guideline for the Agency's PM research program for the next several years. The plan also affects other agencies, with Congress expecting the EPA and other Federal agencies to review their ongoing PM research activities and, where appropriate, re-focus activities so as to be consistent with the NAS plan.

EPA is the world leader in several areas of PM research (e.g., causal mechanisms). Opportunities exist to complement EPA capabilities through programs targeted toward the academic community, such as in epidemiology research to evaluate the consequences of long-term exposure to ambient PM. The Department of Health and Human Services supported much of the current epidemiological research on links between long-term exposure to ambient PM and life shortening and other long-term health effects, thus the capacity to conduct large-scale epidemiological research on PM is generally found outside EPA. EPA is entering into an Interagency Agreement with the National Institute of Allergy and Infectious Diseases to study, for the next several years, the role of PM and copollutants on asthma in children.

Statutory Authorities

Clean Air Act (CAA) (42 U.S.C. 7401-7671q)

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Clean Air

Objective # 2: Reduce Emissions of Air Toxics

By 2010, reduce air toxic emissions by 75 percent from 1993 levels to significantly reduce the risk to Americans of cancer and other serious adverse health effects caused by airborne toxics.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Emissions of Air Toxics	**$97,546.9**	**$90,700.3**	**$175,485.3**	**$84,785.0**
Environmental Program & Management	$52,651.7	$46,904.8	$53,421.4	$6,516.6
Science & Technology	$22,800.7	$21,551.4	$24,518.0	$2,966.6
State and Tribal Assistance Grants	$22,094.5	$22,244.1	$97,545.9	$75,301.8
Total Workyears:	395.1	394.2	399.4	5.2

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Air,State,Local and Tribal Assistance Grants: Other Air Grants	$22,094.5	$22,244.0	$30,845.9
Federal Air Toxics Standards	$26,862.9	$17,620.3	$14,902.9
Mobile Sources	$1,768.0	$1,736.3	$3,940.0
Air Toxics Research	$21,014.9	$19,681.7	$20,561.6
EMPACT	$204.8	$171.7	$212.9
Clean Air Partnership Fund	$0.0	$0.0	$66,700.0

FY 2000 Request

Toxic air pollutants pose significant risks to public health by causing cancer and other serious health problems such as reproductive disorders, birth defects, and damage to the nervous system. Available data from U.S. cities indicate predicted increased lifetime cancer risks from air toxics may be on the order of 1 in 10,000. People who live near certain major industrial plants may face even higher cancer risks from air toxics.

Titles II and III of the Clean Air Act Amendments of 1990 require EPA to regulate air toxics. Under Title II, EPA must develop standards for air toxics emitted from cars, trucks and fuels. Air pollution from these mobile sources accounts for close to one third of the nationwide emissions of air toxics. Title III lists 188 hazardous air pollutants (HAPs) and requires EPA to develop and ensure implementation of technology-based standards for major stationary sources of these pollutants. Eight years after promulgating these Maximum Achievable Control Technology (MACT) standards, EPA must evaluate the residual risk and revise the standards if needed to provide an ample margin of safety to protect public health or protect the environment from adverse effects.

Title III also requires EPA to develop a national urban air toxics strategy, and to identify and control at least 30 of the most hazardous air pollutants found in urban areas. In addition, the Act requires that EPA study the effect of air toxic emissions on ecosystems, particularly on important water bodies. Finally, Title III mandates control of air toxics from combustion sources with emphasis on mercury and analysis of emissions from steam powered utility plants.

To carry out Clean Air Act requirements, EPA developed an air toxics program comprised of four key areas: (1) characterization of air toxics from stationary and mobile sources; (2) development of Federal technology-based and risk-based standards; (3) assistance to states, tribes, and local agencies to implement air toxics programs; and (4) research to support the air toxics program. In continuing to carry out this program, EPA is now beginning the transition from the first phase of the program -- developing technology based standards -- to the second phase, which will use a risk-based, multi-media approach that focuses on urban areas and large water bodies to address the risk that remains after the first-phase controls are in place. In this second phase, the Agency will:

- Extensively monitor and characterize the air toxics problem and identify the sources of the most toxic chemicals that are transported through the air and that affect cumulative exposure in urban areas and major water bodies.

- Look cross-media at air discharges from water and waste sources and at air deposition impacts on water and soil, as well as releases from traditional air toxics sources.

- Implement a strategy that will obtain the greatest cumulative reduction in health risks due to air toxics, regardless of media, targeting urban areas and major water bodies where exposure to air toxics is the greatest.

EPA proposes to use existing regulatory authorities (e.g., the Clean Air Act, the Clean Water Act, and the Resource Conservation and Recovery Act) or negotiated agreements to address sources identified through risk assessment. By 2000, the Agency will produce recommendations that will maximize reduction in risk to the public. EPA also will inform urban communities through published reports and other means (e.g., the Internet) about the toxics risk posed to them.

Air Toxics Characterization

In the ongoing first phase of the program, EPA's focus remains primarily on reducing air toxics emissions through Federal technology-based standards, as required by the Clean Air Act. For the second, risk-based phase, EPA will use an approach that more directly identifies and addresses the risk remaining after first-phase controls are in place. EPA currently lacks the information and tools to fully characterize the air toxics problem and measure progress in improving public health and reducing environmental impacts. For 2000, EPA will invest in improved and innovative monitoring and modeling, emissions inventories, environmental indicators, and risk assessment tools. This investment will allow the Agency to better characterize the risks from air toxics and to establish a baseline for measuring risk in carrying out the Government Performance and Results Act (GPRA).

EPA will build on existing state, tribal, and local efforts to create a national monitoring and inventory program that better characterizes public exposures to hazardous air pollution. Monitoring for some air toxics is currently underway, but the monitors measure concentrations only for a limited number of toxic compounds and only at limited locations. In addition, there is incomplete information on the full range of health effects associated with air toxics. Relatively little is known about the range of health effects, and the scope and level of concentrations of air toxics in the atmosphere.

EPA will expand the air toxics monitoring program in urban areas and around major water bodies in order to better characterize air toxics (building on efforts begun in 1999); establish a centralized database on toxic compounds in urban areas including air, water, and solid waste; expand the toxics emission inventories; refine deposition models to estimate the amount of air toxics deposited in various media (i.e., water, food, etc); develop the capability to estimate how various control strategies alter the deposition patterns; and refine ongoing work with urban risk models to better estimate the exposure to air toxics through various media, and the risk to the public resulting from this exposure.

EPA also plans to expand upon the Cumulative Exposure Project (CEP), as part of its efforts to better characterize the air toxics problem. The CEP estimated 1990 outdoor concentrations of toxic air pollutants across the entire country for all source categories (e.g., cars, large stationary sources, and smaller sources). EPA will refine the CEP model by using a more updated and detailed emission inventory, verifying the model with expanded ambient monitoring, and integrating updated exposure models to assess the public health effects. This refined CEP model, CEP-II, as well as updated exposure models will provide a basis for evaluating the effectiveness of alternative control options and measuring progress for meeting an air toxics risk-based GPRA goal.

By the end of 2000, EPA will make progress in determining links between release and exposure information from the various media programs to determine multi-media toxics exposure and use this information to develop cross-media strategies to more effectively reduce urban exposures to toxic emissions. Offices will begin to identify patterns in exposure to toxics to generate proposals as to the kind of coordinated approach that will most efficiently reduce exposure to air toxics. EPA will begin evaluating how to link available health information with exposure to estimate risk in urban areas.

In 2000, the Office of Air and Radiation (OAR) will work with the Office of Solid Waste (OSW) to: (1) further evaluate the information and analysis from OSW's study of the potential for an "air toxics" characteristic that would make certain wastes "hazardous wastes" based on concerns about air emissions; and, (2) assess the potential impacts of broadly or selectively removing the current "waste water treatment unit" exemption that shields many waste water tanks from existing RCRA requirements that would otherwise reduce air emissions.

Air Toxics Rules and Standards Development

In carrying out Title II of the Clean Air Act, EPA will continue to assess the need for and the feasibility of controlling emissions of unregulated toxic air pollutants associated with motor vehicles and fuels and evaluate industry health testing results and protocols to increase information on public health risks. The Fuels and Fuel Additives Registration (FFAR) program will provide for the review and screening of potential toxic substances prior to introduction into motor vehicle fuel supplies. The FFAR registration program will continue involving approximately 100 fuel manufacturers and 1,300 additive manufacturers, 1,000 gasoline and diesel fuels registrations and 6,000 additive registrations. Approximately 10,000 registration requests will be submitted.

Under Title III of the Clean Air Act, EPA has completed all of the two-year and four-year MACT standards. Through December 1998, EPA has proposed 21 seven-year MACT standards (covering 31 source categories) and promulgated six standards (covering six source categories). In addition, we have proposed one 10-year standard. In 1999, EPA will examine the entire slate of 10-year MACT standards and reevaluate the schedule for each standard based on its effectiveness in reducing toxics exposure. EPA also will review the process for setting residual risk standards based on the Report to Congress. The current approach for setting those standards involves extensive analysis of the sources for which MACT standards have been set. EPA will evaluate alternative approaches that would require sources to reduce emissions such that risk reduction targets are met. EPA also is developing a strategy for identifying and dealing with residual risk through studies related to mercury emissions from electric utilities.

In 2000, EPA will focus its efforts on those 10-year MACT standards that will provide significant risk reductions. Where data are available to support an assessment, EPA will include residual risk as part of initial MACT standards, resulting in a higher "floor" that could be applicable nationwide, for urban areas as a class, or for specific urban areas. In developing the priority 10-year MACT standards, EPA will continue to streamline the air toxics program by building on experience

from earlier standards and by providing greater flexibility for states that want to achieve the emission reductions, but in ways that are different from those proposed by EPA. EPA will continue reinvention approaches such as consolidated rules, partnerships with states in making presumptive MACT determinations, and the generic MACT approach where rulemakings for source categories with four or fewer major facilities would be developed as a broad-based rule.

Also as part of its reinvention efforts, the Agency will initiate as many as three MACT multi-media rules that address releases of toxics to air, water, and land and that consider pollution prevention approaches. To develop models for these analyses, EPA will bring together multiple ongoing efforts such as: (1) the Persistent Bioaccumulative Toxics (PBT) program to identify priority toxics; (2) the Cumulative Risk program to provide a multi-media modeling framework for setting priorities; (3) the Total Maximum Daily Load (TMDL) program in water to identify the targets for reduction of toxic loadings by media; and, (4) the Urban Initiative to provide a place-based approach for risk assessment and management.

Section 129 of the Clean Air Act requires the establishment of performance standards for four categories of waste incinerators. These categories are: municipal waste combustors, medical waste incinerators, industrial and commercial waste incinerators, and other solid waste incinerators. EPA will provide guidance for implementing the rules promulgated for municipal and medical waste incinerators. The rules for industrial and commercial and other waste incinerators are being developed. EPA will develop regulatory options for the various categories and subcategories of incinerators and develop a final package in 2000.

Air Toxics Implementation

EPA believes that Federal standards for controlling emissions of hazardous air pollutants can be most effectively implemented by states, tribes, and local agencies. EPA delegates its implementation authority and provides tools and guidance to ensure smooth and consistent implementation. EPA will publish guidance, provide support in issue resolution, and conduct outreach activities to help sources comply. EPA will use emissions testing and, where feasible, continuous emission monitoring or emission inventories to monitor compliance with MACT and other air toxics standards. EPA also will develop capabilities for greater community right-to-know access (e.g., using the Internet) to data that will show the level of toxic compounds in urban areas.

EPA will perform studies related to: (1) air toxic deposition into selected bodies of water; (2) air toxic emissions from electric utilities; (3) the urban air toxics problem; and, (4) municipal waste combustors. OAR will rely on research from the Office of Research and Development (ORD) in these areas, and will work cooperatively with the Office of Water (OW) in the Great Waters Atmospheric Acid Deposition Study. EPA will continue its work to assess and reduce threats posed by air toxic deposition to water bodies and to develop and implement progress to reduce risk in urban areas.

EPA will examine exposure of urban populations to toxic releases from all media and develop media-specific strategies to reduce emissions and exposures. The Agency will use existing program authorities with available source characterization information. For example, the air mobile sources program will propose a mobile source air toxics rule in late 1999 under section 202[l][2] of the Clean Air Act and will assess the authority for setting these technology standards to achieve the greatest cancer risk reduction in urban areas. EPA will evaluate progress on the fuel and fuel additives testing under section 211(b) of the Clean Air Act. EPA also will begin developing an approach to mesh each office's media information to develop a multimedia toxics exposure model, allowing comparisons of effectiveness of varying authorities.

Subsequent to the release of the updated Great Waters report in June 1997, EPA issued its determination that section 112 of the Clean Air Act provides adequate authority to regulate air pollutants to prevent adverse effects due to deposition in Great Waters. In 1999, the Agency will: continue multi-media modeling and deposition studies; facilitate state and Regional deposition reduction strategies; and will consider cross-media regulations to support state, local, and tribal actions to reduce air deposition. The results of these efforts will be described in the Third Great Waters report to Congress in 1999. In 2000, EPA will work with the Office of Water toward the development of multi-media regulatory approaches to reduce risks, including enhancing technical tools to assess cross-media transport of pollutants, and conducting analyses of areas at greatest risk of contamination related to atmospheric deposition of toxic pollutants.

In 1999, EPA will publish the Integrated Urban Air Toxics Strategy, which will identify the hazardous air pollutants that pose the greatest threat in urban areas and the area source categories that emit these pollutants. The strategy will assure that 90 percent of these urban area sources are subject to regulation. It will also contain a schedule of activities to ensure a substantial reduction in health risk in the urban areas, including a 75 percent reduction in cancer incidence, as well as activities to address mobile source emissions and to encourage state, local, and tribal programs to develop strategies for their communities. In 2000, EPA will begin to improve our national characterizations of risk from air toxics in urban areas and work closely with states, local, and tribal governments to develop or strengthen programs to reduce risk on a city-specific basis.

In addition to these studies being performed under the Clean Air Act, EPA will work to reduce the emissions and lower the risk associated with persistent bioaccumulative toxics (PBTs). The air program will work to achieve these reductions through regulatory and prevention-based measures. OAR will develop tools to evaluate the impact of PBTs and the impact of reductions in PBTs on human health and the environment. This effort will be coordinated across the Agency with the Office of Prevention, Pesticides, and Toxic Substances; OAR; OW; and ORD.

Research

The Air Toxics Research Program supports the objective of reducing emissions of air toxics by providing the effects and exposure information, as well as the source characterization and other data to quantify key pollutants and strategies for cost effective risk management. EPA's Air Toxics

Research Program defines the magnitude of the urban air toxics problem through effects and exposure research and determines the most cost-effective ways to manage the risks by the development of modeling tools and the evaluation of control options. The program characterizes and measures emissions from vehicles as well as from stationary sources.

The Clean Air Act requires substantial assessment of risks posed by air toxics in urban areas within the decade. However, data and methods to assess and manage non-cancer health risks of air toxics are limited. Uncertainties in exposure assessment and dose-response assessment often prevent adequate evaluation of risks, and may lead to either unnecessary controls if assumptions are overly conservative, or to inadequate protection of public health if assumptions are not protective enough. Moreover, states, tribes, and local communities need guidance on how to reduce emissions in a cost-effective manner. The array of scientific methods, models, and data currently developed are frequently difficult to use and interpret, particularly for communities faced with evaluating their specific situations.

In 2000, EPA's research will focus on these uncertainties by addressing health effects characterization, exposure assessment methods and models, risk reduction and mobile emission models. In addition, the Agency will begin an initiative in air toxics in order to reduce the cost of implementing air, water and solid waste programs by addressing urban pollution problems as a whole, looking across all media. For example, reducing air toxics emissions and deposition of mercury or PCBs over an urban watershed may be more cost-effective in reducing concentrations of these toxics in the food chain than controlling mercury in effluent discharges or undertaking contaminated soil clean-ups.

Researchers will continue to evaluate cancer and non-cancer health effects of air toxics exposures, concentrating on acute and recurrent acute exposures, impacts on sensitive subpopulations, and developing methods to assess effects from exposure to common urban air pollutant mixtures. The Agency also will continue to improve methods for extrapolating health data from animals to humans to improve our understanding of health effects and risk assessment methods. EPA's ongoing research on clinical and animal studies to determine the health effects of exposure to combinations of pollutants (e.g. particulate matter exposure simultaneously with ozone, volatile organic compounds simultaneously with particulate and ozone), will help risk assessors to better understand effects observed in epidemiological studies. The results from this research will be very helpful in providing an understanding of the mechanisms by which mixtures of priority air pollutants produce adverse health effects.

EPA will continue research vital to completing residual risks and urban toxics risk assessments as the country's air toxics program moves from a technology to a risk-based program. This research will develop and evaluate an urban scale air quality model that can be used for community-based human exposure assessment for some important air toxics, including mercury and semi-volatile organic compounds. It will also determine factors associated with micro-environmental exposures to air toxics (e.g., associated with traveling in an automobile) which are important to modeling and assessing personal scale exposures. In addition, researchers will characterize toxics

emissions from mobile source combustion of alternative fuels under both real-world and test chamber conditions.

Ongoing research will continue to develop and demonstrate new methods to assess risks from urban toxics. The goal is to take information developed in a research context and communicate the information more effectively to regional and local government risk assessors/managers through technology transfer centers. EPA risk assessors/managers will use the new risk assessment methods for chronic and acute non-cancer assessments. The new guidance will be used for cancer risk assessment to determine with greater certainty the risks associated with the hazardous air pollutants (HAPs) arising from area sources. EPA will continue to enhance the development of health effects assessments from chronic (life-time) and acute (short-term) exposures and cancer risk determinations for the urban toxics program. In addition, the Agency will staff the Air Risk Information Support Center (Air RISC) Hotline to communicate risk assessment methodologies and respond to air pollution questions from regional, state, and community air pollution control offices. Air RISC staff also will provide consultation to program, state, regional, and community offices on urban toxics. These efforts will enable EPA to more effectively manage program coordination and meet program goals of supporting and transferring information to communities.

Integrated control and pollution prevention approaches will continue to be developed for source categories (e.g. utilities, chemical manufacturing facilities, various industrial production processes, waste combustors and industrial boilers) which are having the greatest impact on urban air quality. Examples of technologies include new coating systems which reduce toxic air emissions and at the same time reduce ozone precursors. The ultimate goal of this research is to ensure future urban air pollution emission reduction provide maximum risk reduction while minimizing compliance costs and multi-media impacts. Outputs from this research will support EPA efforts to develop strategies which reduce the risks posed by the multitude of HAPs present in many urban areas across the U.S.

To further meet the objective, EPA will in 2000 develop an air quality model to guide cost effective risk management options. As local and state air quality officials seek to understand and reduce exposures to air toxics, they need models that link source emissions to air quality and exposure. In 2000, EPA will begin evaluating a recently developed urban scale Models-3/Toxics Model for Community-Based Human Exposure Assessment for air toxics, to be used for community-based human exposure assessment for air toxics. EPA will also initiate research under a peer reviewed plan to develop a first-generation human exposure model for air toxics. Understanding the transformation and fate of air toxics is crucial to assess the multi-media health and ecological impacts of air toxics, to assess the health impacts of individual compounds down-wind once emitted, and to be sure air quality and exposure models contain the correct atmospheric chemistry for all important classes of HAPs. In 2000, EPA will develop a chemical process mechanism for several important classes of air toxics suitable for incorporation into Models-3.

FY 2000 Change from FY 1999 Enacted

EPA's investments for 2000 will allow improved assessments of air toxics sources, exposure, and risks and provide additional health effects information. The investments will enhance the Agency's ability to communicate health and environmental risks to communities and to explain how EPA, state, tribal, and local programs reduce that risk. In addition, the proposal will increase the Agency's understanding of the causes of health and environmental problems from air toxics in urban areas, allowing the Agency to develop more targeted and cost-effective strategies for addressing the problems. Uncertainty in assessing the air toxics will be reduced by understanding the sources and the direct and indirect pathways of exposure from air toxics through all media.

EPM

- (+6,600,000) The Agency proposes to retarget resources from setting MACT and residual risk standards to better characterizing the total environmental toxic risk, particularly in urban areas. The goal of this shift is to provide better information to communities on how individual factors in urban areas cumulatively affect public health and to make cross-media decisions to target the worst factors first. Thus, both nationally and locally, we would be moving toward programs and policies that are focused primarily on human and ecological risk reductions, as opposed to solely emission reductions. To do this, the Agency will propose more investment in air toxics characterization tools and methods. Funding is being reprogrammed from air toxics rule development to efforts to better characterize the urban air toxics problem. This includes designing and deploying an expanded monitoring network, enhancing and running risk models, compiling and analyzing emission inventories, and developing national and urban risk assessments and profiles. As part of this strategy, EPA has decreased resources for developing ten-year MACT and residual risk standards, however, the Agency will also use many existing statutory authorities to develop MACT standards in a manner that addresses cumulative risk in urban areas. The Agency will examine the MACT standards scheduled for promulgation in November 2000 and revise the schedule based on effectiveness of standards in reducing toxics risk. EPA will assess alternative approaches that will require sources to reduce emissions such that national and urban risk reduction targets are met by issuing both MACT and air/water cluster technology-based standards. The Agency will use a multi-media, multi-pollutant approach to reducing risk. The Agency believes such an approach will produce greater, less costly risk reductions than would otherwise occur from following a media-by-media, pollutant-by-pollutant statutory agenda for air toxics. EPA will also increase resources for developing tools and guidance for the smooth and effective implementation of the 2, 4, and 7-year MACT standards. These tools will include published guidance and support in resolving rule implementation issues. EPA will also expand outreach activities to help sources comply.

- (-$1,000,000) Funding is being reprogrammed from air toxics rule development to efforts to better characterize the urban air toxics problem.

- (-$1,000,000) Funding is reduced for the NAS study on mercury which is scheduled to be completed in mid-2000.

- (+$1,400,000) Total payroll costs for this objective will increase by $1,400,000 to reflect increased workforce costs.

S&T

- (+$2,100,000) The mobile sources work will be in the areas of exposure and risk assessment. The exposure work will consist of chemical characterization of vehicle emissions and measuring "real world" emissions from in-use vehicles. Data collection, risk assessments, and health-related regulatory decisions for fuels and fuel additives will support the control of hazardous air pollutants from motor vehicles.

Research

- (+$2,853,600) The Agency is expanding its efforts in the Air Toxics Research Program to reduce the cost of implementing programs by addressing urban pollution problems as a whole looking across all media. These efforts will expand research to develop health effects information and dose-response relationships for hazardous pollutants. In addition, exposure assessment methods, models and risk assessment methods, emissions information, and risk reduction options for dispersed sources of toxics in urban environments will be developed.

- (+$54,000 and 1 workyear) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These limited term appointments will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (-$3,168,700) Funding to support the following 1999 Congressional earmarks will not be continued in 2000: the Mickey Leland National Urban Air Toxics Research Center and the Center for Air Toxics Metals.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

STAG

- (+$66,700,000) Clean Air Partnership Fund. The Fund will provide an opportunity for cities, states and tribes to partner with the private sector, federal government and each other to provide healthy clean air to local citizens. The fund will demonstrate smart multi-pollutant strategies that reduce greenhouse gases, air toxics, soot and smog to protect our climate and our health.

  The Clean Air Partnership Fund will: be a catalyst for innovative local, state, private partnerships for air pollution reductions; demonstrate locally managed, self-supporting programs that achieve early integrated reductions in soot, smog, air toxics and greenhouse gases; be used to capitalize local revolving funds and other financial mechanisms that leverage the original Federal investment and result in greater resources for air pollution reduction; and, stimulate technology innovation.

  The Clean Air Partnership will fund more optimal, multi-pollutant control strategies. Currently, businesses and municipalities often invest in short-term, single-pollutant control approaches. The Partnership will encourage many industries, such as electric utilities and the transportation sector, to pursue comprehensive criteria and toxic pollutant reductions while improving energy and operation efficiencies, thereby also reducing greenhouse gas emissions. The Clean Air Fund will provide these needed resources through mechanisms that promise significant leveraging of non-Federal resources. EPA expects that the Fund will support the development of local revolving funds which will provide low-interest loan programs, matching funds, public-private partnerships, and other capitalization mechanisms.

- (+$10,300,000) EPA will increase the section 105 STAG funds available to state and local agencies for characterizing air toxics problems. The characterization will include additional ambient monitoring of air toxics in urban areas. The increase in grant dollars for air toxics includes funds to implement section 6102 of the Transportation Equity Act for the 21st Century.

- (-$1,700,000) Funding is discontinued for a Congressional earmark for section 103 and 105 air quality grants.

Annual Performance Goals and Performance Measures

Reduce Air Toxics Emissions

In 2000	Air toxics emissions nationwide from stationary and mobile sources combined will be reduced by 5% from 1999 (for a cumulative reduction of 30% from the 1993 level of 1.3 million tons.
In 1999	Reduce air toxic emissions by 12% in FY 1999, resulting in a cumulative reduction of 25% from 1993 levels.

Performance Measures	FY 1999	FY 2000
Combined Stationary and Mobile Source Reductions in Air Toxics Emissions		5 Percent
Reductions in National Highway Vehicle Benzene Emissions		21,871 Tons
Reductions in National Highway Vehicle 1.3 Butadiene Emissions		3,498 Tons
Reductions in National Highway Vehicle Formaldehyde Emissions		14,400 Tons
Obtain Data for Building the 1999 National Toxics Inventory	1 Inventory	
Air Toxics Emissions Reduced from 1993	25 Percent	

Baseline: Performance Baseline: In 1993, the last year before MACT standards and mobile source regulations developed under the Clean Air Act were implemented, stationary and mobile sources emitted 3.7 million tons of air toxics. In 1996, implementation of MACT standards decreased air toxic emissions by 0.7 million tons (20%) from 1993 emissions. Implementation of mobile source regulations (e.g., reformulated fuels) also decreased air toxics emissions. Estimates of 1996 air toxic emissions reductions attributable to mobile source measures will be available in late 1998. We revise air toxics emission data every three years to generate inventories for 1993, 1996, 1999, etc, with a lag time of two years (i.e., the 1999 inventory will be available in 2001).

State Implementation of MACT Standards

In 2000 Ensure state implementation of 100% of promulgated MACT standards for major sources.

Performance Measures	FY 1999	FY 2000
Ensure State Implementation of Promulgated MACTs for Major Sources		100 Percent

Baseline: Performance Baseline: Following passage of the 1990 Clean Air Act Amendments, EPA identified 174 source categories for which MACT standards should be promulgated. As MACT standards are promulgated each year, the number becomes the baseline for the percentage of MACT standards to be implemented.

Promulgate Technology Based Standards

In 2000 Promulgate technology based standards for source categories of industrial facilities posing the greatest risks.

Performance Measures	FY 1999	FY 2000
Number of MACT Standards Promulgated		5 Sources

Baseline: Performance Baseline: Following passage of the Clean Air Act Amendments, EPA identified 174 source categories for which MACT standards were to be promulgated. This became the baseline for MACT standards.

Research

Human Exposure and Health Effects Methods

In 2000 Provide methods to estimate human exposure and health effects from high priority urban air toxics, and complete health assessments for the highest priority hazardous air pollutants (including fuel/fuel additives).

In 1999 Provide models and methods needed to estimate health risks from 30 highest priority air toxics

In 1999 Complete Health Assessments for five air toxics to be indicated as high priority by the EPA and regional offices.

In 1999 Complete Oral and Inhalation NonCancer Assessments for Benzene

Performance Measures	**FY 1999**	**FY 2000**
Complete four toxicological reviews and assessments (RfC, RfD, cancer unit risks) of high priority to the Air Program	5 Assessment	
Benchmark dose software available for public use.	30-SEP-1999	
Benzene RfD and RfC, Diesel, 1-3 Butadine Mobile Source Assessments	30-SEP-1999	
Produce process and framework for incorporating Acute Reference Exposure (ARE) values into IRIS		09/30/2000 framework
Submit for Agency consensus review five toxicological reviews and assessments (RfC, RfD, cancer unit risks) of high priority to the Air Program.		5 assessments
Report on extrapolation across concentration and time to support health risk assessment for acute ex	30-SEP-1999	

Baseline: A need exists to develop methods and models to estimate human exposure and health effects of urban air toxics, as well as health assessments for regulatory purposes. Currently (end of FY98), only one of the 33 (3%) proposed urban hazardous air pollutants (HAPs) that present the greatest threat to public health have all the dose-response assessment data on the integrated risk information system (IRIS) that is needed for risk assessment of urban air toxics. By the end of FY00, cancer and/or non-cancer dose-response assessments will be completed for 9 of the 33 (27%) proposed urban HAPs.

Air Quality Model Incorporating Air Toxics

In 2000 Develop an air quality model incorporating air toxics as their air chemistry and emissions become known, and source emissions and control information for both mobile and stationary sources to guide cost-effective risk management options.

In 2000 Preliminary Urban Scale Models-3/Toxics Model for community-based human exposure assessment for air toxics having known emissions and air chemistry.

Performance Measures	FY 1999	FY 2000
Complete four toxicological reviews and assessments (RfC, RfD, cancer unit risks) of high priority to the Air Program	5 Assessment	
Begin evaluation of the rcntly dev. urban scale Models-3/Toxics Model, to be used for community-based human exposure assessment for air toxics, using data sets for mercury and semi-volatile compounds.		09/30/2000 evaluation

Baseline: Performance Baseline: A need exists to develop an air uality model for mobile and stationary sources to allow for cost effective risk management options. Development of "formal" baseline info for EPA research is currently underway.

Verification and Validation of Performance Measures

Data sources include:

- EPA's Toxics Release Inventory (TRI);
- National Toxic Inventory (NTI);
- Aerometric Information Retrieval System (AIRS)
- MACTRAX
- EVENTS

The NTI houses emissions estimates for hazardous air pollutants (HAPs). Currently, we have completed a 1993 base-year NTI and are developing estimates for the 1996 NTI. Both contain emissions estimates for major area and mobile source categories, but at different levels of detail. The main improvement in the 1996 version will be the addition of facility-specific parameters that will make the inventory useful for dispersion modeling. To date, we have collected emission inventory data to update the NTI from:

(1) emissions data gathered to support development of MACT standards for source categories, which are required to be promulgated within two, four, seven, and 10 years of enactment of the 1990 Clean Air Act amendments

(2) the externally and internally peer-reviewed national inventories undertaken to support regulation of seven specific HAPs requiring standards under section 112(c)(6) and 40 HAPs pursuant to section 112(k)

(3) state and local inventories (34 states)

(4) TRI, which consists of data submitted by facilities and required under Right-To-Know legislation.

All of the above data sources rely on estimation techniques since emission testing at every facility would be resource intensive. Often data from source tests are extrapolated to other similar sources. In addition to source testing, other estimation techiniques include material balances, and emission factors (e.g., pounds HAP emitted per pound of throughput) combined with industry-specific activity data (e.g., pounds throughput per year). For source categories for which we have no data, we generally develop emissions data using emission factors and activity level.

An update of the 1993 NTI was completed in October 1998, including a complete compilation of MACT baseline emissions data for two-year, four-year, seven-year, and the majority of 10-year source categories. We also plan to complete the compilation of 1996 NTI draft major and mobile source data. The 1996 NTI, including internal and external review, will be completed by September 30, 1999.

MACTRAX provides a mechanism to track the air implementation activities by each state to insure that the emission reductions expected from the development of MACT standards can be realized through full implementation of the standards. The EVENTS tracking system provides a means to track the proposal and promulgation of air toxics MACT and other regulations.

We plan to deploy Phase 1 of the national air toxics network by March 1999. At a minimum there will be 17 monitors in 1999, increasing to 40 monitors in 2000. Depending on how the resources are distributed (sites chosen, pollutants monitored, etc.), the number of monitors reporting as part of the national air toxics network could be substantially more than the numbers above.

Procedures for QA/QC of emission and ambient air toxics data are not as institutionalized as those used for the criteria pollutant program. Air toxics data are not currently required of states, but are submitted voluntarily. EPA does review the data to assure data quality and consistency, but no formal procedures are in place for quality assurance. Regional offices review all MACTRAX data before it is placed in the system. EPA sends the NTI data to states for their review and incorporates state comments and data into the system. Procedures are now being finalized to assure the quality of emissions inventory data collected from industry, which is used for the development of technology-based emission standards.

At present, we are developing Data Quality Objectives (DQOs), Quality Assurance Plans (QAPs), and a network design document for the national ambient air toxics network, which will be transmitted to the states and Regions to help design and deploy the network. When completed, these documents will help answer questions on the interpretations and limitations of the data collected from this network.

Mobile source data are validated by using speciated test data from the mobile source emission factor program, along with peer reviewed models which estimate national tons for the relevant year of interest.

Data limitations

The 1996 NTI will be the first EPA effort to estimate not only HAP emissions on a national scale, but also to associate source-specific parameters necessary for modeling such as location and facility characteristics (stack height, exit velocity, temperature, etc.) to emissions. The compilation of this huge amount of data presents a significant challenge to the EPA. Since HAP estimates have not previously been required, current data are limited and new methodologies for estimating emissions are necessary.

A total of 34 states voluntarily compiled and delivered HAP 1996 emissions inventories to EPA. Because states are not subject to reporting requirements, these state data vary in completeness, format, and quality. The majority of state data is likely to be based on emissions estimation as opposed to direct measurement. The EPA is evaluating and supplementing the state data with emissions data gathered during the development of MACT standards and with TRI data. Estimates obtained from regulatory development programs such as MACT are accepted as the best available data for the inventory because they are based on recent test data, control information, representative modeling scenarios, and input from industry and EPA experts. The TRI data used to supplement the NTI is likely also to be based on estimations and is limited in that data is submitted by thousands of individual facilities whose submissions are not quality assured and who may have differing estimation methods and interpretations of TRI reporting requirements. For sources not included in the state inventories, MACT data, or TRI, and for states with no data submittals, EPA estimates air toxic emissions by using emission factors and corresponding activity data.

Although emission factors are not intended for estimations of emissions on a source specific basis, EPA believes it is appropriate to use such factors in a national inventory covering a large number of sources. However, this does not provide a complete solution because there are not emissions factors developed for all source categories that emit HAPs.

Plans to Improve Data

The emissions data are hard to quality assure because of the varying methods of determining the total emissions in a given area. In the future, we will post all state emissions data in a compiled data base so that states and other interested parties can provide a much more intense review of the inventory. The Emissions Inventory Improvement Program (EIIP) provides consistent methods of estimating emissions and is another method for developing better state emissions data. We prepared air toxics emissions inventory guidance for state and local agencies in 1998. We document all emission estimates in the 1996 NTI so users of the data can determine how each estimate was developed. In order to improve the 1996 NTI data, we plan to provide the data to states and other interested parties for external review, incorporate additional state and MACT data, and continue to develop estimates for missing sources. In 1999, we will conduct internal quality assurance steps to improve the data. Specific internal activities will include evaluation of state data, MACT data and TRI data for individual facilities and a comparison of air toxics data to data collected under the EPA's criteria pollutant programs.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental

programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

As with the Criteria Pollutant Program, EPA coordinates with many organizations and other agencies to achieve reductions of risk from air toxics. EPA works with the Department of Energy on several fuels programs. Other programs targeted towards the reduction of air toxics from mobile source are coordinated with the Department of Transportation. These partnerships can involve policy assessments and toxic emission reduction strategies in different regions of the country. Other federal agency partnerships have been created to share costs for researching health effects and collecting monitoring air toxic monitoring data.

Research

In a national air toxics strategy, EPA will address whether any control measures are needed to address the urban toxics risk beyond other actions required under the Clean Air Act Amendments. The Mickey Leland National Urban Air Toxics Research Center was established in the law to carry out sound research to help assess the needs of the national urban air toxics strategy and to develop air toxics health research information that would contribute to improved risk assessment.

EPA's air toxics research supports the Agency's regulatory efforts on air toxics, which aid state and local governments in lowering major source and mobile source emissions.

Statutory Authorities:

Clean Air Act Title I, Part A and Part D, Subparts 3 and 5 (42 U.S.C. 7401-7431, 7512-7512a, 7514-7514a) (15 U.S.C. 2605)
Clean Air Act Title IV (42. U.S.C. 7641-7642)
Clean Air Act, Title II, Section 202 (l)(2)

Objective # 3: Attain NAAQS for CO, SO2, NO2, Lead

By 2005, improve air quality for Americans living in areas that do not meet the NAAQS for carbon monoxide, sulfur dioxide, lead, and nitrogen dioxide.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Attain NAAQS for CO, SO2, NO2, Lead	**$44,878.2**	**$42,184.1**	**$36,523.5**	**($5,660.6)**
Environmental Program & Management	$16,750.5	$17,276.4	$16,610.6	($665.8)
Science & Technology	$113.2	$113.2	$117.6	$4.4
State and Tribal Assistance Grants	$28,014.5	$24,794.5	$19,795.3	($4,999.2)
Total Workyears:	189.9	189.9	175.9	(14.0)

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Air,State,Local and Tribal Assistance Grants: Other Air Grants	$28,014.5	$24,794.6	$19,793.5
Mobile Sources	$113.2	$113.2	$117.6

FY 2000 Request

Under the Clean Air Act, EPA must set NAAQSs for pollutants that endanger public health and the environment. These pollutants include CO, SO_2, NO_2, and lead. States, tribes, and local agencies must develop clean air plans to meet the standards. These plans take into account the results of Federal pollution control measures (e.g., motor vehicle emission standards). Each pollutant and

the programs that reduce it are described separately below. This objective also includes cross-pollutant preconstruction and operating permit programs.

Carbon Monoxide

CO is a colorless, odorless, poisonous gas that enters the bloodstream and interferes with the delivery of oxygen to the body's organs and tissues. The health threat from exposure to CO is most serious for those who suffer from cardiovascular disease. Healthy individuals are also affected, but only at higher levels of exposure. Exposure to elevated CO levels is associated with visual impairment, reduced work capacity, reduced manual dexterity, decreased learning ability, and difficulty in performing complex tasks.

CO is formed when carbon in fuels is not burned completely. It is a byproduct of highway vehicle exhaust, which accounts for 60 percent of all CO emissions nationwide. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. As vehicle miles traveled continue to increase each year, these emissions can result in high concentrations of CO, particularly in local areas with heavy traffic congestion. Other sources of CO emissions include industrial processes and fuel combustion in sources such as boilers and incinerators.

EPA has set standards for CO and currently assists states, tribes, and local agencies in implementing strategies to reduce CO pollution and maintain compliance with the standard. CO tends to be a local pollution problem and is not transported from one area to another. Clean air plans for CO include many mobile-source related programs such as reformulated gasoline. Despite an overall downward trend in concentrations and emissions of CO, some metropolitan areas still experience high levels of CO. Approximately 20 areas are still classified as non-attainment for the CO air quality standard.

In 2000 EPA will continue to assist states, tribes, and local agencies in implementing strategies to reduce CO pollution and maintain compliance with CO standards. The Agency will carry out mobile source programs (such as oxygenated fuel and reformulated gasoline) and assist in implementing attainment and maintenance plans. The Federal emission standards program and state vehicle inspection/maintenance programs will continue to assure CO control. EPA will continue providing technical and programmatic guidance for implementing oxygenated fuels programs and will provide information to the scientific community and stakeholders on the environmental aspects of the use of oxygenated fuels, and make recommendations to improve the program.

EPA has initiated the five-year review of the CO standard required by the Clean Air Act and has targeted proposed and final decisions for mid-2000 and mid-2001, respectively.

Sulfur Dioxide

SO_2 belongs to the family of gases called sulfur oxides (SO_x). These gases are formed when fuels (mainly coal and oil) containing sulfur are burned, and during metal smelting and other

industrial processes. The major health concerns associated with exposure to high concentrations of SO_2 include effects on breathing, respiratory illness, alterations in pulmonary defenses, and aggravation of existing cardiovascular disease. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease (such as bronchitis or emphysema), are most susceptible to adverse health effects associated with exposure to SO_2. In the atmosphere SO_2 can react to form fine particles which may aggravate respiratory disease and lead to premature death. SO_2 is also a precursor to sulfates, which are associated with acidification of lakes and streams, accelerated corrosion of buildings and monuments and reduced visibility. Approximately 33 areas are still classified as non-attainment areas for the air quality standard for SO_2.

EPA will continue to ensure that all areas are in compliance with the standard and will review the standard, as the Clean Air Act mandates, to ensure that it adequately protects human health. The courts have remanded the most recent review of the SO_2 standard for further explanation of the decision to reaffirm. Final notice on the standard and the associated guidance is scheduled to be completed no later than the end of 2000. The final intervention level policy is intended to give states guidance on identifying and addressing high, short-term peaks that occur for short durations (five minutes) but that can cause bronchial constriction in asthmatics, a serious health concern.

EPA will increase efforts to reduce the more pervasive sulfur oxides through the acid rain, particulate matter, and Regional haze programs that are described under those objectives.

Lead

Exposure to lead mainly occurs through inhalation of air and ingestion of lead in food, paint, water, soil, or dust. Lead accumulates in the body in blood, bone, and soft tissue. Because it is not readily excreted, lead also can affect the kidneys, liver, nervous system and other organs. Excessive exposure to lead may cause kidney disease, reproductive disorders, and neurological impairments such as seizures, mental retardation, and/or behavioral disorders. Fetuses and children are especially susceptible to low doses of lead, often suffering central nervous system damage or slowed growth.

Thanks largely to reduced use of leaded gasoline, human exposure to lead is currently less of a problem. Today, smelters and battery plants are the major sources of lead in the air. Approximately 10 areas are still classified as non-attainment for the lead air quality standard.

EPA will continue a relatively low level of existing work, emphasizing the few nonattainment areas near smelters. Mandating the use of unleaded gasoline will continue to be the most effective way to prevent airborne lead.

Nitrogen Dioxide

NO_2 belongs to a family of highly reactive gases called nitrogen oxides. Nitrogen oxides form when fuel is burned at high temperatures, and are derived primarily from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers. Nitrogen dioxide can effect human

health and ecosystems, but also serve as precursors to ozone and particulate matter. Nitrogen dioxide reacts with volatile organic compounds in the presence of sunlight to form smog. Nitrogen dioxide can be converted into fine nitrate aerosols, a constituent of fine particles ($PM_{2.5}$). In addition, it is a strong oxidizing agent and reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates. Nitrogen dioxide irritates the lungs and lower resistance to respiratory infections such as influenza. They can also have adverse effects on both terrestrial and aquatic ecosystems, contributing to acid rain and eutrophication in coastal waters.

EPA has made progress toward reducing the emissions of nitrogen oxides and achieved the goal of having all areas in attainment for NO_2 by 2005. Over the next several years we will continue to work to maintain air at safe levels of NO_2. We will also review the standard to assure that it continues to protect public health.

Because NO_2 is an ozone precursor, control of NO_2 is a way to reduce ozone. The narrative for the ozone objective describes efforts to reduce the more pervasive nitrogen oxides in the acid rain and mobile source programs, encouraging market-based, low-cost pollutant trading. These programs will simultaneously address nitrogen oxides, ozone, and fine particulate matter.

Permits/New Source Review

EPA will make revisions to Part 70 operating permit rules to streamline permit revision procedures and will provide technical support to Regions, states, tribes and local agencies on permit program revisions. In 2000, EPA will promulgate the new source review reform rules which simplify the new source permitting process. In 2000, EPA also will enter an intensive period of training and technical support activities to ensure smooth implementation of this major regulatory reinvention effort. The Agency will continue to be involved in and expand, as needed, efforts to reform and streamline permitting programs.

FY 2000 Change from FY 1999 Enacted

STAG

- (-$5,000,000) STAG resources were reprogrammed from CO stationary source programs and NO_x and lead programs (-$9,000,000) to support minor source permit activities (+$4,000,000) and regional haze programs. Following the passage of the 1990 Clean Air Act Amendments in 1990, 48 areas were designated as being in nonattainment for CO. Currently, only 20 areas remain in nonattainment with 14 of those areas measuring CO levels at or below the NAAQS. The areas that still have CO violations will typically be addressed by additional reductions in mobile sources emissions, particularly reductions from implementation of Federal standards.

The STAG resources reprogrammed to minor source permit activities will address the expanded universe of synthetic minor sources that have resulted from the implementation of the Title V permit program. To avoid the requirements of the Title V program, sources can artificially limit their production schedules and/or capacity to keep their emissions below the 100 tons per year cutoff thereby becoming "synthetic" minor sources. While this avoids the stringencies of the Title V program it still requires that the state, tribal, and local agencies review and permit (without applicable Title V fees) these sources.

Annual Performance Goals and Performance Measures

CO, SO2, NO2, Lead NAAQS

In 2000	Maintain healthful and improve substandard ambient air quality with respect to carbon monoxide, sulfur dioxide, nitrogen dioxide and lead.
In 1999	Certify that 14 of the 58 estimated remaining nonattainment areas have achieved the NAAQS for carbon monoxide, sulfur dioxide, or lead.

Performance Measures	**FY 1999**	**FY 2000**
Regions take Final Action on CO Redesignation	7 Final actions	
Regions take Final Action on S02 Redesignation	5 Final actions	
Regions take Final Action on Pb Redesignation	2 Final actions	
Areas Redesignated to Attainment for Carbon Monoxide, Sulfur Dioxide, Lead, and Nitrogen Dioxide	14 Areas	
Areas maintaining healthful standards for CO, SO2, NO2 and Lead		100 Percent

Baseline: In 1996, as indicated in the most recent air trends report, 29 areas were in non-attainment. Six areas have been redesignated during 1997-98. The air quality trends data is updated each year with one-year lag time (i.e., the 2000 information will be available in 2002). The 1995 baseline for national highway vehicle emission for CO was 54,106,000 tons.

Verification and Validation of Performance Measures

Data Sources

- EPA Aerometric Information Retrieval System (AIRS) Air Quality Subsystem;
- EPA National Emission Trends Database;
- EPA Findings and Required Elements Data (FRED) System.

Data from the AIRS Air Quality Subsystem (AIRS-QS) and the National Emission Trends Database are used to determine if nonattainment areas have the requisite three years of clean air data needed for redesignation. A national network of State and Local Air Monitoring Stations (SLAMS) collects data which are stored in AIRS-AQS. The AIRS-AQS data, after it is quality assured by EPA, is the basis for determining attainment / nonattainment. The AIRS-AFS data compiles some emissions data from state and local agencies; this information is combined with data from other sources into the National Emission Trends (NET) Emission Inventory. The FRED system tracks the progress of states and Regions in reviewing and approving the required elements of the state implementation plans also needed for redesignation to attainment.

QA/QC Procedures

The QA/QC of the national air monitoring program has several major components: the Data Quality Objective process, reference and equivalent methods program, EPA's NPAP, systems audits, and network reviews. To ensure quality data, the SLAMS are required to meet the following: 1) each site must meet network design and siting criteria; 2) each site must provide adequate QA assessment, control and corrective action functions according to minimum program requirements; 3) all sampling methods and equipment must meet EPA reference or equivalent requirements; 4) acceptable data validation and record keeping procedures must be followed; and 5) data from the SLAMS must be summarized and reported annually to EPA.

Limitations of Data

Because quality assurance of ambient monitoring data from the states is sometimes a time consuming process, there is a gap between data collection and EPA's ability to use it for designation /redesignation. This period is usually around 90 days but can be extended if continuous issues arise.

Plans to Improve Data

The emissions data is hard to quality assure because of the varying methods of determining the total emissions in a given area. In the future, we will post all state emissions data in a compiled data base so that states and other interested parties can provide a much more intense review of the inventory. The Emission Inventory Improvement Program (EIIP), which has provided consistent methods of estimating emissions data and has also developed consistent quality assurance methods for use by the states, will improve the quality of state emissions data. The ambient monitoring data and source testing results will maintain their high quality through implementation of the QA/QC procedures discussed above. Since the dominant source of CO emissions is on-road mobile sources, the best means of improving the quality of the emission estimates is to provide precise inputs to the MOBILE model (used to calculate mobile source emission factors) and develop more precise estimates of Vehicle Miles Traveled (VMT). These two inputs (emission factors and VMT) determine the emissions from on-road mobile sources.

FY

Objective # 4:

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Coordination with Other Agencies

Clean air is a national goal which requires the cooperation and efforts of many ager organizations, industries and academic entities. Beyond EPA, each state has a department of na resources, environment, or health which deals with air pollution issues in their area. The Ag coordinates with several other Agencies in achieving goals related to ozone and particulate m For example, EPA has worked closely with the Department of Agriculture in developin agricultural burning policy. EPA and the Department of Transportation, Army Corp of Engi and state and local agencies work together to manage growth and urban sprawl. EPA has also wo with the Department of the Interior, National Park Service, in developing its regional haze pro and deploying the IMPROVE visibility monitoring network.

Statutory Authorities

Carbon Monoxide Clean Air Act, Title I; Clean Air Act, Title II ; Motor Vehicle Information Cost Savings Act and the Alternative Motor Fuels Act of 1988 (AMFA)

Sulfur Dioxide and Permitting , Clean Air Act, Title 1; Clean Air Act, Title V

Nitrogen Dioxide, Clean Air Act, Title 1

Lead, Clean Air Act, Title I

FY 2000 Request

Emissions of sulfur dioxide (SO_2, mostly from power plants and other industrial sources nitrogen oxides (NO_x, mostly from power plants and motor vehicles) react in the atmosphere an to earth as acid rain, causing acidification of lakes and streams and contributing to the damage of at high elevations. NO_x emissions are a major precursor of ozone, which affects public health damages crops, forests, and materials. NO_x deposition also contributes to eutrophication of co waters, such as the Chesapeake and Tampa Bays. Additionally, before falling to earth, SO_2 and gases form fine particles that affect public health by contributing to premature mortality, ch bronchitis, and other respiratory problems. The fine particles also contribute to reduced visibili national parks and elsewhere. Acid rain also accelerates the decay of building materials and p and contributes to degradation of irreplaceable cultural objects such as statues and sculptures.

The Acid Rain program is authorized under Title IV of the Clean Air Act and has nume statutory deadlines. In addition, the U.S. is committed to reductions in SO_2 and NO_x under the U Canada Air Quality Agreement of 1991. EPA's Acid Rain program uses market-based approa to achieve SO_2 and NO_x emission reductions. The program provides affected sources with flexib to meet required emission reductions at least cost (both to industry and government). The program features tradeable units called allowances (1 allowance = 1 ton of SO_2), accurate verifiable measurement of emissions, and a cap on total emissions. The acid rain program is see a model for flexible and effective regulation both here and abroad.

Major program activities include measurement, quality assurance, and tracking of SO_2, and CO_2 emissions, as recorded by continuous emissions monitors at more than 2000 electric ut units; conducting field audits and certifying emissions monitors; operation of an SO_2 allowa tracking system to record transfers of emission allowances between different parties; reconcilia of emissions and allowances at each unit to ensure compliance; and processing of permit actio

Phase I of the Program began in 1995 for 450 electric utility units. In the year 2000, P II of the program begins and approximately 2,000 utility and industrial units will be affected. Des this increase in the number of affected units, the number of quarterly emission reports proces (8,000 per year) will remain unchanged because Phase II electric utility units are already require report their emissions. However, there will be more than a four-fold increase in the number of u for which EPA will conduct an annual reconciliation of allowances with measured emissions. addition, there is likely to be a significant increase in allowance trading activity in Phase II of program. (More than 1,000 private allowance transfers per year are currently processed and number is expected to triple in Phase II of the program.) This increased workload will be hand through improved information resource management and by improving program operation efficiency through rule revisions.

The Acid Rain Program will be developing and operating the Emissions and NO_x Allowa Tracking Systems for 12 States of the Ozone Transport Region (OTR), in addition to administer the SO_2 and NO_x provisions of Title IV. The first year of compliance for this program is 1999 (w

the first compliance certification process being conducted by EPA for the OTR States in the first quarter of 2000). Over 500 additional facilities will require certification of emissions monitors and will report quarterly emissions to EPA beginning in 1999. The OTR program is expected to increase EPA's allowance trading activities by 50 percent over the Acid Rain Program.

In addition to program operations, the program is responsible for operating the Clean Air Status and Trends Network (CASTNet) dry deposition network and to provide critical support for operations of the National Atmospheric Deposition Program (NADP) wet deposition network and for a number of visibility monitoring sites. These monitoring efforts play a crucial role in the program's ongoing assessment activities, including reporting program results for the Government Performance and Results Act (GPRA) and fulfilling assessment responsibilities under Title IX of the Clean Air Act and the U.S.-Canada Air Quality Agreement. In 2000, the Acid Rain Division will be analyzing the costs and benefits of the program for inclusion in NAPAP's 2000 Integrated Assessment Report to Congress.

States also carry out activities to implement the SO_2 and NO_x portions of the Acid Rain Program including certification and recertification of continuous emissions monitors (CEMs), field audits of CEMs, and permitting activities. Some states may use acid rain state grant funds for monitoring programs to help assess the success of the program in reducing environmental risks.

Acid Rain control will also produce significant benefits in terms of lowered surface water acidity and less damage to high elevation forests and materials. Nevertheless, after full implementation of the program, significant residual risks will remain to human health, ecological systems and quality of life.

FY 2000 Change from FY 1999 Enacted

<u>EPM</u>

- (+$600,000) Funds will be used for program evaluation and development.
- (+$762,000) will be used to implement system modernization and enhancements to the Acid Rain Data System.
- (+$419,700) Total payroll costs for this objective will increase to reflect increased workforce costs.

Annual Performance Goals and Performance Measures

Reduce SO2 and NOx Emissions

In 2000 — 5 million tons of SO2 emissions from utility sources will be reduced from the 1980 baseline. Reflects total reduction that will be maintained annually. 2 million tons of NOx from coal-fired utility sources will be reduced from levels before implementation of Title IV of the Clean Air Act Amendments. Reflects total reduction that will be maintained annually.

In 1999 — Maintain 4 million tons of sulfur dioxide (SO2) emissions reductions from utility sources, and maintain 300,000 tons of nitrogen oxides (NOx) reductions from coal-fired utility sources.

Performance Measures	FY 1999	FY 2000
SO2 Emissions	4,000,000 Tons Red	5,000,000 Tons Red
NOx Reductions	300,000 Tons Red	2,000,000 Tons Red

Baseline: Performance Baseline for SO2: The base of comparison for assessing progress on the 2000 annual performance goal is the 1980 emissions baseline. The 1980 SO2 emissions inventory totals 25.9 million tons, and includes estimates for; electric utilities, industrial facilities, other fuel combustion sources, metals processing, petroleum and related industries, other industrial processes, on-road and non-road vehicle emissions, and other miscellaneous sources. This inventory was developed by National Acid Precipitation Assessment Program (NAPAP) and used as the basis for reductions in Title IV of the Clean Air Act Amendments. These data are also contained in EPA's National Air Pollutant Emissions Trends, 1990-1996 report. Performance Baseline for NOx: The base of comparison for assessing progress on the 2000 annual performance goal is emissions levels before implementation of Title IV of the Clean Air Act Amendments (CAAA). Emissions levels that would have resulted without implementation of Title IV of the CAAA were based on projection inventories of NOx emissions assuming growth without controls.

Verification and Validation of Performance Measures

The Acid Rain program performance data are some of the most accurate data collected by the EPA because the data for most sources (all coal-fired sources) consists of *actual* monitored, instead of estimated, emissions. The emissions data is collected through continuous emissions monitors (CEMS) and electronically transferred directly into EPA's Emissions Tracking System (ETS). Actual emissions of SO_2, NO_x and CO_2 are measured for each unit/boiler within a plant. The ETS allows EPA to track actual reductions for each unit, as well as aggregate emissions by all power plants and affected industrial facilities. A principal output of the ETS is the publication of quarterly and annual emission reports based on emissions monitoring data. The ETS quarterly and annual reports include summary statistics for SO_2, NO_x, CO_2 and emissions.

The Acid Rain program also tracks indicators which validate the quality of the emissions data, such as the accuracy of the monitors achieved during certification testing. There are four validation

measures that help to demonstrate the high quality of the data collected: the number of CEMS certified; the percentage of CEMS that meet the 10% relative accuracy standard; the percentage of CEMS that exceed the 7.5% relative accuracy target; and, the number of quarterly reports processed.

Coordination with Other Agencies

EPA's Acid Rain Division has recently embarked upon an innovative implementation partnership with northeastern states located in the Ozone Transport Region by working jointly on implementing the NO_x Budget Program. The OTC states set emission reduction goals and perform enforcement activities. EPA's Acid Rain Division collects the relevant emissions monitoring data, manages the emissions and allocation tracking systems and provides technical support to states as needed.

The NAPAP coordinates Federal acid rain research and monitoring under the auspices of the National Science and Technology Council, Committee on Environment and Natural Resources. Federal agencies participating in NAPAP include; EPA, Department of Energy, Department of Agriculture, Department of the Interior, National Aeronautics and Space Administration, and the National Oceanic and Atmospheric Administration. EPA's Acid Rain Division participates fully in the NAPAP process and contributes funding, data, and analyses to NAPAP's Reports to Congress.

Statutory Authorities

Clean Air Act (CAA) Titles I and IV (42. U.S.C. 7641-7642)1

Goal 2: Clean and Safe Water

Goal 2: Clean and Safe Water II-1
Safe Drinking Water, Fish and Recreational Waters II-13
Conserve and Enhance Nation's Waters II-37
Reduce Loadings and Air Deposition II-61

Environmental Protection Agency

FY 2000 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 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Clean and Safe Water	**$2,815,308.5**	**$3,418,339.7**	**$2,551,369.2**	**($866,970.5)**
Safe Drinking Water, Fish and Recreational	$1,026,835.1	$1,092,624.2	$1,079,342.0	($13,282.2)
Conserve and Enhance Nation's Waters	$300,672.5	$339,236.8	$311,444.1	($27,792.7)
Reduce Loadings and Air Deposition	$1,487,800.9	$1,986,478.7	$1,160,583.1	($825,895.6)
Total Workyears:	2,465.9	2,495.1	2,522.0	26.9

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.

While the nation has made considerable progress over the past 25 years, some waters still do not meet current Clean Water Act standards. 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. EPA must motivate people to be responsible in their day-to-day decisions that can affect the quality of their rivers, streams, lakes, wetlands, and estuaries.

Means and Strategy

To help achieve the nation's clean and safe water goals, EPA will expand implementation of the watershed approach in carrying out its statutory authorities under the Safe Drinking Water 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 are 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.

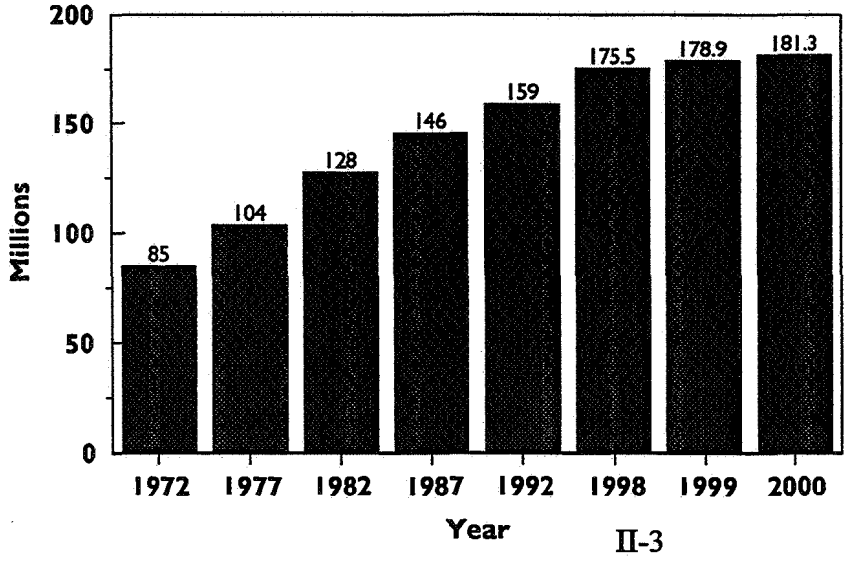
EPA will continue to implement the Safe Drinking Water Act Amendments of 1996 which charted a new and challenging course for EPA, states, tribes, and water suppliers. One of the central provisions of the Amendments that remains an EPA priority is significantly strengthening the source water protection program, which builds directly on the watershed approach. Other provisions that EPA will continue to support include establishing drinking water safety standards, which place emphasis on microbiological contaminants, disinfectant and disinfection byproducts (DBPs), and other pollutants identified as posing potentially high risks; capitalizing and managing the drinking water state revolving fund (DWSRF) program to assist public water systems in meeting drinking water standards; providing assistance to small systems to build or strengthen technical, managerial, and financial capacity; establishing an operator certification program; and providing "right-to-know" reports for all customers of public water systems.

EPA has increased its 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.

Under the Clean Water Act, EPA will continue to develop scientifically-based water quality standards and criteria and work with its partners to apply them on a watershed basis. 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 where standards are not being met. 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, and streamline the National Pollutant Discharge Elimination System (NPDES) permit program. The Agency will continue implementing its strategy for reducing the NPDES permit backlog. The Agency, in partnership with States, will develop strategies that target permitting activities toward those facilities posing the greatest risk to the environment. This is particularly important because the NPDES program will be expanded with the completion of the phase II storm water rule, new strategy for animal feeding operations and coverage of additional wet-weather sources contributing to pollution problems. EPA will also continue reorienting all its point source programs to focus and coordinate efforts on a watershed basis.

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. With approximately $16 billion worth of capitalization grants (which is almost 90%, which is more than originally authorized by Congress) all 50 states and U.S. territories have benefitted from this and other wastewater funding. To further support the objectives of the Clean Water Action Plan, the Agency proposes for FY 2000 to allow states to reserve up to an amount equal to 20% of their CWSRF capitalization grants to provide grants of no more than 60% of the costs of implementing nonpoint source and estuary management projects. Such grant funds may not be used for publicly-owned treatment works 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 used with loans for eligible projects for communities which might otherwise find loans unaffordable.

U.S. POPULATION SERVED BY SECONDARY TREATMENT OR BETTER



EPA has stepped up efforts to engage a variety of stakeholders to reduce nutrients, pathogens, and other pollutants from nontraditional categories of point sources, including

animal feeding operations, storm water drains, sanitary sewer overflows, and combined sewer overflows.

EPA is assisting states and tribes to characterize risks, rank priorities, and implement a mix of voluntary and regulatory approaches through state nonpoint source management programs. State and tribal nonpoint source programs are being strengthened to ensure that beneficial uses of water are achieved and maintained. 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.

The President's Clean Water Action Plan, 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.

Under the Clean Water Action Plan in 2000, watershed restoration action strategies will be completed 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. States will finish upgrading their nonpoint source management programs to fully incorporate all nine key elements of a comprehensive solution to polluted runoff problems and coastal states will submit final plans with policies and mechanisms to reduce polluted runoff in coastal areas. 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 states can start developing water quality standards for nutrients to protect waters from harmful algal blooms, dead zones, and fish kills.

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

FY 2000 Annual Performance Plan and Congressional Justification

Goal Objective Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Full-Time Equivalents (FTE)	0.0	0.0	0.0
Increase Use of Integrated, Holistic, Partnership Approaches			
Budget Authority	$16,810.5	$16,390.5	$16,663.8
Full-Time Equivalents (FTE)	36.7	18.7	9.7
Increase Opportunities for Sector Based Approaches			
Budget Authority	$11,496.8	$21,091.9	$10,018.5
Full-Time Equivalents (FTE)	100.7	100.7	89.8
Regional Enhancement of Ability to Quantify Environmental Outcomes			
Budget Authority	$7,995.1	$6,505.5	$7,659.8
Full-Time Equivalents (FTE)	4.6	4.6	4.6
Science Advisory Board Peer Review			
Budget Authority	$2,586.7	$2,486.7	$2,636.2
Full-Time Equivalents (FTE)	22.5	22.5	22.5
Incorporate Innovative Approaches to Environmental Management			
Budget Authority	$4,334.1	$4,034.1	$4,378.1
Full-Time Equivalents (FTE)	20.0	20.0	20.0
A Credible Deterrent to Pollution and Greater Compliance with the Law			
Budget Authority	$332,733.8	$319,390.3	$331,335.0
Full-Time Equivalents (FTE)	2,559.3	2,554.4	2,540.1
Enforcement Tools to Reduce Non-Compliance			
Budget Authority	283,209.4	272,965.9	292,917.6
Full-Time Equivalents (FTE)	2,074.70	2,078.00	2,192.10

FY 2000 Annual Performance Plan and Congressional Justification

Goal Objective Summary

Budget Authority
Full-Time Equialency (FTE)
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Increase Use of Auditing, Self-Policing Policies			
Budget Authority	$49,524.4	$46,424.4	$38,417.4
Full-Time Equivalents (FTE)	484.6	476.4	348.0
Effective Management			
Budget Authority	$659,860.5	$645,174.0	$715,653.6
Full-Time Equivalents (FTE)	2,974.7	2,991.2	3,003.3
Executive Leadership			
Budget Authority	$30,895.9	$31,112.6	$32,155.4
Full-Time Equivalents (FTE)	265.0	276.5	274.0
Management Services, Administrative, and Stewardship			
Budget Authority	$234,293.9	$220,806.1	$245,211.1
Full-Time Equivalents (FTE)	2,305.1	2,310.1	2,345.1
Building Operations, Utilities and New Construction			
Budget Authority	$354,753.9	$353,366.1	$397,485.1
Full-Time Equivalents (FTE)	3.4	3.4	3.4
Provide Audit and Investigative Products and Services			
Budget Authority	$39,916.8	$39,889.2	$40,802.0
Full-Time Equivalents (FTE)	401.2	401.2	380.8
ENVIRONMENTAL PROTECTION AGENCY (NET)			
Budget Authority	$7,790,275.4	$7,590,352.0	$7,206,646.0
Full-Time Equivalents (FTE)	18,375.1	18,384.6	18,405.7
**** The Agency budget authority does not include Fees**			
Fees	**$24,000.0**	**$0.0**	**$20,000.0**

Drinking Water Act (SDWA) and its 1996 Amendments, the Agency's drinking water research will develop dose-response information on 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.

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. 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 2000 Annual Performance Goals

Objective 01: Safe Drinking Water, Fish and Recreational Waters

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

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

By: 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.

By: 2000 Reduce consumption of contaminated fish and exposure to contaminated recreational waters by increasing the information available to the public and decision-makers. (Supports CWAP)

Objective 02: Conserve and Enhance Nation's Waters

By: 2000 Identify the primary life support functions of surface waters that contribute to the management of sustainability of watersheds.

By: 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.

By: 2000 Environmental improvement projects will be underway in 350 high priority watersheds as a result of implementing activities under the CWAP.

By: 2000 Working through the Five Star Program, EPA will have cooperated on and supported wetland and river corridor projects in 210 watersheds. (Supports CWAP)

Objective 03: Reduce Loadings and Air Deposition

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

By: 2000 Develop modeling, monitoring and risk management methods that enable planners and regulatory officials to more accurately characterize receiving and recreational water quality and to select appropriate control technologies.

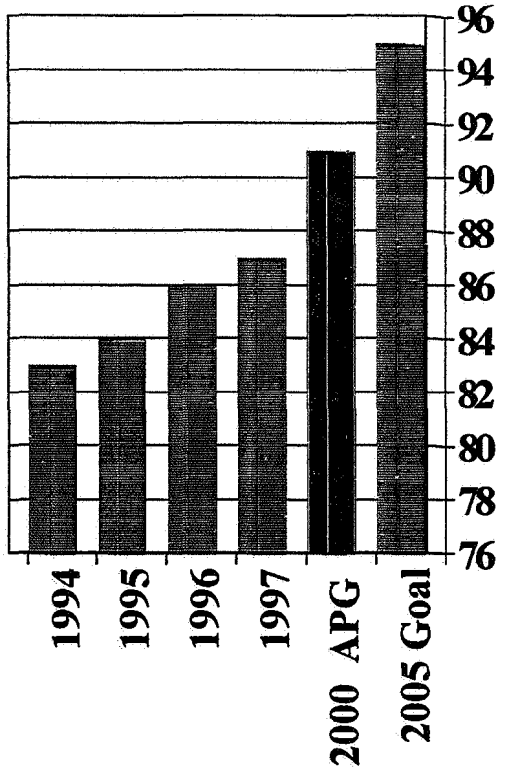
By: 2000 Industrial discharges of toxic pollutants will be reduced by 4 million pounds per year (a 14% reduction) and conventional pollutants will be reduced by 388 million pounds per year (a 9% reduction) as compared to 1992 discharges when considerations for growth are considered.

By: 2000 Industrial discharges of non-conventional pollutants will be reduced by 1.5 billion pounds per year (a 7% reduction) as compared to 1992 discharges when considerations for growth are considered.

Highlights

Contaminated water can cause illness and even death, and 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. In an effort to ensure that all Americans have water that is safe to drink, EPA will meet a vital milestone in 2000, by ensuring that 91 percent of the population served by community water systems will receive drinking water meeting all health-based standards in effect as of 1994. In establishing new contaminant protective levels, increased resources will assist states in implementing the requirements of two new health-based rules - the Stage 1 D/DBP and Interim Enhanced Surface Water Treatment Rule. EPA will also

increase resources for drinking water rule-making and data collection priorities, including 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 establishing rule-making and data collection priorities.



In 2000, 91% of population served by community water systems will receive drinking water meeting all health-based standards in effect as of 1994.

In February 1998, the Administration unveiled its Clean Water Action Plan providing 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 performance goal for 2000, and part of EPA's commitments under the Clean Water Action Plan, is for EPA, in conjunction with other Federal agencies, to prepare a *Watershed Restoration Progress Report*. In this report, which will be presented to the President, the nation's governors, tribal leaders, and the public will evaluate progress in implementing restoration actions and recommend any actions needed to improve progress towards meeting clean water goals. Also in 2000, through EPA's Five Star Program, the Agency commits to cooperate and support wetland and river corridor projects in 210 watersheds, with the ultimate goal of supporting 500 watersheds by 2005.

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 (NPDES) program (which includes NPDES permits, urban wet weather, large animal feeding operation, mining, 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 2000 are to reduce industrial discharges of toxic pollutants by 4 million

pounds per year, nonconventional pollutants by 1,551 million pounds per year, and conventional pollutants by 388 million pounds per year as compared to 1992 reduction levels.

States report that pollution from nonpoint sources 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 (NPS) 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 to work with states to adopt and expeditiously implement the nine key program elements in their existing nonpoint source programs. To provide an incentive for states to upgrade their NPS programs, EPA committed in the CWAP that all states must have incorporated all nine key elements into an approved Section 319 Nonpoint Source Management program to receive any Section 319 funding exceeding $100,000 beginning in FY 2000. In addition, EPA will encourage states to make use of Clean Water State Revolving Funds (CWSRF) and other Federal resources to finance projects that address polluted runoff.

Research

In 2000, EPA's drinking water research will include an increased focus on filling key data gaps and developing methods for contaminants on the CCL. Research will also continue supporting the 1996 Amendments to SDWA priorities, emphasizing research on sensitive subpopulations, adverse reproductive effects of drinking water contaminants, and disinfection by-products (DBPs). Research efforts in 2000 will work towards improving methods associated with the evaluation and control of risks posed by exposure to drinking water contaminants, such as disinfection by-products, microbial contaminants, and arsenic.

Research in support of conserving and enhancing the nation's waters will work to increase understanding of landscape characteristics and ecosystem structure and function and will also reduce uncertainty surrounding the effects of chemical, biological and physical stressors on aquatic ecosystems. This work includes developing stressor-response models for chemical contaminants, improving the ability to identify critical stressors, and predicting impacts from increased nutrient run-off that include an increase in harmful algal blooms. Under the Clean Water Act, states are required to develop designated uses for their waters. Some of this research will provide an improved biological basis for these designated uses, a longer-term direction identified by the Office of Water for improving existing water quality across the country. Some of the modeling research in this objective is related to activities in the Clean Water Action Plan.

In 2000, research efforts supporting the reduction of pollutant loadings will primarily focus on Wet Weather Flows. EPA's March 1995 Report to Congress on stormwater discharges, cited pollution from Wet Weather Flows (WWFs) as the leading cause of water-quality impairment. 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. WWF research will continue to develop diagnostic tools to

evaluate the exposures to toxic constituents of WWFs, and develop and validate effective watershed management strategies for controlling WWFs, especially during high volume and toxic WWFs. 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 (SDWA) Amendments of 1996 comprise 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. To listen to the comments and reactions of our stakeholders, to incorporate their views, to keep the process moving and to focus on the fact that our mutual goal is public health protection has taken the meaning of partnership to a new level in the drinking water and ground water program. The complexity of upcoming regulations and the time-consuming process of gaining consensus with stakeholders pose challenges in implementing the 1996 SDWA amendments.

The adoption of health-based and other programmatic regulations by the states is another area of concern. Since states have primary enforcement authority (primacy) for drinking water regulations, it is critical that the states 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 PWSS grant funding by approximately 60% since FY 1993. EPA is investing substantially in areas to provide technical assistance and training to the states on the small systems variances and exemptions and the consumer confidence report rules promulgated in 1998 as well as the health-based, microbial regulations that will be promulgated early in 1999.

The Clean Water Action Plan (CWAP) provides a blueprint for a cooperative approach to restoring and protecting water quality in which Federal, state, tribal, and local governments work collaboratively to focus resources and implement effective strategies. A key element of the CWAP 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). Although EPA expects participating Federal agencies to sign a Federal Agency Agreement that has been developed for this aspect of the CWAP, the Agency has minimal ability to ensure that these agencies work aggressively to promote source water assessment and protection activities. EPA staff will devote substantial "front-end" time

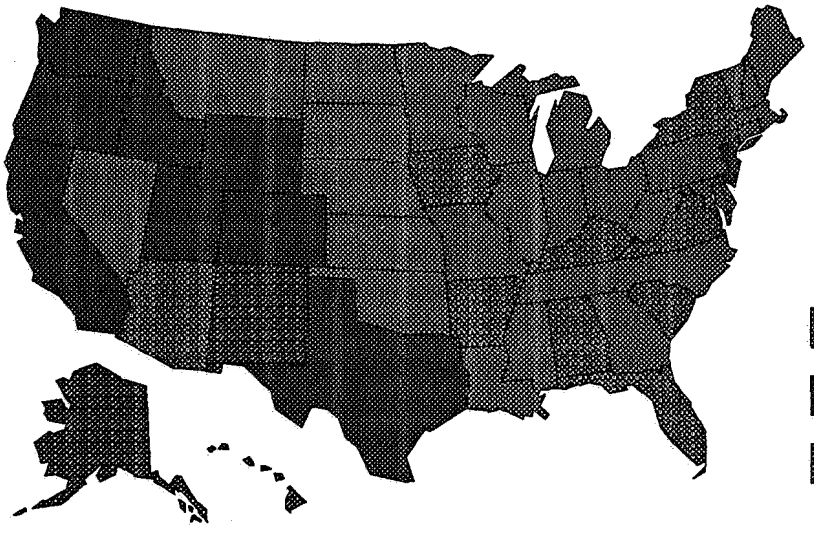
in the negotiation of this agreement with pertinent Federal agencies early in 1999 so as to maximize the expected benefits that are reflected in the year 2000 drinking water and ground water annual performance goals.

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.

STATE FISH ADVISORY PROGRAMS METHODS AND MONITORING EFFORT



Conducts Routine Monitoring

None or Very Limited Monitoring

Uses FDA Action Levels to Issue Advisories; Conducts Routine Monitoring

Uses FDA Action Levels to Issue Advisories; Conducts No Routine Monitoring

NOTE: Many States have active advisories based on previous assessments using FDA Action Levels

SOURCE: State Responses to USEPA 1997 National Listing of Advisories Questionaire

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, Fish and Wildlife Service, National Marine Fisheries Service, 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 financial 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 (CZARA).

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 reasonable and defensible 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. In 1999, EPA will 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. This is especially critical for new regulated sources like storm water and CSOs. In addition they must be able to maintain sufficient programmatic funds to continue to effectively manage point source programs.

It is assumed that states will effectively strengthen and implement improved nonpoint source programs consistent with their commitments in this area. Federal agencies must work together and fulfill their mutual commitments under their Strategic Plans and the Clean Water Action Plan (CWAP) if we are to succeed in addressing nonpoint source (NPS) 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.

In support of the objectives of the Clean Water Action Plan, the Agency is proposing language to allow states to reserve up to an amount equal to 20% of their Clean Water State Revolving Fund capitalization grants to provide grants of no more than 60% of the costs of 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 used with loans for eligible projects for communities which might otherwise find loans unaffordable.

To assist tribes in addressing polluted runoff, EPA proposes in 2000 to eliminate the current statutory ceiling on the percentage of Section 319 grant funds that may be awarded to tribes/tribal consortia.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Clean and Safe Water

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

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 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Safe Drinking Water, Fish and Recreational Waters	**$1,026,835.1**	**$1,092,624.2**	**$1,079,342.0**	**($13,282.2)**
Environmental Program & Management	$101,726.1	$110,067.7	$106,421.3	($3,646.4)
Science & Technology	$45,828.5	$49,847.0	$43,640.2	($6,206.8)
State and Tribal Assistance Grants	$879,280.5	$932,709.5	$929,280.5	($3,429.0)
Total Workyears:	864.4	868.6	861.5	(7.1)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Drinking Water Regulations	$38,860.0	$33,886.2	$43,484.9
Drinking Water Implementation	$30,917.1	$31,688.0	$31,803.8
UIC Program	$11,268.6	$11,744.7	$11,815.9
Rural Water Technical Assistance	$232.0	$9,955.0	$232.0

Key Programs (continued)	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
State PWSS Grants	$93,780.5	$93,780.5	$93,780.5
State Underground Injection Control Grants	$10,500.0	$10,500.0	$10,500.0
Source Water Protection (CWAP-Related)	$13,000.7	$11,685.8	$11,501.9
Water Infrastructure:Drinking Water State Revolving Fund (DW-SRF)	$775,000.0	$775,000.0	$825,000.0
Safe Drinking Water Research	$43,702.2	$47,728.1	$41,468.2
EMPACT	$769.1	$1,290.7	$476.4
Project XL	$0.0	$390.5	$0.0

FY 2000 Request

The Safe Drinking Water Act (SDWA) is one of the key environmental statutes that protects public health for all Americans. Calendar year 1999 is the 25th anniversary of this important law. Activities associated with the 25th anniversary will culminate in December 1999 with a forum on the future challenges of drinking water protection. The theme for this anniversary -- *Protecting Our Health from Source to Tap* -- also reflects the four major areas of emphasis in the 1996 SDWA Amendments that EPA is currently implementing. These four areas are: 1) improving the way that EPA sets drinking water safety standards and develops regulations 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 **(see Goal 7)**; and, 4) expanding funding for states and 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 2000, 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 and, thereby, health protection for the 240 million Americans who get their drinking water from public water systems. Under SDWA, EPA and the states/tribes are charged with 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 the drinking water program.

In 2000, the Agency plans increased support to, or reorientation of, a number of key drinking water activities in both standards setting/regulatory development and rule implementation and assistance. Under standards/regulatory development activities, investments will be directed to

increased support for work to meet statutory deadlines on the development of safety standards and regulations for high-risk chemicals such as -- arsenic, radon, and radionuclides (other than radon). At the same time, the Agency will be working closely with stakeholders to address microbial contaminants and contaminants from the processes used to treat drinking water through the development of the remaining three (of six) rules that comprise the statutorily-mandated Microbial/Disinfection Byproducts (M/DBP) rule cluster. In anticipation of the August 2001 deadline in SDWA, which requires EPA to make determinations of whether or not to regulate at least five contaminants from the Contaminant Candidate List (CCL), the Agency will expand work on the analysis and collection of occurrence data on health effects, exposure, analytical methods and treatment on potential priority contaminants. Potential priority contaminants were identified in the CCL which was required by the 1996 SDWA Amendments and issued in 1998. Under rule implementation and assistance activities, support to states/tribes will be expanded for continued implementation of the Stage I Disinfection/Disinfection Byproducts and Interim Enhanced Surface Water Treatment rules which were promulgated in November of 1998.

The Agency is continuing and expanding efforts to meet statutory deadlines on the development of drinking water regulations for radon, arsenic, and radionuclides (other than radon). With respect to radon, the National Academy of Sciences issued its risk assessment in September 1998, as required by the 1996 SDWA Amendments. EPA is using this assessment as the basis for the health risk reduction and cost analyses for various possible maximum contaminant levels of radon in drinking water. The deadline for the proposed rule is August 1999 and the final radon rule will be promulgated in August of 2000. One of the more challenging aspects of the radon regulation will be publication of multi-media mitigation guidelines that are due at the time of the rule proposal. This will be a truly cross-media rulemaking and is expected to involve extensive consultation and analysis -- both in the development and the implementation of these requirements.

EPA is also continuing its rule development activities on arsenic and will issue a Notice of Proposed Rulemaking in January of 2000. A particular emphasis will be placed on efforts to resolve health effects issues associated with arsenic in drinking water, since there are a host of national and international reports on the various health effects attributable to arsenic. In addition, EPA risk managers will be 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). These final decisions will be based upon a Notice of Data Availability which will be published in early 1999. A host of complicated risk management and implementation issues will be associated with these regulatory actions.

In addition, work will continue on the final three rules that comprise the M/DBP rule cluster. They are the Ground Water Disinfection, Stage II Disinfection/Disinfection Byproducts (D/DBP), and the Long-Term Enhanced Surface Water Treatment (LTESWT) rules. Work on these rules is

proceeding according to the plans and milestones established in order to meet statutory deadlines. The LTESWT rule is being developed in two parts: the first one will apply to systems serving less than 10,000 people, i.e., small systems, and the second will be directed to medium and large systems. The first part of the LTESWT, for small systems, will be issued in 2000, as required by the 1996 SDWA Amendments. The Agency's work on these two rules will include an expanded focus on risk analysis to determine what are 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.

Also, continued and expanded data collection activities for "new" contaminants will emphasize: 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. This research and data collection is critical for the next round of contaminants to be selected from the Contaminant Candidate List (CCL), for which standards and regulations are to be developed, as required by the 1996 SDWA Amendments. The Agency must make decisions on whether or not to regulate at least five contaminants from the CCL by August 6, 2001. In addition, these activities will help provide the basis for determining which contaminants to place on the next CCL (required to be published by February 2003).

In addition to risk assessment, the Agency will pursue continuing improvements in risk management, e.g., economics, industry characterization, and areas of special emphases. The 1996 Amendments required 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 about the numbers and characteristics of systems in various size categories) will also begin in FY 2000. In addition, the Agency will continue to explore treatment approaches for various contaminants of interest that are particularly appropriate for 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, particularly small systems serving less than 10,000 people.

One of the primary goals articulated in the drinking water and ground water strategic objective is the reduction of risk and the resulting increase in human health protection. A wide range of activities -- both the existing foundation of the drinking water and ground water program as well as new building blocks authorized in the 1996 SDWA Amendments -- contribute to risk reduction. In 2000, two regulations (Stage I Disinfection/ Disinfection Byproducts [D/DBP] and Interim

Enhanced Surface Water Treatment Rule [IESWTR]) that are part of the M/DBP rule cluster will be in the process of implementation. Congress, the Science Advisory Board, EPA, and stakeholders are in agreement that the greatest risk reduction efforts for drinking water protection are through the regulation of microbiological contaminants, such as *cryptosporidium* and disinfectant byproducts. Thus, it is important that states/tribes adopt these important rules expeditiously. An increase in resources, therefore, will be targeted to assist states in adopting and implementing these important rules. During 2000, the Agency expects to provide training and technical assistance on these rules to all 50 states, the District of Columbia and Puerto Rico. The Agency will directly implement these rules in those states and on Indian lands that do not have primacy for the drinking water program.

In addition, states will be implementing the guidelines for operator certification and recertification to assure that owners and operators of public water systems are fully implementing existing and new SDWA requirements. During 2000, 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 be actually implementing their programs for new systems to ensure that they demonstrate technical, managerial, and financial capacity. Also, States will be engaged fully in development of their capacity development strategies for existing systems. This capacity development strategy will address how the state will assist existing water systems in acquiring and maintaining the technical, financial, and managerial capacity needed for compliance with the SDWA. The Agency estimates that in 1999 all states will have obtained the legal authority or other means for ensuring that new systems, especially small systems, demonstrate adequate capacity. Another important activity to help small systems is the implementation of the Small Systems Variances and Exemptions rule that was promulgated in 1998. EPA support for the states' implementation efforts will directly affect public health outcomes as these activities provide a framework to help small systems comply with drinking water standards.

As systems begin to implement all these regulations, they will be submitting data on their implementation efforts via the Safe Drinking Water Information System (SDWIS), which tracks compliance with all SDWA requirements. SDWIS is the nation's best source of national compliance information. Data from SDWIS are used for Annual Compliance Reports, Drinking Water Consumer Confidence Reports, development of regulations, trend analysis, and public information. In 1999, EPA directed a higher level of resources to SDWIS to accelerate implementation of the state-based versions of SDWIS and develop, with stakeholders, the data reliability action plan to improve overall data quality. The 2000 resource request reflects a reduction to the Safe Drinking Water Information System. However, this reduction does not mean decreased emphasis on SDWIS, but rather a return to a level that will ensure its continued operation and maintenance while implementing the data reliability action plan. EPA will continue to both enhance the functionality of SDWIS and work with the states to implement state-based versions of this database.

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 activity authorized and enhanced in the 1996 SDWA Amendments. States are required to conduct source water assessments that help determine the vulnerability of each state's sources of drinking

water to contamination and their consequent risk to human health. In 2000, the Agency expects that a majority of the states will be implementing their EPA-approved source water assessment program.

In 2000, 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 (SDWA) 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, EPA has directed resources to expand EPA's 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 Class V underground injection wells that will be promulgated in 1999. The Class V rule will apply to industrial disposal wells, automotive service station wells, and large capacity cesspools that exist nationwide. Through a multi-partner effort, EPA will work with local government managers of source water protection programs to prepare for implementation of the Class V rule. Furthermore, EPA will work directly with the states to implement the changes necessary for maintaining primacy for the Class V program. The Agency will directly implement the Class V program in those states and on Indian lands that do not have primary enforcement authority.

The Agency will also expand support for the Drinking Water State Revolving Fund (DWSRF) by increasing capitalization by $50 million. The DWSRF was established to provide assistance to public water systems in order to 1) finance the cost of infrastructure improvements as well enhance water system management, 2) implement source water assessments, and 3) encourage comprehensive source water protection. All states will continue to administer their DWSRF in 2000. At least 400 community drinking water systems will have received DWSRF loans. As many as 100 drinking water systems will actually be using funds to improve and upgrade their pipes, treatment plants, and other components of their drinking water infrastructure.

Through base program activities, new activities authorized in 1996, increased funds targeted to standard setting/regulatory development for high-risk drinking water contaminants and rule implementation efforts, and cooperation between the CWAP and source water protection program, EPA expects to meet its 2000 interim goal that 91 percent of the population will receive drinking water meeting all health-based standards, up from 83 percent in 1994.

Also, through partnerships with the American Metropolitan Water Agencies and the American Water Work 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.

Reducing exposure to contaminants in fish and shellfish and through contact in recreational waters is a top priority for the National Water Program. In 2000, the Agency will continue to work with its state partners to ensure that they adopt into their standards a suite of 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, improve the scientific basis for beach assessment, and 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. By 2000, the Agency will publish guidance documents and provide training that addresses sampling and risk assessment methods to provide a more uniform nationwide standard of protection. 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. In addition, the Agency will continue to support monitoring/modeling pilot programs to improve states' ability to predict and address contamination events at beaches. In 2000, 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 begin development of alternative risk-based indicators and methods for skin, respiratory, eye, ear, throat, and gastrointestinal diseases most commonly resulting from exposure to contaminants at beaches.

The Agency will continue to develop and expand an Internet-based Federal database 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 begin to develop 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. 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, acute 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. However, unwanted chemical by-products are produced during the disinfection process when the disinfectants react with organic precursors in the source water. After long-term ingestion, these disinfection by-products (DBPs) have been shown to cause harmful health effects, including cancer, renal failure and adverse reproductive outcomes in experimental animals. 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. High uncertainty and potential adverse risk exist because of the tens of millions of people who potentially will be exposed to these unknown and/or understudied contaminants.

In 2000, EPA's drinking water research will include an increased focus on filling key data gaps and developing methods for 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 DBPs and arsenic, and waterborne disease occurrence studies, as well as treatment and maintenance of water quality in the distribution system.

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 2000, microbial research will continue to emphasize field studies to evaluate the nature and magnitude of waterborne diseases (particularly emerging pathogens on the CCL) in communities as a function of quality, treatment process, and demographic characteristics. We will continue to develop and apply improved tools for conducting epidemiology studies of waterborne diseases. In 2000, the results of a waterborne disease occurrence study will be complete, and a report will be issued that describes

waterborne disease outbreaks in the U.S., including the demographics of the affected populations, the types of pathogens responsible for the outbreaks, and the types of water sources and treatment deficiencies involved.

Health effects research on chemicals in 2000 will continue to focus on laboratory and field studies of selected high priority DBPs, arsenic and contaminants on the CCL. Epidemiology research will include studies to evaluate the extent to which subpopulations, such as infants and pregnant women, may experience elevated health risks from contaminants in drinking water. Hazard identification and dose-response data to characterize the cancer and noncancer effects of selected priority contaminants will address key uncertainties in drinking water risk assessments.

The ability to detect and measure contaminants, particularly microbes, in drinking water is hampered by the lack of available methods. Many existing methods are too complex, costly and time consuming to be useful in conducting nationwide occurrence surveys or compliance monitoring programs. In 2000, EPA's drinking water research will include developing analytical detection methods for chemical and microbial contaminants, including those on the CCL. Information on contaminant occurrence in drinking water and potential human exposure is needed for setting research priorities. Also, measurement methods are needed to conduct well-designed toxicity, assessment and treatability studies. EPA's research will apply and evaluate newly developed measurement methods in occurrence and exposure studies for viruses, bacteria and parasites in potential sources of drinking water. In 2000, EPA will issue a report on the identification of new DBPs in drinking water resulting from alternative disinfectants used to combat waterborne disease. The development of a multi-pathway exposure model for a priority DBP will further reduce uncertainty in drinking water risk assessments.

Drinking water research will continue to characterize the magnitude and severity of adverse health effects associated with exposures to DBPs as complex mixtures, as well as to individual CCL contaminants. This work in 2000 will include the screening and prioritization of untested CCL contaminants and preliminary assessments of chemicals with limited or incomplete information in order to identify data gaps and research needs. Interpretation and use of epidemiologic data remains a major uncertainty for understanding both reproductive and cancer risks from contaminants. Through the development and application of newer risk science methods and tools for integrating and interpreting the scientific data, risk assessment studies can provide the framework for comparing chemical and microbiological risks and identify critical research needs and uncertainties.

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 exposure to DBPs. In 2000, EPA will issue a comprehensive summary of the most current understanding of how to control DBPs and microbial contaminants. As progress is made in the area of controlling *Cryptosporidium*, work will shift in 2000 to emerging pathogens and chemicals on the CCL, with an initial focus on microsporidia, methyl tertiary butyl ether (MTBE), and perchlorate.

In order to effectively protect the health of the consumer there must be assurance that the transmission and delivery of water to the tap is done in a way that assures pathogens do not contaminate the water in this phase of the operation. There is substantial evidence that many factors can cause the quality of water to deteriorate after treatment. Greater attention will be given to the design, operation, and maintenance of distribution systems to ensure water quality as well as hydraulic reliability. In 2000, EPA scientists will continue to develop a better understanding of the risk due to microbial intrusion into the distribution system, understand how this intrusion occurs, determine the types of approaches needed to detect pathogens in the distribution system, determine operating procedures needed to minimize exposure, and identify how intrusion can best be prevented. This effort will include developing guidance on rehabilitating, designing, replacing, operating and maintaining distribution systems. In addition, efforts to evaluate and protect source waters will be expanded.

Research will continue on the evaluation of technologies and the development of techniques for controlling the formation of corrosion by-products in household plumbing and drinking water distribution systems and controlling inorganics, such as arsenic. As required by SDWA, the Maximum Contaminant Level (MCL) for arsenic (50 μg/liter) is being reevaluated by EPA. This research will focus on the identification and evaluation of more cost effective treatment systems for small communities. Continuing in 2000, EPA will provide important data on the performance of two arsenic treatment methods relative to the new standard that is being developed. Corrosion research will assist community water systems in achieving lead and copper levels established under SDWA.

FY 2000 Change from FY 1999 Enacted

<u>EPM</u>

- (+$2,958,400) To assist states/Indian tribes (including the District of Columbia and Puerto Rico, and U.S. territories) in implementing the requirements of the two new health-based rules -- Stage 1 D/DBP and Interim Enhanced Surface Water Treatment Rule -- as well as the Small Systems Variances and Exemptions rule and capacity development guidances, the Consumer Confidence Report regulation, primacy revisions and operator certification guidelines. These funds will also be targeted to direct implementation activities carried out by EPA Regional offices while states are in the process of adopting these rules and for Indian tribes - none of whom has attained primacy for any drinking water regulation.

- (+$3,089,000) To fund analysis and collect occurrence data on health effects, exposure, analytical methods and treatment on potential, priority contaminants identified in the Contaminant Candidate List required by the 1996 SDWA Amendments and issued in 1998.

- (+$5,826,200) To increase the infrastructure that supports all rule-making activities. Cross-cutting regulatory infrastructure includes: 1) developing new methods and models for health risk assessment (i.e., sensitive population considerations), 2) analytical methods improvements

and laboratory certification, 3) new economic and cost/benefit methods and data, 4) small system treatment technologies, and 5) continued emphasis on treatment plant optimization approaches. Improved analytical methods for emerging contaminants on the Contaminants Candidate List will be particularly important, since any further research on these contaminants depends upon the availability of reliable analytical methods.

- (+$335,200) Source water protection activities will focus support on the implementation of source water assessment programs mandated by the 1996 Amendments to SDWA.

- (+$2,350,000 and +31.4 total workyears) of which 30.0 workyears are directed to the integration of SDWA and CWA efforts to ensure safe and clean water. Specifically, this increase in workyears will provide the staff necessary to help states implement source water protection efforts in high priority watersheds as part of watershed restoration action strategies under the Clean Water Action Plan (CWAP) and a 1.4 workyear increase will focus on assisting the states in expanding their CWA section 305(b) reports to include rivers, streams, and lakes that are designated for drinking water use.

- (+$903,800) to expand the national survey of contamination in fish tissue that was started in 1999 by increasing the number of samples to assure greater statistical applicability of the resulting information.

- (+$640,800) To reflect a payroll cost of living adjustment and regional travel increase in support of drinking water implementation and source water protection.

- (-$944,700) Reflects a shift from the Safe Drinking Water Information System (SDWIS) to establish a permanent Agency system modernization fund to improve management of system modernization needs to meet the Reinventing Environmental Information (REI) commitment and other mission needs on a multi-year basis. Reductions will come from the near completion of the Data Reliability Action Plan. This Action Plan was initiated at the end of 1998 as the reliability of some SDWIS data was being questioned. Most of the activities to develop the Action Plan are scheduled for completion in 1999.

- (-$520,100) Reflects an overall reduction in the Environmental Monitoring for Public Assess and Community Tracking (EMPACT) program. The Agency will continue its commitment to the program by awarding new grants for metropolitan areas and maintaining the Agency's efforts to develop time-relevant communication methods.

- (-$2,700,000 and -35.9 total workyears) Of this total, -34.9 workyears are being reoriented from ground water protection activities (e.g., Comprehensive State Ground Water Protection and Wellhead Protection programs) to help states implement source water protection and other efforts in high priority watersheds as part of watershed restoration action strategies under the Clean Water Action Plan and -1.0 workyear is being reduced from underground injection control resources to reflect the completion of the Class V study.

- The 2000 Request is $16,373,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

STAG

- (+$50,000,000) for the Drinking Water State Revolving Fund in support of the Administration's long-term goal to provide about $500,000,000 for annual financial assistance, once federal capitalization ends.

- The 2000 Request is $53,679,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

Research

S&T

- (+$5,998,280 and +17.2 workyears) Beginning in 2000, resources are being redirected within this objective from selected research on DBPs and microbial pathogens to address research on contaminants listed on the CCL, as required by the 1996 Amendments to SDWA. These resources will enable EPA to initiate risk assessment research and assessments for individual CCL contaminants; conduct research to investigate technologies for the control of chemicals and emerging pathogens on the CCL; initiate a program to obtain human exposure data for emerging pathogens on the CCL; and address health research needs for new CCL contaminants. Resources to support this shift to CCL-related research will come out of a portion of the ongoing disinfectant by-products and microbial research program, including; Disinfection and control technologies which have been sufficiently developed; and specific DBP and microbial work which is coming to completion. Other on-going priority research on DBPs and microbial pathogens will continue in 2000 and beyond.

- (+$540,000 and +10 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (-$7,605,000) Funding to support the following 1999 Congressional earmarks will not be continued in 2000: the American Water Works Association Research Foundation and the National Decentralized Water Resources Capacity Development project of the Electric Power Research Institute.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Drinking Water Systems Operations

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 At least 400 community drinking water systems will receive DWSRF funds that will help ensure that these systems provide drinking water that meets all health-based standards.

Performance Measures	FY 1999	FY 2000
CWSs receiving DW SRF funds to help ensure that they provide drinking water that meets all health-based standards	400 CWSs	
Community and nonprofit, noncommunity water systems that have initiated operations as a result of receiving DWSRF funds.		100 Water systems

Baseline: All states, the District of Columbia, and Puerto Rico received their complete Drinking Water State Revolving Fund capitalization grant awards by the end of 1998. As of December 1998, 350 drinking water systems nationwide had received DW SRF loans. Many of these systems are expected to use these funds to initiate operations that ensure compliance with drinking water health-based standards in FY99.

Drinking Water Health Standards

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 89% (an increase of 1% over 1998) of the population served by community water systems will receive drinking water meeting all health-based standards in effect as of 1994, up from 83% in 1994.

Performance Measures	FY 1999	FY 2000
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.	89 % Population	91 % Population

Baseline: In 1994, 83% of the population that was served by community water systems received drinking water meeting all health-based standards. Note that a recent recalculation of the baseline for 1994, has resulted in a baseline that is 2% higher than that reported in the FY99 Presidential Budget.

Rules for High-Risk Contaminants

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 Reports & primacy revisions) will be implemented to ensure protection from high-risk contaminants.

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

In 1999 — EPA will issue and begin 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 promulgates monitoring of unregulated contaminants rule to ensure that the highest risk contaminants are identified and managed.

Performance Measures	FY 1999	FY 2000
States, including DC and PR, that have received training and technical assistance on 4 of the rules that are being implemented.		50 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 Regulations

Baseline: Since these are new regulations, no baseline is available.

Protecting Source Water

In 2000 States and community water systems increase efforts and programs to protect their source water resources including ground water.

In 1999 4,400 community water systems will be implementing programs to protect their source water (an increase of 1,650 systems over 1998).

Performance Measures	FY 1999	FY 2000
CWSs with ground or surface water protection programs in place	4,400 CWSs	
States that are implementing their EPA-approved source water protection assessment programs.		40 States
CWSs implementing efforts to protect their source water resources, such as wellhead protection, sole source aquifer, and watershed protection.		7000 CWSs
Estimated # of CWSs (& estimated % of population served) implementing a multiple barrier approach to prevent DW contamination		No Target
Population served by CWSs implementing efforts to protect their source water resources, such as wellhead protection, sole source aquifer, and watershed protection.		28 Million People

Baseline: In 1998, 2,750 community water systems (serving 12 million people) implemented programs to protect their source water resources. By September 1998, 1 state was implementing its EPA-approved source water protection assessment program. EPA is currently working with its state partners to define multiple barrier approach and to identify the programs to be included in this approach. Once this definition is final a baseline can be set for the current number of CWSs implementing a multiple barrier approach to prevent drinking water contamination. This definition should be final and the baseline set by September 1999.

Underground Injection Well Management

In 2000 Increase protection of ground water resources by managing underground injection wells.

In 1999 EPA will ensure protection of groundwater sources of drinking water from potential endangerment by promulgating the regulation of UIC Class V wells.

In 1999 Ensure that 95% of injection wells requiring mechanical integrity testing in a designated high priority protection area pass the test on schedule.

Performance Measures	FY 1999	FY 2000
Availability of UIC Class V Regulation	1 Final Reg	
Underground Injection wells tested and passed for mechanical integrity	95 % Wells	
States, including DC and PR, that have received training and technical assistance on the Class V Rule.		50 States, DC, PR
Abandoned or other 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 Wells

Baseline: As of September 1998, no states nor PR nor DC had received training and technical assistance on the Class V Rule as it has not yet been promulgated. The rule is scheduled to be promulgated in the summer of 1999. As of 1996, 600 injection wells were closed by states.

River/Lake Assessments for Fish Consumption

In 2000 30% of the nation's rivers and lakes 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 25% of the nation's rivers and lakes will have been assessed to determine if they contain fish that should not be eaten or should be eaten in only limited quantities.

Performance Measures	FY 1999	FY 2000
States/Tribes monitoring and conducting assessments based on the national guidance to establish nationally consistent fish advisories.	25 States	40 States
River miles and lake acres assessed for the need for fish advisories & compilation of state-issued fish consumption advisory approaches	25 % Rivers/Lakes	30 % Rivers/Lakes
States for which data is entered into the public right-to-know database on beach monitoring and closures.	42 States	

Baseline: In 1998, 20% of the nation's waters were assessed to determine if they contained fish that should not be eaten or should be eaten in only limited quantities. As of September 1998, 16 states/tribes are monitoring and conducting assessments based on the national guidance to establish nationally consistent fish advisories.

Increase Information on Fish and Beaches

In 2000 Reduce consumption of contaminated fish and exposure to contaminated recreational waters by increasing the information available to the public and decision-makers. (Supports CWAP)

Performance Measures	FY 1999	FY 2000
Fish tissue samples collected.		500 Samples
High-use coastal beaches for which data is entered into the public right-to-know database on beach monitoring and closures.		500 Beaches
Number of digitized maps entered into the public right-to-know database on beach monitoring and closures.		150 Maps

Baseline: EPA data is not currently available on beach monitoring and closures, however, the Agency is beginning to compile data on beach monitoring and actions taken to protect the public from contamination in these recreational waters. The state/local government survey, which will be the key piece of information used to report progress, will be phased in to obtain data on all beaches. The baseline is 250 fish tissue samples will be collected by September 1999. By September 2000, the cumulative total will be 750 samples.

Drinking Water Designated Use

In 2000 Increase by 10% (over the 1996 baseline of 36 states) the number of states reporting in their Clean Water Act Section 305(b) submittals, the river and stream miles and the acres of lakes that are designated for drinking water use.

Performance Measures	FY 1999	FY 2000
States reporting assessment of river and stream miles and lake acres for drinking water use in their 305(b) submittals.		4 States

Baseline: In 1996, 36 states reported in their CWA Section 305(b) submission, the river and stream miles that are designated for drinking water use.

Research

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.

In 1999 EPA will develop critical dose-response data for disinfectant by-products (DBPs), waterborne pathogens, and arsenic for addressing key uncertainties in the risk assessment of municipal water supplies.

In 1999 Evaluating and Comparing the Health Risks and Benefits

In 2003 Control Contaminants in Drinking Water

In 2000 Vulnerability of Ground Water Supplies to Viral Contamination

Performance Measures	FY 1999	FY 2000
Data on first city study on microbial enteric disease.	30-SEP-1999	
Complete hazard i.d./screening studies on reproductive/developmental effects of selected DBPs.	30-SEP-1999	
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
Provide OGWDW with a report describing the use of ozone as a pretreatment technique, linking the amount of naturally occurring organic material to the composition and concentration of DBPs.	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.

Safe Drinking Water Research (Microbials)

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

Performance Measures	FY 1999	FY 2000
Interim report on modeling methods for estimating the vulnerability of ground water to viral contamination.	09/30/2000	
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

Performance Measures (continued)	**FY 1999**	**FY 2000**
Describe different technologies for cost/effective control of Cryptosporidium oocysts and DBPs.		09/30/2000
Add comparative Risk Framework Report	09/30/1999	

Baseline: There are many small drinking water systems that do not have adequate treatment to control microorganisms, especially Cryptosporidium oocysts, and disinfection byproducts placing thousands of people at risk (i.e., Cryptosporidium waterborne outbreaks, exposure to suspected carcinogenic trihalomethanes [e.g., chloroform]). Research is being conducted at bench and pilot-scale to evaluate various treatment technologies such as membranes, bag filtration, slow package slow sand filtration, and package disinfection. Previously unknown operating capital costs and performance data will be provided to utilities for assisting the selection of cost-effective control technologies for small and medium sized plants.

Safe Drinking Water Research (Arsenic)

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

Performance Measures	**FY 1999**	**FY 2000**
Report summarizing the results of two additional treatment evaluations for arsenic control.		1 Report
Provide OGWDW with a report summarizing the results of two technology evaluations that provide data on the performance of arsenic treatment relative to the proposed new standard for arsenic control.	1 Report	

Baseline: Performance Baseline: Uncertainties exist concerning the nature and magnitude of risks posed by exposure to arsenic in drinking water and the effectiveness of alternative control technologies. Development of "formal" baseline info for EPA research is currently underway.

Verification and Validation of Performance Measures

The Safe Drinking Water Information System (SDWIS) is the primary data source for verifying and validating the performance measures related to the objective of enhancing public health through safe drinking water. There are two components to SDWIS. SDWIS/FED is a national data base (housed on a mainframe computer) that includes the core information needed by EPA to assure that public water systems are in compliance with all of the statutory requirements in SDWA. This core information includes: inventory data on over 170,000 public water systems[1] nationwide,

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1 Public Water Systems (PWSs) provide piped water for human consumption to at least 15 service connections (such as households, businesses or schools), or serve an average of at least 25 people at

violations of both health-based standards and monitoring requirements by these systems, enforcement actions taken against systems by the state or EPA, and sampling results for both regulated and unregulated contaminants in these public water systems. SDWIS/ STATE is a PC-based system at the state level that has been designed to address the specific drinking water information needs of the state. It includes not only the data that the state must report to SDWIS/FED but also data the state determines to be critical to carry out its primary enforcement authority.

Formal quality assurance/quality control (QA/QC) procedures have been implemented for both data entry and data retrieval. The Agency has a laboratory certification program to ensure that there is a consistent approach and method for collecting and analyzing public water supplies' samples for regulated/unregulated contaminants. In addition, the Agency itself conducts or supports sanitary survey studies of public water utilities, performs data verification (audits) and management reviews, and provides extensive technical assistance and training on QA/QC measures. The SDWIS Executive Board reviews QA/QC approaches regularly and a peer review process is in place to test any new modules or revisions to existing modules of SDWIS. The Agency is continually working to improve data quality and has initiated action in this area through the implementation of a Data Reliability Action Plan. The focus of this Action Plan is to analyze the overall reliability of the data in SDWIS and initiate actions to address any problems that may found. This Action Plan and the Agency's ongoing stakeholder process for review of data quality are fundamental to the drinking water program as data collection, verification, quality and control are very important aspects for measuring how well EPA is achieving its annual as well as longer-term strategic objectives.

Data will also be compiled on efforts to implement the underground injection control program, including performance data on mechanical integrity testing of UIC wells and permitting and closure efforts targeted at Class IV and V wells. EPA will collect this data from the UIC Federal Reporting System (7520 forms), which includes information submitted annually by EPA and state UIC Program Directors to Headquarters. A national workgroup, composed of EPA Headquarters and Regional staff and state officials, is reviewing the current UIC approach to collecting data, which uses outmoded methods as completing forms and submitting them in hard copy to Headquarters or incompatible PC programs such as *Professional File* and *D-base*. This workgroup is charged with the design of a new user-friendly PC-based system that will be used by the UIC community (Headquarters, Regions, states) and will focus on the collection and analysis of data that are environmental and performance components of the UIC programs. The new data system will have QA/QC procedures built into its collection, maintenance, processing, and reporting. Both the implementation of the Government Performance and Results Act and the expected promulgation and implementation of Class V rule are the catalysts for the development of a new and improved UIC data system.

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least 60 days per year. PWSs can be community (water is provided to the same population year round), non-transient non-community (serves at least 25 of the same people at least six months of the year, e.g., schools, factories, hospitals) and transient (caters to transitory customers in non-residences such as campgrounds, motels and gas stations).

The National Listing of Fish and Wildlife Advisories database is the primary data source for the performance measures related to safe consumption of fish and wildlife. Each year, states and tribes submit information that the Agency enters into the database and validates. The database contains information on the water bodies under advisory, the types of advisories and bans in place, the special category and size ranges of fish and/or wildlife involved, chemical contaminants identified in the advisories, lake acreage or river miles under advisory, the date advisories were issued, and the proportion of assessed waters that are under advisory in a given year. Data submitted by states and tribes on the proportion of assessed waters under advisory will be used to help EPA calculate the performance measure. Additional data will help the Agency assess program performance in more detailed areas such as specific types of waters under advisory and/or assessed or specific pollutants. While states and tribes are assuring that the information they submit is accurate, the Agency provides detailed guidance on how to assure that monitoring and sampling procedures are consistent and accurate. It is important to note that the FY 2000 measure does not directly address the Agency's goal of reducing consumption of contaminated fish. It represents an interim program goal of increasing the overall proportion of waters that are assessed to see if fish consumption advisories are necessary. In the short-term, then, we would expect that the number and area covered by fish advisories would increase. In the long-term, as our understanding of the scope of the problem increases, the Agency will strive to assist states and tribes in reducing consumption of contaminated fish through both advisories and remedial efforts.

EPA data are not currently available on beach monitoring and closures. However, the Agency issued an Information Collection Request (ICR) to solicit data on beach monitoring and actions taken to protect the public from contamination in these recreational waters. The state/local government survey that has been developed as a result of the ICR is the key piece of information used to report progress. Information gathered through the EPA survey will be phased in to obtain data on all beaches. The survey will be designed to report all information necessary to measure progress against the annual performance measure goal. The survey instrument was developed through extensive external consultations, although it did not undergo a formal peer review. The database being developed to store the information is consistent with all EPA standard operating procedures and requirements. The database will not contain detailed monitoring or water quality data. Rather, it will contain information on specific beach advisory and closure activities performed by states, tribes, and local governments. The Agency's beach monitoring program is undergoing the scientific peer review process.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-

level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

EPA has in place a Memorandum of Understanding and Interagency Agreement with the

Centers for Disease Control and Prevention (CDC) in the Department of Health and Human Services (DHHS). 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.

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 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 the U.S. Postal Service, 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's coordinates with USGS, 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.

EPA is also working closely with the Office of Pipeline Safety in DOT to coordinate language in the Department's regulations pertaining to its unusually sensitive areas initiative.

The Agency has in place an "umbrella" Interagency Agreement that serves as the framework for coordinating the all 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 Centers for Disease Control (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 (NOAA), and Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) 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 only Federal Agency with the direct mandate to protect and provide safe drinking water, health effects and exposure research is also being conducted at the Center for Disease Control and Prevention (CDC), National Cancer Institute (NCI) and National Institute for Environmental Health Sciences (NIEHS). Research related to children's risk and assessing exposures to children is also being conducted in EPA's Pesticides and Toxics research program and in the Food and Drug Administration (FDA). Efforts in other Agencies are being carried out either in conjunction with EPA or are being done as a complement to EPA's research program. The private sector, particularly the water treatment industry, is also conducting research in support of EPA's drinking water program.

In March of 1998, EPA published a list of potential contaminants for future regulation, the Contaminant Candidate List (CCL). Research to identify data gaps and priority needs in health effects, exposure and analytical methods are being conducted in conjunction with research efforts in CDC, NIEHS, Department of Defense (DOD), and FDA. Interactions with external Stakeholder groups have also been initiated, and will help determine EPA's priorities and future drinking water contaminant research needs. 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.

Arsenic issues have evoked both national and international interest and views concerning possible research that is needed or is useful for assessing arsenic exposure risks, analytical capabilities and treatment technologies. Arsenic research and assessments are being conducted by the National Academy of Sciences (NAS), and health effects and exposure research is being carried out by NIEHS.

Statutory Authorities

Safe Drinking Water Act
Clean Water Act
Toxic Substances Control Act

Environmental Protection Agency

FY 2000 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 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Conserve and Enhance Nation's Waters	**$300,672.5**	**$339,236.8**	**$311,444.1**	**($27,792.7)**
Environmental Program & Management	$135,543.9	$166,215.1	$141,940.0	($24,275.1)
Science & Technology	$15,599.3	$19,492.4	$19,974.8	$482.4
State and Tribal Assistance Grants	$149,529.3	$153,529.3	$149,529.3	($4,000.0)
Total Workyears:	714.2	727.5	770.3	42.8

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Water Quality Criteria and Standards (CWAP)	$19,670.4	$17,842.5	$22,280.7
Wetlands (CWAP)	$17,489.4	$16,110.6	$18,124.5
National Estuaries Program/Coastal Watersheds (CWAP)	$16,398.5	$16,544.3	$17,048.8
South Florida/Everglades (CWAP)	$3,075.8	$3,099.3	$3,084.6
Chesapeake Bay (CWAP)	$18,880.1	$19,630.1	$18,899.3
Great Lakes (CWAP)	$6,354.8	$5,381.6	$4,366.3
Gulf of Mexico (CWAP)	$4,283.6	$3,798.9	$4,290.6

Key Programs (continued)	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Long Island Sound (CWAP)	$500.0	$900.0	$500.0
Pfiesteria (CWAP)	$500.0	$2,500.0	$500.0
Pacific Northwest (CWAP)	$820.7	$713.6	$823.9
Lake Champlain (CWAP)	$1,000.0	$2,000.0	$1,000.0
State Pollution Control Grants (Section 106) (CWAP)	$115,529.3	$115,529.3	$115,529.3
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
Clean Water Action Plan-Related Research	$0.0	$0.0	$1,855.1
EMPACT	$0.0	$649.2	$0.0

FY 2000 Request

In 1998, the Administration unveiled its Clean Water Action Plan that provided 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. Towards 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. EPA will also 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), including timely submission of approvable lists of impaired waters and development of TMDLs at an appropriate pace.

The Agency will continue to support comprehensive water quality assessments that will establish baselines against which to gauge progress toward objectives and goals and support decision-making necessary to implement watershed enhancements on a priority basis. The Agency will continue to work with its state and tribal partners to establish water quality 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 Section 305(b). EPA ensures that states and tribes are entering relevant water quality and related data into EPA's modernized national data system (STORET). An important use of state comprehensive 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. The IWI will be critical to understanding and communicating progress toward the Agency's goals. The IWI program is also in Goal 7, Objective 1.

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 (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. In support of these efforts, the Agency will move toward enhancing the BASINS modeling package, a powerful geographic information system which links projected nonpoint source runoff with point source discharges. BASINS enhancements will include the use of USDA field scale models to expand the type and scale of Best Management Practice (BMP) evaluations, and the incorporation of mixing zone models and AQUATOX, an ecosystem function model. EPA will continue to provide training to states and tribes in using the model to simulate complex and local environmental conditions and to support the development of TMDLs.

EPA will work with its state partners to ensure that they adopt into their standards a suite of criteria to protect designated uses. In 2000, the Agency will 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 Clean Water Act (CWA) until approved by EPA. The Agency is devoting significant effort into reducing the backlog of approval actions taken on states' proposed water quality standards. In 2000, EPA will establish procedures to ensure that future actions are taken within the statutory deadlines. The Agency will expand its efforts to implement 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, the Agency will assist states and tribes in addressing sediment contamination by offering assistance in applying the Sediment Quality Criteria users guide and training in the use of a sediment quality criteria modeling package. EPA will complete work on toxicity testing. Toxicity testing is needed for states to evaluate sediment quality and make decisions about appropriate control measures. EPA will finish methodologies to allow states to address a wider range of pollutants. The Agency, in cooperation with the Departments of Interior and Agriculture, will conduct a place-based contaminated sediment recovery demonstration project. EPA will also publish the second National Sediment Quality Inventory Report to Congress which will include the first Nonpoint Source Inventory.

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). Consistent with this approach and the Clean Water Action Plan, the Agency will establish numeric criteria for nutrients (i.e., nitrogen and phosphorus) that are tailored to reflect different waterbody types and different geographical regions 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. Because the endocrine system plays an essential role in human differentiation and growth, the developing fetus and children may be the most sensitive populations at risk for endocrine disruption. The Food Quality Protection Act (FQPA), Safe Drinking Water Act (SDWA) and other environmental legislation (the Toxic Substances Control Act (TSCA), the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), and CWA authorize screening and testing of pesticides, commodity chemicals, and drinking water source contaminants for endocrine disrupting potential. The Office of Water will work on this multi-media problem and support the Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) to advise the Agency on developing 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. EPA expects to approve water quality standards programs for five additional tribes in 2000. The Agency will also 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 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 a comprehensive plan for actions necessary to restore the health of the most impaired watersheds. With EPA assistance, states will accelerate the pace of development and implementation of TMDLs for nonpoint source-impaired waters in high priority watersheds identified through Unified Watershed Assessments under the Clean Water Action Plan. 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 1999. Based on these experiences, additional tools and technical information will be provided to states, tribes, local governments, and local watershed organizations in 2000 to address their priority water pollution and resource degradation problems. These techniques will assist in determining the actions needed to solve these 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 continue its targeted efforts through the National Estuary Program and other efforts to work with states and other stakeholders to develop and implement watershed management plans for coastal ecosystems that restore and maintain the health of degraded and threatened coastal aquatic communities and recreational waters. Components of an enhanced effort on the coasts include: increased emphasis on coastal partnerships to assist local decision makers in developing and implementing protection programs for coastal watersheds, 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, and management and remediation of contaminated sediments.

For coastal ports, EPA will work with Federal and state partners and other stakeholders 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. The Agency will also 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. 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 United States Department of

Agriculture (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, $115,529,300 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 will include developing Total Maximum Daily Loads (TMDLs), implementing an integrated wet weather strategy 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.

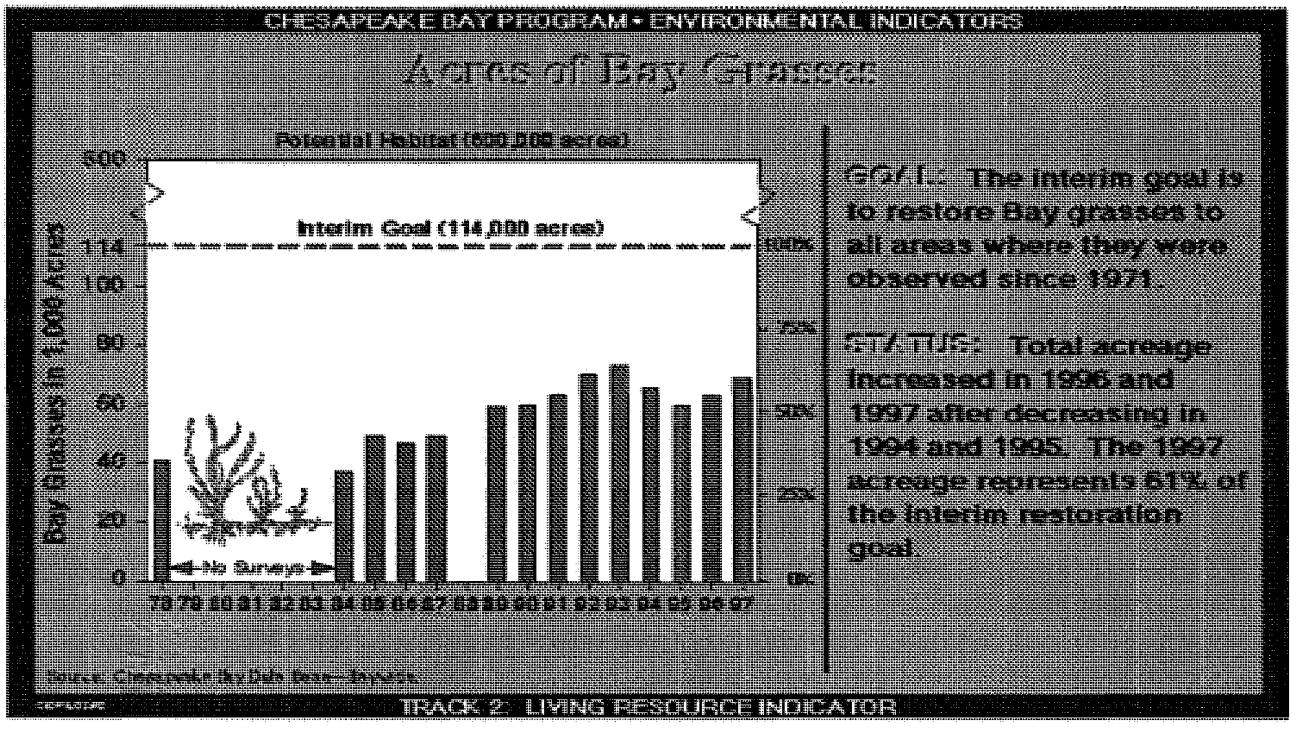
Water Quality Cooperative Agreements (WQCA) will support the creation of unique and innovative approaches to address requirements of the NPDES program, with special emphasis on wet weather activities, i.e., storm water, combined sewer overflows, sanitary sewer overflows and animal feeding operations. 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 will continue to support targeted geographic initiatives of national importance, including the National Estuary Program, the Chesapeake Bay Program, Gulf of Mexico Program, South Florida/Everglades, the Pacific Northwest Forest Plan, and the Great Lakes, including research, analysis, and outreach needed to complete the Lakewide Management Plans (LaMPs) for Lake Erie, Lake Michigan, and Lake Superior. Activities will be conducted in conjunction with the efforts of the Great Lakes National Program Office as described in Goal 6. 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 Program activities support three environmental goals: (1) protecting human health and the food supply; (2) maintaining and improving Gulf habitats that support living resources; and (3) maintaining and enhancing the sustainability of Gulf living resources. To accomplish these goals, the Gulf of Mexico Program has focused on four high-priority areas for program implementation: reducing/preventing excessive nutrient enrichment; protecting public health by preventing disease and reducing pollution sources; protecting and restoring important habitat; and reducing environmental risks associated with the introduction of harmful nonindigenous species. Annual performance goals for 2000 will support Gulf State efforts to reduce nutrient loads and minimize health effects from consumption of seafood or from contact with coastal waters. Additional areas of emphasis will include achievement of measurable habitat protection/restoration goals and establishment of ballast water monitoring and management programs in Gulf ports.

The Chesapeake Bay Program's overall goal is to restore and protect living resources and their habitats. To accomplish this goal, the Chesapeake Bay Program has focused on reducing the levels of nutrients by 40 percent by the year 2000 and maintaining that level thereafter, and on reducing toxics and restoring habitats important to fish and shellfish in the Bay. A good indicator of the Bay's health is the abundance of submerged aquatic vegetation (SAV). By 2000, EPA expects the Chesapeake Bay to contain 71,500 acres, up from 37,000 acres in 1984.



Wetlands

This objective also encompasses the Agency's efforts to protect and restore the Nation's wetlands through a combination of regulatory approaches and assistance and incentive-based programs. A total of $15,000,000 is requested from the STAG appropriation for the wetlands grants

program. EPA will work with other Federal agencies and non-Federal partners to continue implementation of the Clean Water Action Plan in an effort to achieve a net gain of 100,000 acres of wetlands per year by 2005. Information on watersheds will be reviewed to identify where the continuing loss of wetlands is a significant factor contributing to problems of water quality and loss of species. Working with Federal agencies through the White House Interagency Wetlands Working Group, and with state and tribal agencies, the Agency will develop a program to reduce wetland losses in those watersheds in a manner that will yield the most water quality and habitat benefits. EPA will continue to work with other Federal agencies to implement the provisions of the Clean Water Act (CWA) Section 404 program to protect wetlands, free-flowing streams, and shallow waters in a fair, flexible, and effective manner. EPA will support community-based partnerships to restore river corridors and wetlands to remediate significant ongoing adverse impacts of past policies and practices. Working with its state and tribal partners, EPA will develop biological indicators, criteria and assessment methods to relate net changes in wetland acreage to its effect on environmental functions. EPA will provide training to its partners and sponsor demonstration projects to improve the quality of decisions affecting wetlands and associated resources. EPA will work with economic sectors that impact wetlands to improve communication and to engage them in dialogue with environmental interests.

Through its Five Star Projects to demonstrate restoration of river corridors and wetlands and other new and established partnerships, EPA is uniquely positioned to direct resources to community-based restoration projects and to attract matching resources from many partners, including corporate, state, tribal, local, non-profit, volunteer, and Service/Conservation Corps groups. EPA will help its partners to identify new opportunities for collaboration so that they can undertake future restoration actions independent of ongoing Federal assistance. The program will also enable EPA to provide additional guidance, training, methods and technical assistance to support restoration efforts nationwide.

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 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.

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. This work includes developing stressor-response models for chemical contaminants, improving the ability to identify critical stressors, and predicting impacts from increased nutrient run-off that include an increase in harmful algal blooms. Under the Clean Water Act, states are required to develop designated uses for their waters. This

research will provide an improved biological basis for these designated uses, necessary for improving existing water quality across the country. Some of the modeling research in this objective relates to the Clean Water Action Plan (CWAP).

Modeling and landscape characterization research will improve the development of Total Maximum Daily Loads (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.

Bioaccumulation and biomagnification of chemical contaminants will also be addressed in this research. 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 nonpoint sources of pollution such as industrial discharges and stormwater runoff, respectively, and increased loadings of nutrients (nitrogen, phosphorus). Research will be conducted to evaluate exposure to contaminated sediments at the population, community, and ecosystem scale. 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 7000 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. Stressor response models will be developed 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.

The research 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.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$8,953,400, +16.2 total workyears) This increase will enable the Agency to increase technical and programmatic support for state and tribal compliance with Clean Water Act section 303(d) requirements, including the development and implementation of state and tribal TMDL programs. It will provide increased support for the development of improved tools and techniques for watershed management through vehicles such as the Watershed Forum. Within this amount, $1,000,000 is requested to increase funding for community-based watershed assistance grants, which support local watershed organizations in their planning and stakeholder involvement activities.

- (+$1,162,500, +8.3 total workyears) Coastal problems such as habitat deterioration and loss, toxics, toxic *Pfiesteria* and harmful algal blooms, marine biotoxins/pathogens and other coastal problems will be addressed in expanded coastal partnerships, in a coastal monitoring plan, a research strategy, and in implementation of the Harmful Algal Bloom Research and Monitoring Strategy. A comprehensive assessment of the quality of coastal waters will be initiated.

- (+$1,368,700, +6.0 total workyears) Resources will support the Agency's effort to enhance water quality monitoring and assessment activities.

- (+$474,300) Resources will be used to reduce the backlog of approvals/disapprovals of state water quality standards and to develop an improved review process to ensure that EPA actions are taken within the statutory deadlines.

- (+$250,000) Funds will allow EPA to conduct a place-based contaminated sediment recovery demonstration project.

- (+$1,000,000) Resources will be used to examine potential endocrine disruptors. In 2000, EPA will monitor drinking water sources to identify contaminants to be screened and tested. The initial effort will include studies to determine the extent of source water contamination with excreted human and animal reproductive hormones including not only natural hormones, but also those used in birth control, hormone replacement therapy and, for animals, growth and lactation enhancement. This cross-office effort will address concerns raised for both human and ecological effects with the results to support the development of water quality criteria.

- (+$868,100) to enhance states' ability to collect the necessary data and support development of ecoregion-based, site-specific nutrient criteria. The Clean Water Action Plan directs EPA to establish numeric nutrient criteria so that state nutrient criteria can be in place by 2003.

- (+$409,700, +3.0 total workyears) Funds will be used to expand Agency support to Indian tribes and assist more tribes in adopting and implementing effective water quality standards programs.

- (+$2,013,800, +6.0 total workyears) Additional workyears for the wetlands program will enable EPA to increase its abilities to work with Federal, state and local partners to meet our national objective of a net increase of 100,000 acres of wetlands per year by 2005. EPA will emphasize avoiding wetlands losses and increasing restoration efforts; for unavoidable losses, the Agency will increase mitigation accountability and improve the reliability of restoration. The workyear increase will allow EPA to better support states and tribes to assume lead implementation roles in wetlands protection and restoration. States are well positioned to use locally-tailored approaches to avoid wetlands losses and to restore wetlands through voluntary initiatives. Within these amounts, $1,000,000 is included to increase funding for the Five-Star Restoration Program, supporting locally-led river corridor and wetlands restoration demonstrations.

- (+$800,000) to support basic and essential aspects of successful state water quality standards programs. EPA will begin to develop an additional five aquatic life criteria as well as key technical guidance on implementing biocriteria as planned under the Clean Water Action Plan. The Agency will provide training to state permit writers through grants with universities in developing TMDLs, many of which are subject to court-ordered deadlines. To support the Clean Water Action Plan goal of achieving consistent application of designated uses nationwide and to address the backlog in EPA's decisions on proposed state water quality standards decisions, the Agency will increase its efforts to implement a comprehensive water quality standards database.

- (+$491,800) to increase efforts in the Gulf of Mexico Program, including reducing/ preventing excessive nutrients and other pollutants, protecting and restoring habitat, and reducing environmental risks associated with the introduction of nonindigenous species.

- (+$600,000) to promote successful implementation of state contaminated sediment management programs, EPA will provide important tools needed to evaluate sediment quality and make decisions about control measures like permitting or remediation. EPA will verify that sediment quality guidelines are protective of aquatic organisms, perform field validation studies for freshwater toxicity tests, and complete chronic test manuals. The Agency will also finish the methodologies for metal and PAH mixtures and nonionic organics and issue the first two sediment quality guidelines.

- (-$1,000,000) Reflects reduced funding for certain targeted planning and implementation efforts in the Great Lakes Basin. These efforts will be integrated into Great Lakes area comprehensive watershed restoration action strategies as detailed in the Clean Water Action Plan.

- The 2000 Request is $40,575,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

STAG

- The 2000 Request is $4,000,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

Research

S&T

- (+$216,000 and +4 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Assessments of Designated Uses

In 2000	Improve assessments of progress toward attainment of designated uses.
In 1999	21 States will electronically update their 1998 305(b) information reflecting adequate monitoring and assessment programs (Base of 0).

Performance Measures	FY 1999	FY 2000
Assess. river miles, lake acres, and estuary sq. miles that have wq support. desig. ben. uses, where applic., for: a) fish and shellfish consump., b) recreation, c) aquatic life support; d) dw supply		No Target
States electronically submit updated 305(b)	21 States	

Performance Measures	FY 1999	FY 2000
States, Tribes, and Territories electronically submit updated 305(b).		40 States, etc.

Baseline: 21 states electronically submitted updated 305(b) information in FY 1998. As reported in the "National Water Quality Inventory 1996 Report to Congress," 85% of the river miles, 65% of the lake acres, and 73% of the estuary square miles assessed for meeting the fish consumption designated use met this use; 79% of the river miles, 75% of the lake acres, and 76% of the estuary square miles assessed for meeting the recreation designated use met this use; 68% of the river miles, 69% of the lake acres, and 69% of the estuary square miles assessed for meeting the aquatic life support designated use met this use; and 84% of the river miles and 91% of the lake acres assessed for meeting the drinking water supply designated use met this use. Due to the manner by which data are currently collected, 305(b) data cannot be used to establish trends.

Clean Water Action Plan Implementation

In 2000 Restore and protect watersheds through implementation of CWAP strategies.

In 1999 As part of the Clean Water Action Plan, all states will be conducting or have completed unified watershed assessments, with support from EPA, to identify aquatic resources in greatest need of restoration or prevention activities.

In 1999 26 States submit implementation plans to EPA (either as separate plans of 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	FY 2000
States that submit 303(d) lists with schedules for establishing TMDLs.		50 States
States submitting implementation plans for TMDLs for waters impaired solely or primarily by NPS	26 States	
TMDLs sched. to be completed; TMDLs under est. by EPA & the states; TMDLs submitted by the state; state-est. TMDLs approved; & TMDLs est. by EPA.		no target
Assessed river miles, lake acres, & estuary square miles that a) are covered under Watershed Restoration Action Strategies and b) were restored to their designated uses during the reporting period.		no target
States that are conducting or have completed unified watershed assessments	50 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

Baseline: FY 2000 will be the first time that a Watershed Restoration Progress Report is submitted to the President, therefore, there is no baseline. States submit 303(d) lists every 2 years; as of January 1999, 47 states had submitted their 1998 lists. The 1998 303(d) list submissions from the states are under review to determine the national total of TMDLs scheduled to be developed and the number currently under establishment. Of those TMDLs scheduled to be developed on the 1998 303(d) lists, none have been submitted, established, nor approved. The States and Tribes are still in the process of submitting the first round of Watershed Restoration Action Strategies. Once these strategies are submitted, they will be analyzed to determine the number of assessed river miles, lake acres, and estuary square miles that are covered by the strategies. For any given reporting period the baseline for waters restored to their designated uses during the reporting period starts at zero. Once implementation of the Watershed Restoration Action Strategies starts to result in waters restored to their designated uses, a baseline can be established to compare one reporting period to another. FY2000 will be the first time that this measure will be applied.

Chesapeake Bay Habitat

In 2000 Improve habitat in the Chesapeake Bay.

In 1999 Improve habitat in the Chesapeake Bay.

Performance Measures	**FY 1999**	**FY 2000**
Wastewater flow to the Chesapeake Bay treated by Biological Nutrient Removal.	25 % WW flow	40 % WW flow
Acres of submerged aquatic vegetation (SAV) present in the Chesapeake Bay.	65,000 Acres	71,500 Acres
Acres of aquatic reef habitat designated, with construction and restoration of oyster reef habitat to occur within those areas.	11,000 Acres	11,000 Acres
Agricultural, recreational and public lands that have voluntary integrated pest management (IPM) practice established in the Chesapeake Bay watershed.	60 % lands	70 % lands
Stream miles of migratory fish habitat reopened through provision of fish passages.	400 Miles	877 Miles

Baseline: In 1985, 0% of wastewater flow had been treated by Biological Nutrient Removal. In 1994, 0 acres of aquatic reef habitat was designated, restored or constructed. 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.

Protecting and Enhancing Estuaries

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 Complete 21 of 28 Comprehensive Conservation and Management Plans (CCMPs) in the National Estuary Program. (Base of 17)

Performance Measures	FY 1999	FY 2000
Completed CCMPs	21 CCMPs	28 CCMPs

Baseline: In July 1998, 17 NEPs had approved CCMPs.

Marine Debris Monitoring

In 2000 100% of marine coastal states, Virgin Islands, Puerto Rico, and territories are monitoring their coastlines for sources and types of marine debris.

Performance Measures	FY 1999	FY 2000
Marine coastal states, Virgin Islands, Puerto Rico, and territories monitoring their coastlines for sources and types of marine debris.		100 % States, etc.

Baseline: As of 1998, 75% of coastal states and territories were monitoring their coastlines for sources and types of marine debris.

State/Tribal Water Quality Standards

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 Provide 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 EPA will review and approve or disapprove new or revised water quality standards for 15 states that reflect current guidance, regulation, and public input (Base of 10).

In 1999 17 Tribes will have established effective water quality standards programs.

Performance Measures	FY 1999	FY 2000
States with new or revised water quality standards that EPA has reviewed and approved or disapproved.	15 States	15 States
Models, methods, criteria developed/available for risk characterization of surface water contaminants.	1 List	
Tribes with water quality standards adopted and approved	17 Tribes	22 Tribes

Baseline: 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. At the end of FY 1998, 14 tribes had adopted and approved water quality standards.

Gulf of Mexico: Nutrient Reduction

In 2000 Provide technical and financial assistance to the Gulf State efforts to reduce excessive nutrient loads into priority watersheds, estuaries, and Gulf coastal waters, including point sources, storm water, agricultural runoff, and atmospheric deposition.

Performance Measures	FY 1999	FY 2000
Gulf States with identified priority watersheds for nutrient reduction provided project support by EPA.		5 States
Gulf States, working with local governments, to select point and nonpoint source controls to be implemented in each priority watershed with EPA assistance.		3 States
Priority coastal waters supported by the monitoring programs for nutrients and pathogens with EPA assistance.		2 Coast. waters

Baseline: Providing assistance to states and coastal waters for identifying priority watersheds for nutrient reduction, selecting point and nonpoint source controls to be implemented in priority watersheds, and supporting monitoring programs for nutrients and pathogens are all new initiatives for FY2000; thus as of September 1998, no states nor coastal waters had been provided such assistance. There are 5 Gulf states.

Gulf of Mexico: Nonpoint Sources

In 2000 Reduce the number of nonpoint sources contributing to the total load of fecal contamination and nutrients in 2 targeted Gulf watersheds.

In 1999 Reduce the number of nonpoint sources contributing to the total load of fecal contamination and nutrients in Gulf waters, in two priority Gulf coastal watersheds.

Performance Measures	FY 1999	FY 2000
Priority watersheds that EPA assisted Gulf States in actions completing watershed assessments and supporting TMDLs.		2 Watersheds
Gulf watersheds with State actions to reduce NPS loads to Gulf growing waters.	2 Watersheds	

Baseline: As of September 1998, EPA provided assistance to Gulf States to complete assessments of 2 watersheds.

Gulf of Mexico: Seagrass Restoration

In 2000 Assist in implementing seagrass restoration efforts in Gulf coastal estuaries.

In 1999 Initiate the development of marine conservation plans for Gulf Coast seagrasses in all 5 Gulf States.

Performance Measures	FY 1999	FY 2000
Gulf states with marine conservation plans for seagrasses.	5 States	
Coastal estuaries that EPA assisted in implementing seagrass restoration projects.		5 Estuaries

Baseline: Assisting in implementing seagrass restoration efforts in Gulf coastal estuaries is a new initiative for FY2000; thus, as of September 1998, no estuaries had been provided assistance.

Dredged Material/Ocean Disposal

In 2000 Appropriate action taken with regard to dredeged material ocean disposal site designation in one additional case.

In 1999 Appropriate action with regard to dredged material ocean disposal site designation in one additional case. (Base of 77)

Performance Measures	FY 1999	FY 2000
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: Appropriate actions have been taken with regard to dredged material ocean disposal designation sites in 77 cases as of September 1998.

Clean Water Action Plan: Priority Watersheds

In 2000 Environmental improvement projects will be underway in 350 high priority watersheds as a result of implementing activities under the CWAP.

Performance Measures	FY 1999	FY 2000
High priority watersheds in which environmental improvement projects are underway as a result of implementing activities under the CWAP.		350 Watersheds

Baseline: Through their Unified Watershed Assessments, states have identified 815 high priority watersheds. One major facet of restoration and protection work will be nonpoint source efforts. To measure progress against this goal, EPA will track the number of watersheds receiving the additional CWA Section 319 grant funds provided under the CWAP. The first of these funds are being awarded in FY99 so the current baseline for this goal is zero.

Assess, Monitor, and Restore Wetlands

In 2000 EPA will provide financial/technical support to States & Tribes to develop/implement statewide/tribal-nationwide programs to assess and monitor overall wetland health & for projects that restore wetlands within the development or implementation of watershed-based restoration/improvement plans.

In 1999 16 (cumulative number) States/Tribes developing assessment/monitoring tools and making significant progress towards establishing statewide/tribal-nationwide programs to assess and monitor overall wetland improvements/deterioration (Base of 11).

Performance Measures	FY 1999	FY 2000
States/tribes develop. wetlands assess./monitoring tools & making significant progress towards est. formal programs to assess and monitor overall wetland cond., improve., deterior., & restor..		21 States/tribes
Within the devel. or implem. of watershed-based rest./improve. plans, the # of wetland rest. proj. to which EPA has prov. finan. support (other than Five-Star Projects)/contrib. sig. tech. assist.		65 Projects
States/Tribes developing assess./monitoring tools and making sig. progress towards estab. statewide/tribal-nationwide programs to assess wetland improvement/deterioration.	16 States/Tribes	

Baseline: As of September 1998, EPA provided technical and financial support to 11 states/tribes to develop the technical bases and programs to assess and monitor overall wetland health. Providing funding for wetland restoration projects that are implemented under watershed-based restoration/improvement projects is a new initiative; thus as of September 1998, other than Five Star Projects, EPA has provided financial support for 0 such projects.

Wetland and River Corridor Projects

In 2000 Working through the Five Star Program, EPA will have cooperated on and supported wetland and river corridor projects in a total of 210 watersheds (Supports CWAP).

In 1999 EPA will provide funding to restore wetlands and river corridors in 30 watersheds that meet specific "Five Star Project" criteria relating to diverse community partnerships (for a cumulative total of 44 watersheds).

Performance Measures	FY 1999	FY 2000
Watershed-/community-based wetlands/river corridor restoration projects funded by EPA's Five Star Program. (Cumulative total)	44 Projects	210 Projects

Baseline: As of September 1998, EPA cooperated on and supported 14 wetland and river corridor projects through the Five Star Program. The Five-Star Restoration Challenge Grant Program is an outgrowth of the President's Clean Water Action Plan. The program is open to any public or private entity and provides modest financial assistance to support community-based wetlands/riparian restoration projects and locally-based, natural resource stewardship.

Research

Scientific Rationale for Surface Water Criteria

In 2000 Develop the scientific rationale for numerical criteria for surface waters.

Performance Measures	FY 1999	FY 2000
Develop a research strategy for development of numerical criteria for surface waters.		09/30/2000

Baseline: Performance Baseline: It is important to understand the nutrient requirements of harmful algal species in order to address the problem of algal blooms. Development of "formal" baseline information for EPA research is currently underway.

Peer Review for Water Quality Criteria

In 2000 Peer review the concept of risk-based criteria for water quality criteria.

In 1999 Risk Management of Contaminated Sediments

Performance Measures	FY 1999	FY 2000
Report for external peer review associating tissue levels and effects of dioxin-like compounds in wildlife.		1 report
Development of a framework for deriving water quality criteria for protection of wildlife		09/30/2000
Completion of methods to determine toxicity of contaminated sediments to aquatic animals and vascular plants.		09/30/2000 methods

Baseline: Performance Baseline: There is a need to develop a scientifically defensible risk-based methodology for deriving water quality criteria. Development of "formal" baseline information for EPA research is currently underway.

Surface Water Life Support Function Identification

In 2000 Identify the primary life support functions of surface waters that contribute to the management of sustainability of watersheds.

Performance Measures	FY 1999	FY 2000
Research strategy document to determine the impact of landscape changes on wetland structure and function.		1 strategy

Baseline: Performance Baseline: Research is needed to improve our understanding of the factors that affect ecosystem sustainability. Development of "formal" baseline information for EPA research is currently underway.

Conceptual Framework for Water Quality Impairment

In 2000 Develop a conceptual framework for the diagnosis and assessment of water quality impairment in U.S. watersheds.

In 1999 EPA will provide data and information for use by states and regions in assessing and managing aquatic stressors in the watershed, to reduce toxic loadings and improve ecological risk assessment.

In 1999 Methods for Screening Aquatic Systems

Performance Measures	FY 1999	FY 2000
Report on the requirements of submerged aquatic vegetation in coastal environments.	30-SEP-1999	
Develop and provide a research strategy for integrating economic assessment with ecological risk assessment of multiple aquatic stressors applied at two locations.	30-SEP-1999	
Complete Big Darby Watershed Risk Assessment.		1 assessment
Complete guidance document on acquiring data for conducting watershed analyses for multiple stressors and receptors.		1
Complete report on an assessment of the viability of natural attenuation as an option for the risk management of contaminated sediments.		1 assessment

Baseline: Performance Baseline: There is a need to move toward a more holistic approach to watershed management through the development of diagnostic tools. Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures

The measure of designated use-support for assessed waters depends on data provided to EPA pursuant to Clean Water Act Section 305(b). This requires each state, territory, interstate water commission, the District of Columbia and participating Tribes to develop a program to monitor the quality of its surface and ground waters and prepare a report describing the status of its water quality.

EPA provides guidance to help ensure the quality of data submitted. With the assistance of the states, participating tribes, and other jurisdictions, EPA will update national guidance (scheduled for the fall of 1999) for the 2000 Section 305(b) report submission. This guidance delineates the water quality elements for update, as well as provides direction to ensure consistency and comparability of the water quality monitoring and assessment data. While state 305(b) assessments provide an adequate representation of individual states' water quality conditions, the Agency recognizes that differing processes and methods among states can result in varying depictions of the nation's water quality. The Agency intends to address this issue in early 1999 by convening a national 305(b) consistency workgroup. The Water Body System (WBS) defines and tracks the data elements at the water body level and summarizes at various scales. The WBS provides coding guides with technical instructions for data users. The guidance describes annual electronic protocols for submission of the water quality data.

Some performance measures are expressed as the completion of explicit tasks. Verification of these measures will require the objective assessment of completed tasks by program staff and management. Those measures for which data verification and validation are not at issue include: number of states electronically submitting 305(b) information; completed CCMPs; number of states with marine debris monitoring programs; number of states submitting 303(d) lists; number of TMDLs scheduled for completion; completion of the Watershed Restoration Progress Report; number of ocean disposal site designation actions; number of states developing wetlands health assessment programs; and number of wetlands/river corridor restoration projects supported.

Performance measures in the Chesapeake Bay Program are verified through direct monitoring or through requirements of state grants, i.e., grant deliverables. For example, the number of submerged aquatic vegetation (SAV) acres in the Bay is measured directly by aerial photography and photo interpretation via a grant and scope of work with explicit guidelines for collection of the photography. Similarly, the number of oyster reef acres is accomplished and verified through restoration grants requirements for follow-up monitoring. The remaining performance measures are monitored by the respective states agencies and reported as grant deliverables. All data must be documented according to the requirements in the Chesapeake Bay Grant and Interagency Agreement guidance which provides detailed QA/QC procedures for both data collection and submission.

The Gulf of Mexico Program's performance evaluation process adheres to the Quality Assurance/Quality Control Plan of the Office and those of the participating Federal departments and agencies. Additionally, the Gulf Program has organized a Scientific Review Committee of regional experts (both public and private) that assist in the review and verification of the environmental analyses and performance evaluations administered by the Program.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of

assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

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 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 Corps of Engineers (COE), an interagency group on wetlands will issue a final plan for developing a single, improved wetlands status and trends report.

Developing and 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 (CREES), 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), NOAA, and the Food and Drug Administration. 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 the U.S. 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 US 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.

In addition, under the Endangered Species Act, EPA is required to consult with the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) on actions that may affect endangered species. (EPA is in the process of developing a joint research plan for research and development of criteria for endangered species.)

The issue of eutrophication, hypoxia, and harmful algal blooms is a priority with the Committee on Environment and Natural Resources (CENR). A planning effort has been initiated to develop an interagency research strategy for pfiesteria and other harmful algal species. This CENR committee is also coordinating the research efforts among federal agencies to study nutrients and hypoxia in the Gulf.

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)

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 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Loadings and Air Deposition	**$1,487,800.9**	**$1,986,478.7**	**$1,160,583.1**	**($825,895.6)**
Environmental Program & Management	$127,453.8	$133,781.6	$123,891.1	($9,890.5)
Science & Technology	$7,347.1	$8,376.1	$8,692.0	$315.9
State and Tribal Assistance Grants	$1,353,000.0	$1,844,321.0	$1,028,000.0	($816,321.0)
Total Workyears:	887.3	899.0	890.2	(8.8)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Rural Water Technical Assistance	$1,456.0	$3,095.0	$456.0
Effluent Guidelines (CWAP)	$23,715.9	$22,365.8	$23,193.0
NPDES Program (CWAP)	$43,408.5	$35,142.8	$46,338.8
State Nonpoint Source Grants (CWAP)	$200,000.0	$200,000.0	$200,000.0
National Nonpoint Source Program Implementation (CWAP)	$15,076.0	$15,476.7	$15,198.8
Clean Water Action Plan-Related Research	$0.0	$0.0	$213.4

Key Programs (continued)	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Water Infrastructure:Clean Water State Revolving Fund (CW-SRF)	$1,075,000.0	$1,350,000.0	$800,000.0
Water Infrastructure: Alaska Native Villages	$15,000.0	$30,000.0	$15,000.0
Water Infrastructure:Boston Harbor	$50,000.0	$50,000.0	$0.0
Water Infrastructure:Bristol County	$3,000.0	$2,610.0	$3,000.0
Water Infrastructure:New Orleans	$10,000.0	$6,525.0	$10,000.0
Watershed Research	$7,347.1	$8,376.1	$8,692.0
Sustainable Development Challenge Grants*	$2,015.0	$0.0	$0.0
Urban Environmental Quality and Human Health	$814.7	$0.0	$0.0
Project XL	$173.7	$173.7	$175.4
Common Sense Initiative	$1,338.5	$0.0	$960.9

* Effective in the FY 1999 Enacted budget process, resources for the Sustainable Development Challenge Grants were transferred to Goal 8.

FY 2000 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, 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 projects 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 proposal to allow States to reserve up to an amount equal to 20% 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 program and expects to issue final regulations to streamline the administrative and procedural requirements of the 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 two major industrial sectors: coal mining and swine and poultry feeding operations. EPA will promulgate final effluent guidelines for additional subcategories of the pulp and paper industry as well as for landfills, industrial waste combustors, and the transportation equipment cleaning 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 begin to develop 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, 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 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 and will achieve a major milestone for the National Water Program. By the end of 2000, the Agency expects to begin implementing the new regulations to control storm water from small municipalities and construction sources, to have approximately 900 Combined Sewer Overflow (CSO) communities covered by NPDES permits and implementing controls based on EPA's CSO policy, and to issue an Storm Sewer Overflow (SSO) policy and modification of the NPDES regulations to clarify reporting requirements and prohibition on SSO discharges.

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 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. The Agency

is developing a multi-year strategy to address how it will minimize environmental and public health impacts from AFOs over the next decade and beyond. By the end of 2000, the Agency expects to issue permits for all concentrated animal feeding operations (CAFOs), as defined by the Unified AFO Strategy, for which EPA is the permitting authority.

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. Many streams and much ground water have been seriously affected by abandoned mines, in particular abandoned coal mines in the eastern United States, and 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 screening upcoming mining Environmental Impact Statements to determine priorities for agency involvement.

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 has tripled over the past 10 years; and the backlog in State issued permits has 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 will focus permitting activities on those facilities posing the greatest risk to the environment, such as facilities discharging into high priority watersheds, discharging at high volumes, or discharging toxic pollutants or other pollutants of concern.

Other high priority activities during 2000 will include continued implementation of the pulp and paper rule; development of proposed regulations for cooling water intakes (rules currently subject to court order); and a revitalization of the Whole Effluent Toxicity program.

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 2000, the Agency is requesting $800,000,000 in capitalization grants to the Clean Water State Revolving Fund. Combined with the Drinking Water SRF request (discussed in Objective 1 of this Goal) and out year capitalization, this level enables both SRFs to meet the Administration's long-term goal for providing $2.5 billion per year in funding assistance. The CWSRF is expected to provide about $2 billion of this amount. In 2000, the Agency will continue to capitalize the CWSRF that already has about $16 billion in capitalization grants, or almost 90% more than originally authorized by Congress. As such, the Agency expects that 30 state CWSRF programs will meet or exceed threshold measures for the appropriate pace of program implementation including loan issuance, construction progress, and loan repayments.

To further support the objectives of the Clean Water Action Plan, the Agency proposes for 2000 to allow states to reserve up to an amount equal to 20% of their Clean Water State Revolving Fund capitalization grants to provide grants of no more than 60% of the costs of implementing nonpoint source and estuary management projects. Such grant funds may not be used for publicly-owned treatment works 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). These grants may also be combined with loans for communities with eligible projects which might otherwise find loans unaffordable.

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 closed-out all but 107 projects. The program also provides grant assistance for environmental improvements to Alaska Native Villages and Indian Tribes, and the program manages grant assistance for wastewater treatment projects with special needs as requested by the President and as identified by Congress.

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 direct NPS authority under the Clean Water Act, state NPS programs are critical to our overall success. 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. EPA will award NPS monies exceeding the first $100,000,000 of the $200,000,000 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; within this objective $200,000,000 is for direct grant assistance to states and tribes. 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 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 recognizes that better performance goals are needed to measure nonpoint source loadings. In 1999, EPA will work with Federal and state agencies to develop both near term and long term environmental outcome measures for nonpoint source loadings reductions.

Tribal participation in the Nonpoint Source Control Program under CWA section 319(h) is 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. Currently, 20 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 (23 tribes are working to become program eligible). Due to this increasing demand on the severely limited pool of tribal grant funds, EPA proposes to 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.

As part of the Clean Water Action Plan, EPA (in coastal areas working with NOAA) will increase efforts to promote the establishment of state authorities, by October 2000, 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 publish guidance describing existing and potential models of enforceable authority related to polluted runoff and will assist states in this effort. As part of this increased effort, 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, states will be working with public and private sector agencies and organizations and citizens to develop Watershed Restoration Action Strategies for watersheds most in need of attention in the 1999-2000 period. Clean Water Act 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. 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 many 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. Fossil fuel utility boilers and increased transportation demands associated with urban and other land development increases air deposition loads. In 2000, the Agency will use updated emissions inventories of some persistent bioaccumulative toxic chemicals (PBTs) and nitrogen compounds (NOx) and, using updated meteorological data, run appropriate model(s) to estimate transport and deposition of the PBTs onto regional watersheds and estuarine systems across the U.S. The Agency will develop methodologies that may be used by states, tribes, and EPA to develop TMDLs for these PBTs and NOx compounds and will make available deposition data that can be used with BASINS models and the methodologies for routine TMDL assessments.

Research

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 Flows (WWFs) dischargers is one of the key priority areas remaining to assure clean water and safe drinking water. EPA, in its March 1995 Report to Congress on stormwater discharges, cited pollution from Wet Weather Flows as the leading cause of water-quality impairment. 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. EPA will continue to develop diagnostic tools to evaluate exposures to toxic constituents of WWFs, and 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.

The Agency will continue to develop and validate effective, less costly technologies and approaches for use by local decision makers involved in community-based watershed management and pollution control to treat high volume and toxic WWF discharges. To reduce capital investments needed to retrofit and enlarge the existing wastewater treatment plants (WWTPs), the search for suitable WWF treatment technologies is directed toward high-rate operations that can handle maximum loadings. A variety of high-rate treatment methods show a potential to handle WWFs, though a majority of them still need to be demonstrated at full scale. This research will also emphasize pollution prevention strategies, primarily through the investigation of best management practices (BMPs) to avoid or minimize the generation of WWF contaminations. In 2000, EPA will link urban stormwater management models to a geographic information system, allowing states and communities to better characterize the quality of their local water bodies by using stormwater management models of their own local geographic information.

There is 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 2000, the Beaches Environmental Assessment, Closure and Health (BEACH) 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. 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.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$8,252,300 and 1.7 total workyears) To support development of the NPDES final Rule and guidance for CAFOs, issue permits for CAFOs and other priority facilities where EPA is the permitting authority, and provide assistance to Regions and states in modifying programs as well as increases for implementation of the forest roads pilot project, support to states for watershed activities, and the pretreatment program.

- (+$515,000 and 3.5 total workyears) To provide technical assistance and guidance to Tribes in managing water program activities under Section 106 grants.

- (+$1,763,200 and 2.4 total workyears) To support the expansion of a mining initiative aimed at characterizing and remediating surface and ground water contamination resulting from mineral extraction.

- (+$663,600 and 1.3 total workyears) for the urban wet weather program to support finalization of regulations and policy and development of implementation guidance.

- (+$1,538,800) for the development of effluent limitations guidelines and assure that the Agency meets its commitments under the consent decree with NRDC. Resources will also be redirected within the effluent guidelines program to support the multi-media Air Toxics Cluster Rule proposal.

- (+$416,500) for efforts to incorporate air deposition of pollutants into modeling tools like BASINS and support the development of TMDLs nationwide.

- (+$2,283,200) Provides support for the CWSRF as well as support to the Corp of Engineers for close-out of construction grants and management of Mexico Border and special projects.

- (-$1,000,000) from low-priority Small Flows Clearinghouse. This reduction will curtail some outreach, data collection, and technical assistance activities of the organization.

- (-$1,267,900 and -13.2 total workyears) From the Municipal Water Pollution Prevention Program. This reduction to Regional office resources reflects completion of this effort to assist states to adopt and operate the program. The Municipal Water Pollution Prevention program was designed as a voluntary, state-based program to encourage municipalities to implement a variety of pollution prevention activities and maintain municipal wastewater treatment facility permit compliance.

- (-$29,100) Reflects a shift to establish a permanent Agency system modernization fund to improve management of system modernization needs to meet the Reinventing Environmental Information (REI) commitment and other mission needs on a multi-year planned basis.

- The 2000 Request is $20,089,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

STAG

- (-$550,000,000) 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, almost $16 billion has been provided in capitalization grants, or almost 90% more than originally authorized by Congress. This amount, combined with state matching and leveraging, has allowed the SRFs to provide nearly $23 billion in financial assistance to date.

- (-$15,000,000) from Alaska Native Villages which is consistent with the FY 1999 request. The Agency believes this to be the level of funding which can be most effectively utilized by the State of Alaska, and therefore does not request funding at the FY 1999 appropriation level.

- (-$50,000,000) from Boston Harbor which reflects fulfillment of the Administration's commitment. The Administration provided a total of $475 million since FY 1994 to help clean up Boston Harbor.

- (+$3,475,000) for the city of New Orleans to support planning, design, construction and other activities related to unique problems in the city's sewer system.

- (+$390,000) which supports the Administration's commitment to Bristol County, Massachusetts.

- The 2000 Request is $204,936,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

Research

S&T

- (+$54,000 and +1 workyear) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Secondary Treatment of Wastewater

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 will receive the benefits of secondary treatment of wastewater, for a total of 179 million.

Performance Measures	FY 1999	FY 2000
Additional people who will receive the benefits of secondary or better treatment of wastewater	3.4 M People	2 M People

Baseline: In July 1998, 175.5 million people were receiving secondary treatment of wastewater according to data developed from EPA's Clean Water Needs Survey Database and the Permits Compliance System.

Biosolids and Beneficial Reuse

In 2000 54% of biosolids are beneficially reused.

In 1999 50% of biosolids are beneficially reused.

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

Baseline: An estimated 45% of biosolids were being beneficially reused as of September 1996.

Toxic and Conventional Industrial Pollutant Discharges

In 2000 Industrial discharges of toxic pollutants will be reduced by 4 million pounds per year (a 14% reduction) and conventional pollutants will be reduced by 388 million pounds per year (a 9% reduction) as compared to 1992 discharges when considerations for growth are considered.

Performance Measures	FY 1999	FY 2000
Reduction in loadings in PCS for conventional pollutants for facilities subject to effluent guidelines promulgated prior to 1998, as compared to 1992 levels.		388 Million Pounds
Reduction in loadings in PCS for toxic pollutants for facilities subject to effluent guidelines promulgated prior to 1998, as compared to 1992 levels.		4 Million Pounds

Baseline: EPA is working to establish the 1992 baseline from data in the Permits Compliance System (PCS). Current data on loadings are incomplete for some point soruces. EPA will augment its data with modeling while it collects more and better information on pollutant loading reductions throughout 1999.

NPDES Permit Requirements

In 2000 Major point sources, storm water sources, combined sewer overflows (CSOs), new hardrock mines, and concentrated animal feeding operations (CAFOs) requiring NPDES permits are covered by a current NPDES permit.

In 1999 All permittees among the approximately 900 CSO communities are covered by permits or other enforceable mechanisms consistant with the 1994 CSO policy.

In 1999 Development of a national inventory of AFOs and estimates of pollutant loadings.

In 1999 Quantify the number of AFOs which are currently permitted by EPA and states and the extent the permits include manure management requirements.

In 1999 More than 220 communities will have local watersheds improved by controls on combined sewer overflows and storm water.

In 1999 All storm water sources associated with industrial activity, construction sites over 5 acres, and designated storm water sources will be covered by current NPDES permits.

In 1999 An assessment of necessary elements of a comprehensive general permit will be developed to aid Regions and States to issue permits to concentrated animal feeding operations.

In 1999 80% of major point sources will be covered by current NPDES permits.

Performance Measures	FY 1999	FY 2000
NPDES permits issued for new hardrock mines that require Environmental Impact Statements that reflect adequate financial assurances to mitigate long-term environmental impacts.		100 % Permits-mines
Expired NPDES permits that are reissued to cover CAFOs as defined by the Unified AFO Strategy, where EPA is the permitting authority.		100 % Permits-CAFOs
Permittees (among the approximately 900 CSO communities nationwide) that are covered by NPDES permits or other enforceable mechanisms consistent with the 1994 CSO policy.	100 % permittees	100 % permittees
Completion of AFO documents	1 Document	
Inventory of Animal Feeding Operations/estimate loadings	1 Inventory	
Quantity of AFOs which are permitted	1 List	
Communities that will have local watersheds improved by controls on CSOs and stormwater	220 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
Major point sources that have a current NPDES permit.	80% Maj. Pt. Source	85 % Maj. Pt. Source
Storm water sources assoc. with indust. activity, construction sites over 5 acres, and desig. storm water sources (incl. municipal Phase I) that are covered by a current indiv. or gen. NPDES permit.	100 % SW sources	100 % SW sources

Baseline: By June 1998, permits for 585 of 900 CSO communities were based on EPA's 1994 CSO policy. As of March 1998, 72% of major point sources were covered by a current NPDES permit (PCS data is current review to improve data quality. This reveiw is likely to result in a change to this baseline in FY00 targets). As of January 1992, 1,900 CAFOs were covered by permit nationwide; determining the number of expired permits is part of the CAFO strategy. By March 1999, EPA will begin semi-annual reporting of storm water sources associated with industrial activity, construction sites over 5 acres, and designated storm water sources covered by a current NPDES permit. By January 2000, EPA will establish semi-annual reporting for NPDES permits issued for new hardrock mines.

Colonias Project Completion/Construction

In 2000 45 colonias projects will have been completed or under construction.

In 1999 30 colonias projects will have been completed or under construction.

Performance Measures	FY 1999	FY 2000
Colonias projects completed/under construction	30 Projects	45 Projects

Baseline: 34 colonias projects were completed or under construction as of July 1, 1998.

Construction Grant and Special Project Closeout

In 2000 Expedite the closeout of Clean Water Act Title II (construction grants) projects and special project State and Tribal Assistance Grants (STAG).

In 1999 All but 267 of the remaining construction grants projects will be closed out.

Performance Measures	FY 1999	FY 2000
Construction grants projects (both those awarded before FY92 and after FY91) remaining to be closed out.	267 Projects	107 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. Special project STAG grants were first established in 1994. As of September 1998, none of these grants had been closed out.

Effluent Guidelines

In 2000 Take final action on 4 and propose 2 effluent guidelines limitations for industrial categories that contribute significantly to pollution of surface waters.

In 1999 Take final action on one and propose two effluent guidelines limitations for industrial categories that contribute significantly to pollution of surface waters.

Performance Measures	FY 1999	FY 2000
Effluent guidelines proposed or promulgated	1/2 Rules	2/4 Rules

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

Pretreatment Program Audits

In 2000 Audit all approved pretreatment programs over a five year period.

In 1999 Audit all approved pretreatment programs over a 5-year period.

Performance Measures	FY 1999	FY 2000
Approved pretreatment programs audited in the last 5 years.	100 % programs	100 % programs

Baseline: Annual PCS data shows that 1,535 pretreatment programs were audited as of September 1997. On average, 20% of these programs are audited per year resulting in 100% of programs being audited over 5 years.

Clean Water State Revolving Fund: Annual Assistance

In 2000	Effectively implement the Clean Water State Revolving Fund (CW SRF) program to ensure annual assistance of approximately $2 billion.
In 1999	26 states meet or exceed "pace of the program" measures for loan issuance and pace of construction
In 1999	38 states and Puerto Rico conduct seperate annual audits of their SRFs

Performance Measures	FY 1999	FY 2000
States that meet or exceed "pace of the program" measures for loan issuance and pace of construction.	26 States	30 States
States and Puerto Rico that conduct separate annual audits of their CW SRFs	38 States	42 States
States and PR that are submitting all of the information required for the SRF Information System thus showing effective use of SRF funds to protect and restore the quality of our nation's waters.		51 States & PR

Baseline: As of July 1998, 39 states/territories were conducting separate annual audits of their SRFs and utilizing fund management principles. As of June 1997, 25 states were meeting the "pace of the program" measures for loan issuance, pace of construction, and use of repayments. Note: Target for FY99 for annual audits of SRFs was erroneously input at 51. The actual target for FY99 is 38 states/territories. Annually, 51 states and PR submit the information required for the SRF Information System.

Clean Water State Revolving Fund: Water Quality

In 2000	Effectively implement the Clean Water State Revolving Fund (CW SRF) to improve water quality (Supports CWAP).
In 1999	15 states are using integrated priority setting systems to make SRF funding decisions
In 1999	Initiate operations at a total of 4,201 SRF projects
In 1999	26 states are funding nonpoint source and estuary projects with their SRFs

Performance Measures	FY 1999	FY 2000
States funding nonpoint source and estuary projects with their CW SRFs.	26 States	30 States
CW SRF projects that have initiated operations.	4,201 SRF projects	5,000 SRF projects
States that are using integrated planning and priority systems to make CW SRF funding decisions.	15 States	20 States

Baseline: The Agency's National Information Management System shows 3,154 SRF projects initiated as of June 1997. As of September 1998, 8 states were using integrated planning and priority systems to make SRF funding decisions and 24 states were funding nonpoint and estuary projects with their SRFs.

Improving Wastewater Sanitation in Indian Country

In 2000 Reduce the number of homes in Indian Country with inadequate wastewater sanitation systems by 6% through funding from the Clean Water State Revolving Fund Tribal Set Aside Program.

Performance Measures	FY 1999	FY 2000
Reduction in the number of homes in Indian Country with inadequate wastewater sanitation systems that were funded from the CW SRF Tribal Set Aside Program.		6 % Homes

Baseline: Annual reporting by EPA and the Indian Health Service begins in FY 1998. A baseline will be established in FY 1999.

Wastewater Treatment Facility Compliance

In 2000 Through assistance under Clean Water Act Section 104(g), 699 wastewater treatment facilities are prevented from going into CWA non-compliance or assisted in moving toward compliance.

Performance Measures	FY 1999	FY 2000
Wastewater treatment facilities prevented from going into CWA non-compliance or assisted in moving toward compliance through assistance under CWA Section 104(g).		699 WW facilities

Baseline: In 1998, 999 facilities were assisted to improve, maintain, or achieve compliance.

Non-Conventional Industrial Pollution Discharges

In 2000 Industrial discharges of non-conventional pollutants will be reduced by 1.5 billion pounds per year (a 7% reduction) as compared to 1992 discharges when considerations for growth are considered.

Performance Measures	FY 1999	FY 2000
Reductions in loadings in PCS for non-conventional pollutants for facilities subject to effluent guidelines promulgated prior to 1998, as compared to 1992 levels.		1.5 Billion Pounds

Baseline: EPA is working to establish the 1992 baseline from PCS data in the Permits Compliance System (PCS). Current data on loadings are incomplete for some data sources. EPA will augment its data with modeling while it collects more and better information on pollutant loading reductions throughout 1999.

Nonpoint Source Program Upgrades

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, 10 additional states will 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.

Performance Measures	FY 1999	FY 2000
States & territories that have an upgraded NPS program (incorporating the 9 key elements outlined in national grant guidance), thereby ensuring implementation of an effective program.	10 States	45 States

Baseline: In 1998, 2 states upgraded their nonpoint source programs.

Air Deposition

In 2000 Integrate and expand coastal air and water monitoring sites; e.g., expand the geographic areas for which measurements of total nitrogen deposition are available. (Supports CWAP)

Performance Measures	FY 1999	FY 2000
Coastal National Atmospheric Deposition Program/Clean Air Status and Trends Network sites.		7 Sites

Baseline: As of August 1998, 0 coastal monitoring sites were established.

Verification and Validation of Performance Measures

Performance data related to NPDES permits will be tracked largely through the Agency's Permit Compliance Systems (PCS) database which is managed by the Office of Enforcement and Compliance Assurance (OECA). Data is entered into PCS by the Regions, states and tribes. Regions, states and tribes have entered extensive information about permittees such as effluent limits, discharge monitoring report measuring data, compliance schedules, and so on, and this information can be used as a baseline. Data entered into this system by the Regions and states and tribes is subjected to data entry quality assurance (QA) procedures to verify that the information is consistent with facility-provided information. Quality assurance of facility-provided information is provided by OECA through programs such as facility inspections. PCS offers EPA, state and tribal managers an effective tool to validate the effectiveness of our performance in meeting these goals and measures. The system includes additional QA features related to discharge data, including software capable of rejecting gross data input errors, and Quality Management Plans with data criteria. Performance data on CWSRF management will be compiled by EPA's Regional offices through interaction with the states. A limitation on the use of PCS is that it is not very user-friendly, because it was developed a decade ago. However, the database is in the process of being updated to make it more user-friendly, and to make it available to anyone who wants to use the system, not just EPA, states, and tribes.

The Agency's progress toward the goal of clean and safe water can be measured in part by the extent to which point source and nonpoint source (NPS) pollutants are discharged into the

Nation's waters. Our longer-term measurement of NPS discharges will involve analyses of current versus baseline loading estimates conducted by the U.S. Geological Survey and the Department of Agriculture. Since states are the primary implementers of NPS programs and policies, the extent to which states have upgraded their nonpoint source programs to reflect recent guidance will serve as an effective surrogate for measuring progress toward our NPS reduction targets. State program upgrades will be measured by evaluating each state's explicit short - and long-term goals and objectives and their associated indicators that demonstrate progress. EPA will conduct reviews and evaluations of the nonpoint source documents submitted by state agencies describing the nine key elements required to upgrade their nonpoint source management programs. In addition, the Agency will increase emphasis on monitoring and assessment of nonpoint source impacts in order to ensure achievement of long-term goals and objectives.

Each of the NPDES goals/objectives is based on results expected from the successful implementation of program requirements. The goals/objectives are indicators of NPDES performance and are of high quality. However, the pollutant loading reduction goal is based on estimates of removal to be achieved through the implementation of new effluent limitation guidelines for industrial discharges. This goal assumes that the new guidelines are included in the permits to which they are applicable. At this point we do not have a full data set supporting this assumption, and must use modeling and sampling to verify that we are meeting the targets.

Data on the promulgation of effluent guidelines and support for existing technology based standards is collected through internal tracking processes in the Agency organizations where the work is performed (no outside reporting is involved for these measures).

Data to support EPA figures for the number of people being served nationally by treatment of wastewater to secondary treatment standards are developed from the Permits Compliance System (PCS) and Clean Water Needs Survey Databases.

Data on the effective functioning of the Clean Water State Revolving Fund (CWSRF) Program are collected largely through state entries into the National Information Management System electronic database. Performance data on CWSRF management will be compiled by EPA's Regional offices through interaction with the states. Additional data collection and quality control reviews are accomplished through annual EPA Regional reviews of state programs, including financial audits performed by Certified Public Accountants, and annual EPA Headquarters reviews of Regions.

Data on the agency goal to reduce the number of homes in Indian Country with inadequate wastewater sanitation systems, through funding from the CW SRF Tribal Set Aside Program, comes from the Indian Health Service (IHS) automated Sanitation Deficiency System (SDS.) This information is reported annually by the IHS 12 Area Offices to the national SDS system. IHS provides summary reports on EPA-funded wastewater treatment projects to EPA Headquarters and Regional Offices. IHS asserts that, annually, at two levels in the organization, it reviews all data for uniformity of reporting and project scoring before submitting it to EPA.

Data measuring the effective functioning of the Colonias Assistance Program are collected via quarterly reporting by EPA Region 6, based on reports from Texas and New Mexico. Data Quality Assurance in Texas is performed by the Texas Water Development Board via periodic Colonia inspections and reports to EPA Region 6. The New Mexico Environment Department reviews the quality of its Colonias data before reporting to EPA Region 6.

Data on the effective functioning of the Biosolids Beneficial Reuse Program have in past years been collected via the Permits Compliance System which is maintained for other purposes. The agency has now developed the Biosolids Data Management System (BDMS) to provide the information needed. BDMS is designed to permit data entry by local wastewater/biosolids management agencies; however, states and EPA Regional offices will initially enter most data. BDMS is equipped with internal checks and controls to flag and reject inaccurate and inconsistent data.

Data on the effective progression of the closeout of Clean Water Act Title II (construction grants) projects and special project STAG grants are collected via semi-annual reporting by EPA Regional Offices, supported by periodic EPA Headquarters reviews of Regions. Quality Assurance/Quality Control of data is performed through a virtually continuous EPA Headquarters review of progress via cross-checks of required regular and ad-hoc reporting, and via Headquarters visits and calls to Regional offices.

Data on the effectiveness of the assistance provided, as authorized under Section 104(g)(1) of the Clean Water Act, to wastewater treatment facilities to prevent them from going into non-compliance or returning them to compliance, are collected via semi-annual reporting by EPA Regional offices to EPA Headquarters.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The

BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

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 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 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 to develop a joint unified strategy to minimize the water quality and human health impacts that can be caused by animal feeding operations. This joint strategy is among the key actions in the Clean Water Action Plan. The draft strategy was released on September 16, 1998. USDA and EPA have since held 12 national listening sessions. The final strategy is expected in FY 1999.

Clean Water State Revolving Fund (CWSRF)

EPA's SRF program, HUD's Community Development Block Grant, 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 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. EPA is also conducting an analysis to identify barriers in the environmental review process so as to foster development of one environmental review per project which meets the needs of all agencies involved.

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, US EPA has made broad use of the Indian Health Service to administer most of these grant funds to the various Indian Tribes, including determination of the priority ranking system for the various wastewater needs in Indian Country.

In 1998, US EPA and the Rural Utilities Service (RUS) of the US 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, US EPA and the delegated States have made broad use of the construction expertise of the Corps of Engineers (Corps) 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 by at least 20 percent from 1992 levels. Most significantly, EPA will continue to work with the U.S. Department of Agriculture, 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 Compliance Program. 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.

Research

Research addressing the ecosystem effects of Wet Weather Flows 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 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 American Society of Civil Engineers Urban Water Resources Research Council, EPA's Sanitary Sewer Overflow (SSO) Advisory Committee and Urban Wet Weather Flow Subcommittee, and numerous other organizations involved with WWF research to improve coordination and minimize duplication.

Statutory Authorities

Clean Water Act
Clean Air Act
Coastal Zone Act Reauthorization Amendments of 1990
Safe Drinking Water Act
Toxic Substances Control Act

Goal 3: Safe Food

Goal 3: Safe Food III-1
Reduce Agricultural Pesticides Risk III-9
Reduce Use on Food of Pesticides Not Meeting Standards III-17

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Safe Food

Strategic Goal: The foods Americans eat will be free from unsafe pesticide residues. Children especially will be protected from the health threats posed by pesticide residues, because they are among the most vulnerable groups in our society.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Safe Food	**$65,205.9**	**$67,546.4**	**$78,583.2**	**$11,036.8**
Reduce Agricultural Pesticides Risk	$26,477.5	$29,139.0	$30,830.1	$1,691.1
Reduce Use on Food of Pesticides Not Meeting	$38,728.4	$38,407.4	$47,753.1	$9,345.7
Total Workyears:	692.0	702.4	712.2	9.8

Background and Context

The U.S. Environmental Protection Agency (EPA) plays a major role in the lives of all Americans by ensuring that agricultural use of pesticides will not result in unsafe food. EPA accomplishes this by working to protect human health and the environment from risks associated with agricultural pesticide use, while ensuring that exposure from any individual agricultural pesticide use will not, with reasonable certainty, cause harm.

EPA regulates pesticides under two main statutes: the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Federal Food and Drug Control Act (FFDCA). FIFRA requires that pesticides be registered (licensed) by EPA before they may be sold or distributed in the United States, and that they perform their intended functions without causing unreasonable adverse effects on people or the environment when used according to EPA-approved label directions.

FFDCA authorizes EPA to set tolerances, or maximum legal limits, for pesticide residues in or on food. Tolerance requirements apply equally to domestically-produced as well as imported food. Any food with residues not covered by a tolerance, or in amounts that exceed an established tolerance, may not be legally marketed in the United States.

Both FIFRA and FFDCA have been amended by the Food Quality Protection Act (FQPA) of 1996, which enhances protection of children and other sensitive sub-populations. Because of EPA's

work under these laws, Americans enjoy one of the safest, most abundant, and most affordable food supplies in the world.

Pesticides subject to EPA regulation include insecticides, herbicides, fungicides, rodenticides, disinfectants, plant growth regulators and other substances intended to control pests. The regulations directly affect pesticide producers, formulators, distributors, retailers, commercial pest control firms, farms, farm workers, industrial and governmental users, and all households.

Pesticides are used in agriculture, greenhouses, on lawns, in swimming pools, industrial buildings, households, and in hospitals and food service establishments. Total U.S. pesticide usage in 1995 was about 4.5 billion pounds, and there are about 1.3 million certified pesticide applicators in the U.S. Herbicides are the most widely used pesticides and account for the greatest expenditure and volume. Biopesticides and other non-conventional, or safer, pesticides make up about 20 percent of the total. Agriculture accounts for over 70 percent of all applications.

Through its food safety programs, EPA enhances health and environmental protection in a number of ways, including the following:

- Establishing a single, health-based standard for pesticide residues in food, and eliminating past inconsistencies in the law which treated residues in some processed foods differently from residues in raw and other processed foods.

- Providing for a more complete assessment of potential risks, with special protections for potentially sensitive groups, such as infants and children.

- Ensuring that pesticides are periodically reassessed for consistency with current safety standards and the latest scientific and technological advances.

- Expanding consumers' "right to know" about pesticide risks and benefits.

- Expediting the approval of safer, reduced risk pesticides.

EPA's Pesticide Regulations Affect a Cross-Section of the Population:

- 30 major pesticide producers and another 100 smaller producers
- 2500 formulators
- 29,000 distributors and other establishments
- 40,000 commercial pest control firms
- One million farms
- Several million industry and government users
- About 90 million households

Consumers are at risk for potential adverse effects from pesticide residues ingested either directly or through processed foods. Pesticides also "bioaccumulate" throughout the food chain. A critical step in protecting the public health is to evaluate food use pesticides for potential toxic effects such as birth defects, seizures, cancer, disruption of the endocrine

system, changes in fertility, harmful effects to the kidneys or liver, or short term effects such as headaches or disorientation. Ensuring that any residues on food are at acceptable levels is the essence of the Safe Food goal.

Means and Strategy

The Agency works toward a twofold strategy for accomplishing the objectives of the Safe Food goal:

- EPA encourages the introduction of new, safer pesticide ingredients (including new biological agents) within the context of new pest-management practices.

- At the same time, the Agency systematically works toward reducing the use of currently registered pesticides with the highest potential to cause adverse health effects. FIFRA mandates Special Review, reregistration reviews and other risk-management measures available in the registration authority. FQPA mandates additional screening for aggregate exposure, common mechanisms of toxicity and an additional tenfold safety factor to ensure protection of children and infants.

In 2000, the Agency will accelerate the pace of new registrations for pesticides that offer improved prevention or risk reduction qualities compared to those currently on the market. Progressively replacing older, higher-risk pesticides is one of the most effective methods for curtailing adverse impact on health and the ecosystem while preserving food production rates.

Other priorities in 2000 include evaluating existing tolerances for currently registered pesticides to ensure they meet the FQPA health standard and to screen and require testing of certain pesticides and chemicals to evaluate their potential for disrupting endocrine systems in animals or in humans. The emphasis will be on balancing the need for pesticides, and allowing for smooth transitions to safer pesticide alternatives.

EPA uses its FIFRA registration authorities and the FFDCA mechanism in tandem to systematically manage the risks of such exposures by establishing legally permissible food-borne exposure levels, or tolerances. EPA manages the legal use of pesticides, up to and including the elimination of pesticides that present a danger to human health and the environment. This task involves a comprehensive review of existing pesticide use as stipulated by the reregistration provision, as well as a comprehensive reassessment and update of existing tolerances on a six-year schedule, as required by FQPA.

An additional dimension is the pursuit and incorporation of the latest scientific advances in health-risk assessment practices, ensuring current uses meet the test of a reasonable certainty of no harm, as stipulated by FQPA. This includes the incorporation of new scientific data relating to the effects of endocrine disruption.

Finally, in addition to setting the requirements of continued legal use of agricultural pesticides, EPA works in partnership with USDA, FDA and the states toward the broader effort to prevent the misuse of agricultural pesticides.

More information about EPA's food safety efforts is available on the Office of Pesticides Program's website at http://www.epa.gov/pesticides.

Research

FQPA identifies the need for science to evaluate all potential routes and pathways of human exposure to pesticides and their effects. Research in 2000 will continue the program started in 1998 and will center on such initiatives as assessing the risk of exposures of varying frequency and duration. Research will also compare the effects of pesticide exposure to mixtures of pesticides and other toxics chemicals with exposure to the individual chemicals.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Reduce Agricultural Pesticides Risk

By: 2000 Decrease adverse risk from agricultural uses from 1995 levels and assure that new pesticides are safe by such actions as registering 6 new chemicals, 1800 amendments, 500 me-toos, 100 new uses, 45 inerts, 375 special registrations, 105 tolerances and 13 reduced risk chemicals/biopesticides.

Objective 02: Reduce Use on Food of Pesticides Not Meeting Standards

By: 2000 EPA will reassess 20% of the existing 9700 tolerances to ensure that they meet the statutory standard of "reasonable certainty of no harm," achieving a cumulative 53%.

Highlights

Reduce Agricultural Pesticides Risk

The Federal Food, Drug and Cosmetic Act (FFDCA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) authorize EPA to set terms and conditions of pesticide registration, marketing and use. EPA will use these authorities to reduce the use of pesticides with the highest potential to cause cancer or neurotoxic effects, including those which pose particular risks to children.

New food/feed-use pesticides are registered after an extensive review and evaluation of human health and ecosystem studies and data. The Registration program includes special registration activities, tolerance setting, and permits for experimental and emergency use.

In 2000, the Agency will continue to decrease the risk the public faces from agricultural pesticides (from 1995 levels) through the regulatory review and approval of new pesticide chemicals, including reduced risk pesticides and biopesticides. The Reduced Risk Initiative, which began in 1993, expedites the registration of reduced risk pesticides. Under this strategy, EPA will continue to provide accelerated review of pesticides which meet the criteria of reduced risk, i.e., reduced levels of acute toxicity, reduced exposure to humans or non-target organisms, and reduced environmental burden, considering comparisons with available alternative pesticides. These accelerated pesticide reviews provide an incentive for industry to develop, register, and use lower risk pesticides. Additionally, the availability of these reduced risk pesticides provide alternatives to older, potentially more harmful products currently on the market.

In addition to registering safer pesticides, EPA reviews petitions for temporary uses of pesticides to respond to emergency situations, such as a pest infestation on a crop, and exceptions for research purposes. These actions, provided for under FIFRA, include the issuance of emergency exemptions allowing the use for a limited time of a pesticide not registered for that specific purpose. Another provision addresses special local needs which allow registration of products by states for specific uses not Federally registered; experimental use permits allowing pesticide producers to test new pesticides uses outside the laboratory; amendments to previously approved pesticides (e.g., to reflect label revisions or changed formulations for products already registered); applications for new uses of a pesticide; and additional registrations for new products containing a pesticide already registered.

Reduce Use of Pesticides Not Meeting Current Standards on Food

The Food Quality Protection Act (FQPA) requires the Agency to revise its risk-assessment practices to ensure the adequate protection of children's health and other vulnerable groups, and to reevaluate some 9,700 food residue tolerances approved before the passage of FQPA. To meet the tolerance reassessment requirement, the Agency will complete approximately 1,950 additional tolerance reassessments in 2000. The Agency will also screen and test these pesticides for their potential to disrupt the endocrine system.

In 2000, the Agency's Pesticide Reregistration program is now in its final phase. The Reregistration program will enable EPA to review pesticides currently on the market to ensure they meet the FQPA health standards. Pesticides found not in compliance will be eliminated or restricted in order to minimize harmful exposure. The issuance of a Reregistration Eligibility Decision (RED) summarizes the health and environmental effects findings of the chemical reregistration. The findings determine whether the products registered under this chemical are eligible for reregistration.

In 2000, EPA will complete 20 REDs and approximately 750 product reregistrations. By 2002, active ingredient and product reregistration will be complete for all pesticides subject to reregistration under FIFRA '88. By 2006, all 9700 of the reassessments of pesticide residue tolerances mandated by FQPA will be completed.

FQPA requires that EPA establish a process for periodic review of pesticide registrations. This requires the updating of all pesticide registrations using current scientific data, risk assessment methodology, program policies and effective risk reduction measures.

Research

To address uncertainties associated with the Agency's ability to assess risk from exposure to pesticides and other toxic chemicals, research in 2000 will continue to focus on developing new methods and models to evaluate and assess exposures to pesticides and toxic chemicals, particularly cumulative/aggregate exposures, and to evaluate and predict potential human health effects of exposures to pesticides and toxic chemicals, emphasizing cumulative exposure (e.g., multiple acute exposures, exposure to chemical mixtures, etc.). Methods will be developed for integrating effects and exposure data for use in assessing the risks associated with chemicals regulated under FQPA.

External Factors

The ability of the Agency to achieve its strategic goals and objectives depends on several factors over which the Agency has only partial control or little influence. EPA relies heavily on partnerships with states, tribes, local governments and regulated parties to protect the environment and human health.

In addition, EPA assures the safe use of pesticides in coordination with the USDA and FDA, who have responsibility to monitor and control residues and other environmental exposures. EPA also works with these agencies to coordinate with other countries and international organizations with which the United States shares environmental goals. This plan discusses the mechanisms and programs the Agency employs to assure that our partners in environmental protection will have the capacity to conduct the activities needed to achieve the objectives. Much of the success of EPA programs also depends on the voluntary cooperation of the private sector and the public.

Other factors that may delay or prevent the Agency's achievement of some objectives include lawsuits that delay or stop the planned activities of EPA and/or state partners, new or amended legislation and new commitments within the Administration. Economic growth and changes in producer and consumer behavior could also have an influence on the Agency's ability to achieve several of the objectives within the time frame specified.

Large-scale accidental releases, such as large oil spills, or rare catastrophic natural events, could impact EPA's ability to achieves objectives in the short term. In the longer term, new

environmental technology as well as unanticipated complexity or magnitude of environmental problems could affect the time frame for achieving many of the goals and objectives, as could newly identified environmental problems and priorities. In particular, pesticide use is affected by unanticipated outbreaks of pest infestations and/or disease factors, which require EPA to review emergency uses to ensure no unreasonable risks to the environment will result. EPA has no control over requests for various registration actions such as new products, amendments and uses, so its projection of regulatory workload is subject to change.

Safe Food

Objective # 1: Reduce Agricultural Pesticides Risk

By 2005, the public health risk from agricultural use of pesticides will be reduced by 50 percent from 1995 levels.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Agricultural Pesticides Risk	$26,477.5	$29,139.0	$30,830.1	$1,691.1
Environmental Program & Management	$23,479.3	$26,243.8	$28,725.2	$2,481.4
Science & Technology	$2,998.2	$2,895.2	$2,104.9	($790.3)
Total Workyears:	291.3	291.3	294.4	3.1

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Pesticide Registration	$16,165.7	$17,491.6	$19,868.00
Pesticide Reregistration	$4,169.8	$4,253.3	$4,227.50
Endocrine Disruptor Screening Program	$1,164.0	$1,164.0	$1,167.8
Pesticide Residue Tolerance Reassessments	$977.3	$976.4	$973.0

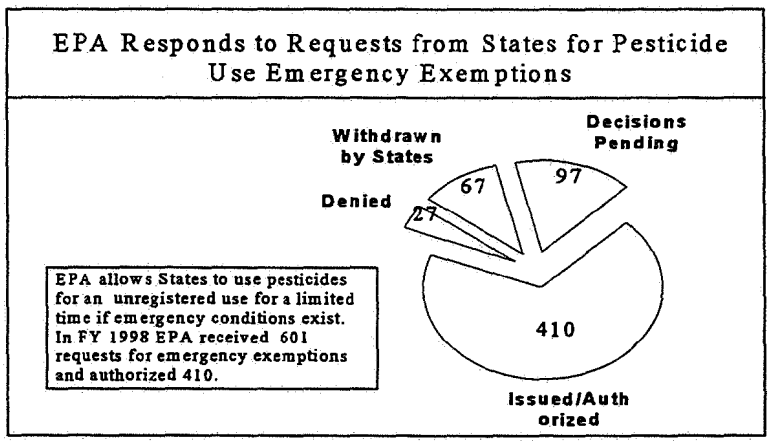
FY 2000 Request

The FY 2000 Budget for this objective reflects a requested increase of $1,691,100 over the FY 1999 Enacted Budget. This increase will be directed at accelerating the pace of new registrations of reduced risk pesticides, and at increasing the number of new tolerances established. It also reflects the Administration's goals of improving the safety of the food produced and consumed by Americans, and of continuing commitment to implement the higher statutory standard of FQPA, especially in the protection of infants and children.

Many pesticides currently on the market with approved food uses are suspected to be potential human carcinogens, neurotoxins, endocrine disruptors, or may otherwise pose significant health concerns, especially to children. EPA may require regulatory action in these cases to minimize exposure and thus reduce risk. To address these concerns, EPA will continue the Registration and Reregistration/Special Review regulatory programs, giving high priority to the FQPA mandates.

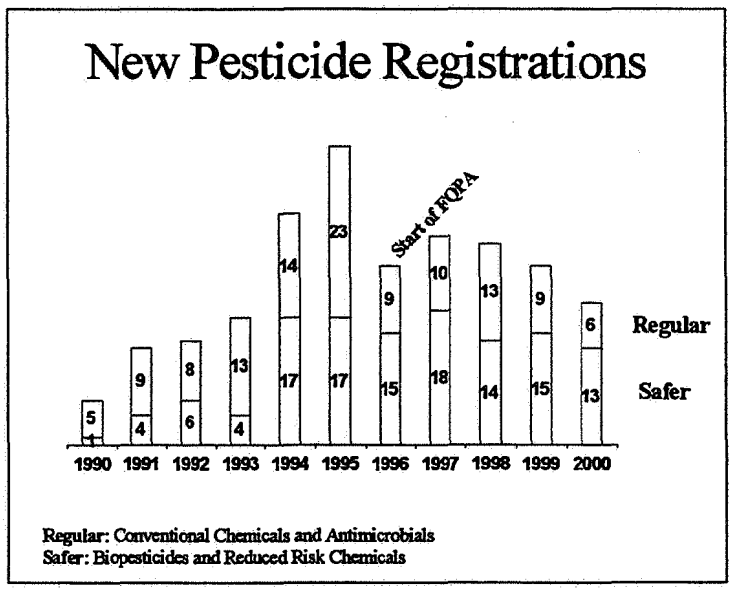
Registration Activities

Under the Registration program, the Agency registers new pesticides after extensive review and evaluation of human health and ecological effects studies and data. The Registration program includes new active ingredient registrations, new use registrations, special registrations, tolerance setting activities, permits for use of pesticides for emergencies and experimental activities. The Registration program allows for the accelerated processing of reduced risk substitutes to products already on the market, thus giving farmers and other users new tools which are better for health and the environment. EPA will work to accelerate the decision making process for registering new and reduced risk pesticides and for new uses of registered pesticides that meet FQPA safety standards.



In 2000, continued implementation of the FQPA standard of "reasonable certainty of no harm" will enable the Agency to ensure that pesticides exceeding safety standards are essentially eliminated. This standard subjects potentially toxic pesticides to a more rigorous review and thus reduces the potential for harmful pesticide exposure. The Agency will continue to revisit and revise, as necessary, its regulatory processes and practices to ensure adequate protection of human health. EPA addresses dietary exposure within the regulatory processes, particularly via tolerance setting and tolerance reassessment activities.

EPA will take prompt action on petitions for temporary uses of pesticides to meet emergency conditions and for research purposes. These actions consist of issuance of emergency exemptions (FIFRA sec. 18) allowing the use for a limited time of a pesticide not registered for that specific purpose and for special local needs (FIFRA sec. 24c) allowing registration of products by states for specific uses not Federally registered; experimental use permits (under FIFRA sec.5) allow pesticide producers to test new pesticide uses outside the laboratory to generate information to apply for amendments to previously approved pesticides (e.g., to reflect label revisions or changed formulations for products already registered); applications for new uses of a pesticide; and additional registrations for new products containing a pesticide already registered.



EPA is implementing the new FQPA health-based standards for pesticides with transparency and the involvement of stakeholders. EPA will find the right common-sense strategies for reducing risk to acceptable levels while retaining those pesticides of the greatest public value, including those utilized for minor uses and integrated pest management needs. EPA will also explore opportunities for reasonable phase out periods, market-based approaches and incentives, and cooperative partnerships to achieve these goals.

Reduced Risk Chemicals and Biopesticides

In 2000, EPA will decrease 1995 risk levels from agricultural pesticides through the regulatory review of reduced risk pesticides, including biopesticides. Through registration of reduced risk pesticides, the Agency will increase the availability of safer consumer alternatives, resulting in a reduction in the use of higher risk pesticides. The ongoing Reduced Risk Initiative will also contribute to risk reduction by providing expedited review of pesticides which meet the reduced risk criteria, i.e., pesticides with reduced toxicity, potential to displace other chemicals posing potential human health concerns, reduced exposure to workers, low toxicity to non-target organisms, low potential for groundwater contamination, lower use rates than alternatives, low pest resistance potential, or high compatibility with integrated pest management and efficacy.

Reduce Agricultural Use of Potential Carcinogenic or Neurotoxic Pesticides

A large number of current pesticides with approved food uses are classified as potential human carcinogens. Current understanding of chemical pesticides identifies both cancer and

neurotoxicity as endpoints of great concern. EPA will move aggressively to minimize dietary exposure from pesticides with the highest potential to cause cancer or neurotoxic effects. Major tasks required over the next few years include the development of needed new science policies, refinement of use information bases, advancement of the adoption of environmental stewardship and integrated pest management, acceleration of regulatory reviews and, where warranted, approvals of effective alternative tools for pest management.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$1,600,000) Increase and accelerate registration of reduced risk pesticides, including biopesticides. Because it takes a period of time to gear up and process new registrations, the increased outputs will not be seen until 2001.

- (+1,015,000) Increase in workforce cost of living.

S&T

- (-$790,300) Reduction reflects one-time costs and moving expenses for the pesticide laboratory consolidation at Fort Meade, Maryland.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Decrease risk from agricultural pesticides

In 2000 Decrease adverse risk from agricultural pesticides from 1995 levels and assure new pesticides that enter the market are safe for humans and the environment.

In 1999 Decrease adverse risk from agricultural pesticides from 1995 levels and assure new pesticides that enter the market are safe for humans and the environment.

Performance Measures	FY 1999	FY 2000
Register safer chemicals and biopesticides	15 Registrations	13 Registrations
New Chemicals	9 Registrations	6 Registrations
Amendments	2000 Actions	1800 Actions

Performance Measures	FY 1999	FY 2000
Me-toos	600 Actions	500 Actions
New Uses	90 Actions	100 Actions
Inerts	45 Actions	45 Actions
Special Registrations	370 Actions	375 Actions
Tolerance Petitions	95 Actions	105 Actions

Baseline: The number of safer pesticides registered (expected to be 46 by the end of 1999) since the passage of the Food Quality Protection Act in 1996. Outputs compared with the previous year's performance.

Reduce use of highly toxic pesticides

In 2000 Use of pesticides classified as having the highest potential to cause cancer, or neurotoxics effects, will be reduced by 5% (from FY 1995 baseline).

Performance Measures	FY 1999	FY 2000
Reduction of pesticide use that has the highest potential to cause cancer or neurotoxic effects		5% effects

Baseline: The number of cancer or neurotoxic pesticides on the market (approximately 100) and used on food crops since the passage of the Food Quality Protection Act in 1996.

Verification and Validation of Performance Measures

The performance measures for this objective are program outputs for the Registration program and are used as an indirect measure of reducing risk. New pesticides undergoing registration using FQPA standards are deemed less risky than most of those registered before FQPA, because the new registrations have to meet a more stringent health standard. Measurement of reduced risk derives from the number of reduced risk pesticides and biopesticides that are registered.

EPA has placed special emphasis on measuring alternatives to organophosphate pesticides that will reduce overall risk. Organophosphate pesticides are widely used but have been shown to have significant health effects. Risk is measured through the health effects, ecosystem effects, and risk assessment screenings that are performed on every pesticide submitted for registration.

Industry is required to provide a wide range of study results to accompany the application for registration. These results are then reviewed by the Agency in a multi-step process which evaluates completeness and appropriateness of the testing. The Agency also reviews the potential interactions and aggregate risk of this pesticide when combined with similar pesticides.

The Agency consults externally with the Science Advisory Panel (SAP) and provides notice and comment on risk assessment results. The screening mechanisms and tools themselves are subject to thorough testing and ongoing improvements through peer review and through the incorporation of the latest scientific findings. Information on pesticide residues is available from various sources, including the Dietary Risk Evaluation System (DRES), the Pesticide Data Program (PDP) and information provided in registrant submissions.

The Agency is also developing a National Pesticide Residue Database (NPRD) which will provide additional data. The performance measures are tracked internally by the Office of Pesticides (OPP) and the information is readily available to the public via several agency databases.

Coordination with Other Agencies

EPA coordinates and uses information from a variety of Federal, state and international organizations and agencies in our efforts to protect the safety of America's food supply from hazardous or higher risk pesticides.

In May 1991, the U.S. Department of Agriculture (USDA) implemented the Pesticide Data Program (PDP) to collect objective and statistically reliable data on pesticide residues on food commodities. This action was in response to public concern about the effects of pesticides on human health and environmental quality. EPA uses PDP data to improve dietary risk assessment to support the registration of pesticides for minor crop uses.

PDP is now a critical component of implementing the Food Quality Protection Act by providing improved data collection of pesticide residues, standardized analytical and reporting methods, and increased sampling of foods most likely consumed by infants and children. PDP sampling, residue, testing and data reporting are coordinated by the Agricultural Marketing Service using cooperative agreements with ten participating states representing all regions of the country. PDP serves as a showcase for Federal-State cooperation on pesticide and food safety issues.

The Agency is also developing the National Pesticide Residue Database (NPRD), in coordination with chemists and information management specialists from FDA, USDA, California and Florida. This database will include automated validation of data submissions. The system will be integrated with the other EPA databases.

FQPA requires EPA to consult with other government agencies on major decisions. For example, the USDA and the Food and Drug Administration (FDA) are routinely consulted when EPA makes tolerance decisions. Further, EPA, USDA and FDA work closely together using both a memorandum of understanding and working committees to deal with a variety of issues that affect the involved agencies. For example, these agencies work together on residue testing programs and on enforcement actions that involve pesticide residues on food, and we coordinate our review of antimicrobial pesticides.

While EPA is responsible for making registration and tolerance decisions, the Agency relies

on others to carry out enforcement activities. Registration-related requirements under FIFRA are enforced by the states. Tolerances are enforced by the Department of Health and Human Services/Food and Drug Administration for most foods, and by the U.S. Department of Agriculture/Food Safety and Inspection Service for meat, poultry and some egg products.

Internationally, the Agency collaborates with the Intergovernmental Forum on Chemical Safety (IFCS), the CODEX Alimentarius Commission, the North American Commission on Environmental Cooperation (NACEC), the Organization for Economic Cooperation and Development (OECD) and the North American Free Trade (NAFTA) commission to coordinate policies, harmonize guidelines, share information, correct deficiencies, build other nations' capacity to reduce risk, develop strategies to deal with potentially harmful pesticides and develop greater confidence in the safety of the food supply.

One of the Agency's most valuable partners on pesticide issues is the Pesticide Program dialogue Committee (PPDC), which brings together a broad cross-section of knowledgeable individuals from organizations representing divergent views to discuss pesticide regulatory, policy and implementation issues. The PPDC consists of members from industry/trade associations, pesticide user and commodity groups, consumer and environmental/public interest groups and others.

The PPDC provides a structured environment for meaningful information exchanges and consensus building discussions, keeping the public involved in decisions that affect them. Dialogue with outside groups is essential if the Agency is to remain responsive to the needs of the affected public, growers and industry organizations.

Statutory Authorities

Federal Fungicide, Insecticide and Rodenticide Act (FIFRA)

Federal Food, Drug and Cosmetic Act (FFDCA)

Food Quality Protection Act (FQPA) of 1996

Objective # 2: Reduce Use on Food of Pesticides Not Meeting Standards

By 2005, use on food of current pesticides that do not meet the new statutory standard of "reasonable certainty of no harm" will be substantially eliminated.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Use on Food of Pesticides Not Meeting Standards	$38,728.4	$38,407.4	$47,753.1	$9,345.7
Environmental Program & Management	$37,276.6	$30,587.9	$39,987.9	$9,400.0
Science & Technology	$1,451.8	$7,819.5	$7,765.2	($54.3)
Total Workyears:	400.7	411.1	417.8	6.7

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Pesticide Reregistration	$25,274.3	$20,718.2	$24,898.1
Endocrine Disruptor Screening Program	$1,417.6	$1,417.6	$2,566.2
Pesticide Residue Tolerance Reassessments	$8,561.3	$8,564.4	$9,871.0

FY 2000 Request

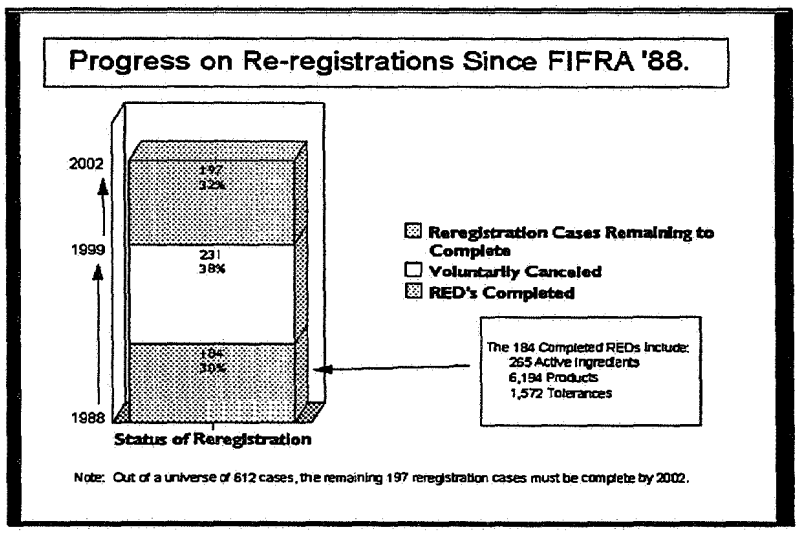
The FY 2000 budget for this objective reflects a requested increase of $9,345,700 over the FY 1999 Enacted Budget. This increase will be directed at the Reregistration program and the associated tolerance reassessments. The increase will also be directed at screening and testing existing pesticides for their potential to disrupt the endocrine system. The increase reflects the Administration's goals to improve the safety of the food produced and consumed by Americans, and the continuing commitment to implement the higher statutory standard of FQPA, especially in the protection of infants and children.

Complete Active Ingredient and Product Reregistration

Through the Reregistration program, now in its final phase, EPA will continue to review pesticides currently on the market to ensure that these too meet the FQPA health standard. Those pesticides found not in compliance will be eliminated or otherwise restricted to minimize harmful exposure. The issuance of a Reregistration Eligibility Decision (RED) summarizes the health and environmental effects findings during the reregistration review of the chemical. This finding determines whether the products registered under this chemical are eligible for reregistration. In 2000, the Agency will complete 20 REDs.

As pesticides go through reregistration, they may meet certain criteria that will trigger a special review. These criteria include (a) acute toxicity to humans or domestic animals, (b) potentially chronic or delayed toxic effects in humans or hazards to non-target organisms, risk to threatened or endangered species, (d) risk to critical habitats of threatened or endangered species, and (e) any other unreasonable adverse effects to humans or the environment. This review subjects the pesticide to a more in-depth analysis to determine with reasonable certainty that no harm will occur when used.

In 2000, the Agency is placing special emphasis on the screening and testing of pesticides, commercial chemicals and drinking water source contaminants which have the potential to disrupt the endocrine system. If a pesticide chemical is found to cause endocrine disruption, EPA will work with pesticide users to identify alternatives. Work on pesticide and chemical endocrine disruptors crosses two EPA goals (Goal 3 & 4). The outputs for both chemicals and pesticides endocrine disruptor work is shown in Objective 4.3.



By 2005, active ingredient and product reregistration will be completed for all pesticides subject to reregistration under FIFRA '88. Also, by 2005, 90 percent of the reassessments of pesticide residue tolerances mandated by FQPA will be completed.

Reassessment of Existing Pesticide Residue Tolerances on Food

A tolerance is the maximum legal amount of a pesticide residue permissible on food. FQPA requires that EPA reassess within ten years the 9,700 pesticide tolerances existing in 1996. To meet this requirement, the Agency will complete more than 50% of the tolerance reassessments by 2000. Current pesticides which do not meet the FQPA mandated standard of "reasonable certainty of no harm" will not receive approval for food use. This more stringent standard for food reduces dietary exposure to potentially toxic pesticides. The Agency has revised its risk assessment practices to incorporate the new provisions and increase protection of the health of children and other vulnerable groups.

FQPA requires EPA to reassess within ten years over 9700 tolerances to ensure that they meet the new FQPA safety standard. In developing the reassessment schedule, EPA is placing a priority on pesticides that appear to pose the greatest risk to the public. In FY 1998, over 1400 tolerances were re-evaluated against the new standard,

Registration Review

FQPA standards will have a great impact on the way pesticides are reviewed. The Agency has worked extensively with stakeholders through the Pesticide Program Dialogue Committee and the Tolerance Reassessment Advisory Committee to ensure transparency in decision making and a fuller understanding of the implications for growers, producers and the public. Particular emphasis remains with facilitating a smooth transition to safer pesticides.

Establishing a process for periodic review of pesticide registrations, with a goal of repeating this process every fifteen years, is also required of EPA under FQPA. In 2000, efforts will center on developing the proposed regulation which will define and outline the program. This is a major undertaking that will require the registrations of all pesticides to be updated with respect to current scientific data, risk assessment methodology, program policies and effective risk reduction measures. As the reregistration program ends, this new program will again review all pesticide registrations, and will assure that additional, significant improvements are made in the protection of human health and the environment. The FIFRA fund that supports the reregistration process will expire in 2001, so funding for the new registration review process will need to be planned.

FQPA and the Safe Drinking Water Act Amendments in 1996 require the Agency to screen new chemicals and test those currently in use for their potential to disrupt the endocrine systems of humans and wildlife. The endocrine system helps guide development, growth, reproduction and behavior.

This is a critical issue, especially for children, since exposure to endocrine disruptors during the gestation period or infancy can pose serious and permanent developmental problems. Affected wildlife have been reported with deformed reproductive organs, aberrant mating behavior, sterility and other physical and behavioral anomalies. In 2000, EPA will begin testing chemicals suspected as being endocrine disruptors, and attempt to gauge how widespread these chemicals are in the environment.

Research

Congress enacted the Food Quality Protection Act (FQPA) in 1996, mandating a single health based standard for all pesticides in all foods and providing special protections for sensitive subpopulations, particularly infants and children. Titles III and IV of the Act identify clear science needs consistent with the evaluation of all potential routes and pathways of exposures and their effects, taking into consideration effects from cumulative exposures. Uncertainties associated with our ability to assess risk from aggregate/cumulative exposure to mixtures of chemicals can be articulated through such scientific questions as the following:

- What are the human health effects associated with multiple, short-term exposures to pesticides and other toxic chemicals that differ from those resulting from chronic exposures?

- What are the human health effects associated with exposures to mixtures of pesticides and other toxic chemicals with similar modes of action that differ from those associated with the individual chemicals?

To address these and other issues related to implementing FQPA, research will continue to focus on developing new methods and models to evaluate and assess cumulative/aggregate *exposures* to pesticides and toxic chemicals and to evaluate and predict potential human health *effects* of cumulative exposure (e.g., multiple acute exposures, chemical mixtures, etc.) to pesticides and other toxic chemicals.

More specifically, health effects research will focus on the development or improvement of models to be used for evaluating human health effects under FQPA, including physiologically-based pharmacokinetic (PBPK) models to improve dose estimation across exposure scenarios, biologically-based dose-response (BBDR) models to reduce uncertainty in extrapolations (e.g., from high doses in animals to environmental exposures in humans)and structure-activity relationship (SAR) models to improve hazard characterization. Moreover, many of the health effects methods and models developed under this program will be used to evaluate effects in susceptible subpopulations, particularly infants and children. Many methods will be designed to evaluate the effects of pre- and perinatal exposures.

Much of the exposure research will also focus on infants and children. Improved measurement and exposure methods will be developed to detect, characterize and quantify pesticide exposures in infants and children (including age-related differences and activity patterns or behaviors unique to children) and other susceptible subpopulations (elderly, those with a predisposition to disease, and

high-end exposure groups focusing on identification and characterization of critical exposure factors and pathways. Multimedia/multipathway exposure models will include all relevant pathways and media (especially those related to child behaviors and activity patterns) and will be capable of source-pathway-exposure-dose modeling in a predictive and diagnostic manner. Probabilistic exposure models will be developed to describe various exposure scenarios.

One specific requirement of FQPA is that multimedia/multipathway exposures be considered when setting food tolerances for pesticides. To address some of the major uncertainties here, research will continue to develop a framework and to collect information that can be used to estimate the potential for nondietary pesticide exposures for infants and children and identify those pesticides, pathways and activities that represent the highest potential for exposure and health risks.

Finally, methods will be developed for integrating effects, exposure and dose-response data for use in risk assessments of chemicals regulated under FQPA.

EPA will also continue to provide technical support in the form of assessment, support consultation and review to the Office of Prevention, Pesticides and Toxic Substances (OPPTS).

FY 2000 Change from FY 1999 Enacted

<u>EPM</u>

- (+$1,148,600) Begin screening and testing of pesticides for their potential to disrupt the endocrine system. This initiative will implement the recommendations of the Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) and begin the screening and testing of pesticides, commercial chemicals and drinking water source contaminants for potential to disrupt the endocrine system and provide sound scientific methods information for protecting human health and wildlife.

- (+$1,800,000) Design and start up activities associated with the new Registration Review program. Resources will be used to develop policies and programs to implement the FQPA requirement that the Agency review pesticide registrations every fifteen years to ensure that all pesticides meet updated safety standards.

- (+$2,905,200) Reflects increased complexity of analysis required for Reregistration Eligibility Decisions (REDs). This investment will help ensure that the remaining REDs are completed by 2002.

- (+1,772,500) Requested increase in support of new FQPA requirements to ensure adequate health protection from exposure to potentially toxic pesticides. Funding will help assure that major public health and environmental risks from existing pesticides are more rapidly identified, assessed and reduced.

- (+$1,655,000) Increase support for Tolerance Reassessment program is requested to fully implement recommendations of Tolerance Reassessment Advisory Committee.

S&T

- (-$266,800) Reduction in one-time costs and moving expenses for the pesticide laboratory consolidation at Fort Meade, Maryland.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Reassess pesticide tolerances

In 2000 EPA will reassess 20% of the existing 9700 tolerances to ensure that they meet the statutory standard of "reasonable certainty of no harm", achieving a cumulative 53% assessed.

In 1999 Under pesticide reregistration, EPA will reassess 19% of the existing 9,700 tolerances (cumulative 33%) for pesticide food uses to meet the new statutory standard of "reasonable certainty of no harm."

Performance Measures	FY 1999	FY 2000
Tolerance Reassessment	1850 Actions	1950 Actions
REDs	34 Decisions	20 Decisions
Product Reregistration	750 Actions	750 Actions

Baseline: Baseline is the number of REDs issued, product Reregistrations completed, and the number of tolerances (from a universe of 9700) set in 2000.

Issue proposed Registration Review rule

In 2000 Issuance of the proposed rule for Registration Review.

Performance Measures	FY 1999	FY 2000
Issue proposed Registration Review rule		06/30/2000

Baseline: The rule will establish the framework for the registration review program required by FQPA.

Research

Research to support FQPA

In 2000 Provide methodologies to evaluate the risk to human health posed by food-use products.

Performance Measures	FY 1999	FY 2000
Develop and validate a new and improve an existing method to evaluate the effects of pre- and perinatal exposure to pesticides and other toxic substances.		09/30/2000 method
Develop dose-response relationships to evaluate risks to human health from exposures to mixtures of pesticides and other toxic chemicals with the presumed same mode of action.		09/30/2000
First generation multimedia, multipathway exposure model for infants and young children and the identification of critical exposure pathways and factors.		09/30/2000 model
Develop a method to evaluate the human health effects of cumulative exposure to pesticides and other toxic substances.		1 method

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures

The performance measures for this objective are program outputs for the Reregistration program and are direct measures of reducing the use of pesticides which do not meet the FQPA standard. The performance measures are tracked internally by the Office of Pesticides (OPP). The Pesticide Regulatory Action Tracking System (PRATS) which tracks registration actions, also tracks product reregistration actions. As pre-FQPA tolerances are reassessed, risk from pesticide residues on food will be reduced because the new tolerances must meet the new, more stringent health standard stipulated by FQPA.

The Agency receives information on pesticide residues from a number of sources, such as the Dietary Risk Evaluation System (DRES), the Pesticide Data Program (PDP) and information provided in registrant submissions. The Agency is also developing a National Pesticide Residue Database (NPRD) which will provide additional data.

The DRES is used to conduct acute risk assessment. This system, however, assumes that all crops with registered uses of a pesticide were treated with that same pesticide, and that the crops had residues at the tolerance level. DRES has been refined by incorporating analysis to better adjust for actual use and residue patterns, when appropriate. Science Advisory Panel and stakeholder

discussions of appropriate threshold levels are a key part of ongoing verification and validation for this system.

The Pesticide Data program, run by the USDA, has a number of internal verification and validation steps. The USDA interviews individuals regarding everything they ate and drank over the previous twenty-four hours. Additional, non-consecutive days' information is also collected. The data are collected for large numbers of survey participants, scientifically selected so that results can be projected as representative of the U.S. population. USDA survey interviewers are trained to probe for additional information when unusual intakes of various kinds are reported. Additional data checks and validation occurs in the data collection and analysis procedures to ensure that the reported intakes are as accurate as possible.

Through various groups such as the Tolerance Reassessment Advisory Committee (TRAC), the Food Safety Advisory committee (FSAC), the Endocrine Disruptors Screening and Testing Advisory Committee (EDSTAC), the Pesticide Program Dialogue Committee (PPDC), and the State FIFRA Issues Research and Evaluation Group (SFIREG), the Agency is ensuring our review processes under FQPA receive diverse stakeholder input. Additionally, the Agency receives independent scientific peer review from Science Advisory Panel (SAP) and the Science Advisory Board (SAB).

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by

Goal 4: Preventing Pollution

Goal 4: Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems IV-1
Reduce Public and Ecosystem Exposure to Pesticides IV-15
Reduce Lead Poisoning IV-23
Safe Handling and Use of Commercial Chemicals and Microorganisms IV-29
Healthier Indoor Air IV-43
Improve Pollution Prevention Strategies, Tools, Approaches IV-53
Decrease Quantity and Toxicity of Waste IV-65
Assess Conditions in Indian Country IV-75

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Strategic Goal: Pollution prevention and risk management strategies aimed at cost-effectively eliminating, reducing, or minimizing emissions and contamination will result in cleaner and safer environments in which all Americans can reside, work, and enjoy life. EPA will safeguard ecosystems and promote the health of natural communities that are integral to the quality of life in this nation.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems	**$259,721.3**	**$237,789.8**	**$277,166.0**	**$39,376.2**
Reduce Public and Ecosystem Exposure to	$48,998.9	$43,178.2	$51,050.8	$7,872.6
Reduce Lead Poisoning	$30,844.6	$30,817.4	$29,213.5	($1,603.9)
Safe Handling and Use of Commercial Chemicals	$44,750.6	$42,443.2	$56,874.1	$14,430.9
Healthier Indoor Air	$34,017.6	$29,629.4	$40,778.6	$11,149.2
Improve Pollution Prevention Strategies, Tools,	$26,829.8	$21,884.0	$25,116.1	$3,232.1
Decrease Quantity and Toxicity of Waste	$23,429.1	$18,852.5	$21,026.0	$2,173.5
Assess Conditions in Indian Country	$50,850.7	$50,985.1	$53,106.9	$2,121.8
Total Workyears:	1,122.8	1,124.9	1,117.9	-7.0

Background and Context

EPA uses a number of approaches to protect Americans' and the nation's fragile ecosystems from the risks of exposure to pesticides or toxic chemicals. The underlying principle of the activities incorporated under this goal is the application of pollution prevention. Preventing pollution before it does damage is cheaper and smarter than costly cleanup and remediation, as evidenced with Superfund and PCB cleanups. In 1998, facilities reported a total of 10.2 billion pounds of pollutants released, treated or combusted for energy. Reducing waste, and reducing the toxic chemicals that are used in industrial processing, protects the environment and also lowers costs for industry.

Pollution prevention involves changing the behavior of those that cause the pollution and fostering the wider use of preventive practices as a means to achieve cost effective, sustainable results.

In Goal 4 the Agency targets certain specific chemicals of especially high risk as well as the full range of pollutants addressed by the pollution prevention program. Many chemicals are particularly toxic to children. Lead, for instance, damages the brain and nervous system and can result in behavioral and learning problems if blood levels are too high. Despite great progress over the last twenty years, there are still over 1 million American children with elevated blood levels of lead. Asbestos, PCB's and other chemicals present in our buildings and in the environment pose risks to anyone exposed as well as to wildlife. For other common chemicals, we simply don't know what, if any, risks are present.

Means and Strategy

The diversity and fragility of America's environments (communities, homes, workplaces and ecosystems) requires EPA to adopt a multi-faceted approach to protecting all Americans from the threats posed by pesticide and toxic chemicals. The underlying principle of the activities incorporated under this goal is the application of pollution prevention. Preventing pollution before it does damage to the environment is cheaper and smarter than costly cleanup and remediation, as evidenced with Superfund and PCB cleanups. Pollution prevention involves changing the behavior of those that cause the pollution and fostering the wider use of preventive practices as a means to achieve cost effective, sustainable results.

Under this Goal EPA ensures that pesticides and their application methods not only result in safe food, but also cause no unnecessary exposure either to human health or to natural ecosystems. In addition to the array of risk-management measures entailed in the registration authorities under FIFRA for individual pesticide ingredients, EPA has specific programs to foster worker and pesticide-user safety as well as ground-water protection, and the safe, effective use of antimicrobial agents. These programs work to ensure the comprehensive protection of the environment and wildlife in general, endangered species in particular, and to reduce the contribution of particular pesticides to specific ecological threats such as endocrine disruption or pollutant loading in precise geographic areas. Within this context, EPA pursues a variety of field activities at the regional, state and local levels, including the promotion of pesticide environmental stewardship programs with user groups as partners. Finally EPA promotes the use of sensible Integrated Pest Management (IPM) and the prevention of misuse in the panoply of uses within both the urban and rural environments.

Much remains to be done to safeguard our nation's communities, homes, workplaces and ecosystems. Preventing pollution through regulatory, voluntary, and partnership actions - educating and changing the behavior of our citizens - is a sensible and effective approach to sustainable development while protecting our nation's health.

Preventing pollution through partnerships is central to the Agency's Chemical Right-to-Know initiative in 2000. This new initiative will provide the public with information on the basic health

and environmental effects of the 2,800 chemicals produced at the highest volumes in the U.S. Most Americans come into daily contact with many of these chemicals, yet relatively little is known about their potential impacts. Basic hazard testing information will be the focus of a high visibility, voluntary challenge program recognizing industry's contribution to the public knowledge base on these prevalent chemicals. Risks to children is a particular focus, and the Agency will supplement the information from industry with additional testing to identify and address any chemicals of special concern for children's health.

Also central to the Agency's work under this goal in 2000 will be increased attention on documenting and taking action to reduce risk from chemicals that persist, bioaccumulate or are highly toxic (PBT's) and from chemicals that have endocrine disruption effects. These chemicals have very high potentials for causing long-term damage to humans and to ecosystems. Accumulating in the food chain, often far from the source of initial exposure, and disrupting the life cycle and creation of healthy offspring, in essence these chemicals produce a multiplier effect that is difficult to halt once it is in action in the environment. Pollution prevention and controlling releases are the mainstays of protection, once these chemicals are correctly identified.

The Agency mixes both regulatory and voluntary methods to accomplish its job. For example, each year the New Chemicals program reviews and manages the risks of up to 2,000 new chemicals and 40 products of biotechnology that enter the marketplace. This new chemical review process not only protects the public from the immediate threats of harmful chemicals, like PCBs, from entering the marketplace but it has also contributed to changing the behavior of the chemical industry, making industry more aware and responsible for the impact these chemicals have on human health and the environment. This awareness has lead industry to produce safer "greener" alternative chemicals and pesticides. Fewer harmful chemicals are entering the marketplace and our environment today because of the New Chemical Program. Through our Design for the Environment program, today's EPA forms partnerships with industry to find sensible solutions to prevent pollution. In one example, taking a sector approach, EPA has worked with the electronics industry to reduce the use of formaldehyde and other toxic chemicals from the manufacture of printed wiring boards.

In several cases achieving the strategic objectives under this goal is a shared responsibility with other federal and state agencies. For example EPA's role in reducing the levels of environmental lead exposure involves promotion of federal-state partnerships to lower specific sources of environmental lead, such as lead-based paint and other lead-content products. These partnerships emphasize public education and empowerment strategies, which fit into companion federal efforts (e.g., HHS and the Centers for Disease Control; HUD) to monitor and reduce environmental lead levels. Likewise, the results of EPA's efforts to reduce indoor air exposures are measured by public-health agencies. EPA focuses on specific agents (e.g., radon), on general categories of indoor facilities (schools, homes and workplaces), and on the characteristic risks presented in each category.

Intrinsic to the effort to prevent pollution is the minimization of the quantities of waste generated by industry, municipalities and hazardous-waste management operations. Strategies range from fostering recycling and other resource-recovery processes to broad-based campaigns to re-engineer the consumption and use of raw materials or personal conservation of resources.

Since this Goal focuses on how Americans live in communities, it features the particular commitment of promoting environmental protection in Indian country, as consistent with our trust relationship with tribes, and is cognizant of the nation's interest in conserving the cultural uses of natural resources.

Research

The human health and ecosystems research included in this objective is designed to provide direct support to EPA's regulatory program for pesticides and toxic substances. The information developed from application of human health research will significantly increase understanding of the impacts of specific pesticides and toxic substances on human health. Ecosystems research will help EPA develop the evaluative effects methods that are used in the regulation of toxic substances, including pesticides, in ecosystems. Test methods developed through this research program are incorporated in the existing compendium of test methods used to support Agency regulatory requirements.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Reduce Public and Ecosystem Exposure to Pesticides

By: 2000 Protect homes, communities, and workplaces from harmful exposure to pesticides and related pollutants through improved cultural practices and enhanced public education, resulting in a reduction of 5%, or 20% cumulative (from 1994 levels) in the number of incidences of pesticide poisonings reported nationwide.

Objective 02: Reduce Lead Poisoning

By: 2000 Administer federal programs and oversee state implementation of programs for lead-based paint abatement certification and training in 50 states, to reduce exposure to lead-based paint and ensure significant decreases in children's blood lead levels by 2005.

Objective 03: Safe Handling and Use of Commercial Chemicals and Microorganisms

By: 2000 Provide methods and models to evaluate the impact of environmental stressors on human health and ecological endpoints for use in guidelines, assessments, and strategies.

By: 2000 Ensure that of the up to 1800 new chemicals and microorganisms submitted by industry each year, those that are introduced in commerce are safe to humans and the environment for their intended uses.

Objective 04: Healthier Indoor Air

By: 2000 890,000 additional people will be living in healthier residential indoor environments.

By: 2000 2,580,000 students, faculty and staff will experience improved indoor air quality in their schools.

Objective 05: Improve Pollution Prevention Strategies, Tools, Approaches

By 2000 The quantity of Toxic Release Inventory (TRI) pollutants released, treated or combusted for energy recovery, will be reduced by 200 million pounds, or 2%, from 1999 reporting levels.

Objective 06: Decrease Quantity and Toxicity of Waste

By: 2000 Divert an additional 1% (for a cumulative total of 29% or 64 million tons) of municipal solid waste from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.3 pounds per day.

Objective 07: Assess Conditions in Indian Country

By: 2000 20% of Tribal environmental baseline information will be collected and 20 additional tribes (cumulative total of 65) will have tribal/EPA environmental agreements or identified environmental priorities.

Highlights

EPA seeks to prevent pollution at the source as the first choice in managing environmental risks to humans and ecosystems. Where pollution prevention at the source is not a viable alternative, the Agency will employ risk management and remediation strategies in a cost effective manner. Reducing pollution at the source will be carried out using a multi-media approach in the following manner:

Reduce Public and Ecosystem Exposure to Pesticides

Reducing risk from exposure to pesticides requires a multi-faceted approach. Beyond being exposed through the food we eat, the general public, applicators, and farm workers may be exposed through direct handling, groundwater contamination or aerial spray. One intent of the Food Quality Protection Act (FQPA) is to protect the public by shifting the nation toward safer pesticide use. Appropriate transition strategies to safer pesticides are important to the nation to avoid disruption of food supply or sudden changes in the market that could result from abrupt termination before well targeted safer equivalents can be identified and made available. For these reasons, the Strategic Agricultural Partnership initiative is an important priority in 2000. The Strategic Agricultural Partnership will assist in developing alternative pest management tools and effective implementation approaches. The Agency will work closely with industry, agricultural pesticide users and other stakeholders to develop an effective transition to the safer pesticides required by the FQPA.

In 2000, EPA will continue increasing agricultural workers' awareness and knowledge of pesticides and worker safety through the Certification and Training (C&T) and Worker Protection (WP) programs. EPA will continue to protect the nation's ecosystems and reduce impacts to endangered species through Pesticide Environmental Stewardship Program (PESP), and integrated pest management (IPM). The Agency will emphasize efforts with our tribal partners to address pesticide issues and enhance the development of tribal technical capacity, particularly in the areas of risk management, worker safety, training, and pollution prevention.

Together, the WP and the C&T programs address the problem of direct exposure. These programs safeguard workers from occupational exposure to pesticides by providing training for agricultural workers, employers, and pesticide applicators and handlers. Training and certification of applicators of restricted use pesticides further ensures that workers and other vulnerable groups are protected from undue pesticide exposure and risk. The Groundwater Strategy, a cooperative effort with states and Regions to develop Pesticide Management Plans (PMPs), will further efforts to prevent pesticide pollution of groundwater. The Endangered Species program will enlist the support of the agricultural community and other interested groups to protect wildlife and critical habitats from pesticides. This voluntary program is carried out through communications and outreach efforts and in coordination with other federal agencies. The Pesticide Environmental Stewardship Program (PESP) and Integrated Pest Management (IPM) play pivotal roles in moving the nation to the use of safe pest control methods, including reduced risk pesticides. These closely related programs promote risk reduction through collaborative efforts with stakeholders to utilize safer alternatives to traditional chemical methods of pest control.

Antimicrobial sterilants and disinfectants are used to kill microorganisms on surfaces and objects in hospitals, schools, restaurants and homes. Antimicrobials require appropriate labeling and handling to ensure safety and efficacy. EPA will remain focused on concerns regarding product labeling and product efficacy and on meeting other requirements for antimicrobial sterilants set forth by FQPA.

Reduce Lead Poisoning

During FY 2000, EPA will implement the Lead Certification and Training Program for lead-based paint professionals. Most States choose to establish their own programs, however, in an estimated 15 to 20 states the Agency will directly implement Lead Certification and Training. EPA will also promulgate two major lead rules, the debris and lead hazard standards rules. Lead-based paint is the primary source of lead-poisoning in children in the U.S. today. EPA contributes to solving this environmental problem primarily by assisting in, and in some cases guiding, federal activities aimed at reducing the exposure to children in homes with lead-based paint.

EPA has promulgated regulations to set up a federal infrastructure, including the lead assessment and abatement training and accreditation rule for targeted housing, and the lead real estate notification and disclosure rule (with HUD and HHS). In 2000 the Agency will prepare final rules on disposal of lead-based paint debris and establishment of standards regarding hazardous levels of lead in paint, dust and soil. EPA will also develop 3 proposals, setting standards for training and certification for lead-based paint abatement activities in public and commercial buildings, bridges, and superstructures, and reconversion and remodeling. These activities will make significant contributions to the objective of reducing the blood lead levels of our nation's most vulnerable children.

Safe Handling and Use of Commercial Chemicals and Microorganisms

Under TSCA, EPA identifies and controls unreasonable risks associated with chemicals. In 1999, the Vice-President has called on EPA to launch the Chemical Right-to-Know Initiative, addressing a critical gap in the nation's knowledge about the health and environmental hazards of high production volume chemicals. The initiative will work with industry to put information about those chemicals into the hands of the public, communities, environmental groups, States and the Regions as quickly as possible, as well as take action to mitigate the risks identified during these efforts.

Another priority is working to implement the recommendation of the Endocrine Disrupter Screening and Testing Advisory Committee (EDSTAC), which provided advice and counsel to the Agency on a strategy to screen and test chemicals and pesticides that may cause endocrine disruption in humans, fish, and wildlife. EPA must implement the strategy by August 1999 and report to Congress by August 2000.

In 1999, EPA will begin the validation of an EDSTAC recommended screening test protocol and will complete it in 2000. EPA then will begin testing chemicals in commerce for endocrine disrupting potential. It is expected that by 2005 all high production volume chemicals will have been screened for endocrine disrupting potential and the resulting priority chemicals will have been tested or testing initiated, using the approach and test methods developed from recommendations of the EDSTAC.

In 2000, EPA will also continue efforts in four important program areas, including: existing chemicals; new chemicals; national program chemicals (including lead, fibers, dioxin, and PCB's); and the endocrine disruptor testing program. The Agency reviews chemicals already in commerce, along with chemicals or microorganisms before commercialization (i.e., "new" chemicals) to determine whether they can be handled and used safely. Another focus is identifying opportunities for increasing the introduction and use of safer or "greener" chemicals.

For those chemicals whose significant risks are well established (such as PCBs, asbestos, and dioxin), reductions in use and releases are important to reducing exposure of the general population and also of sensitive sub-populations. EPA's PCB control efforts will shift from enforcing PCB use standards toward encouraging phase-out of PCB electrical equipment, ensuring proper waste disposal methods and capacity, and fostering PCB site cleanups. An Agency-wide dioxin strategy will respond to the latest science and address dioxin risk management in a more comprehensive cross-media approach. EPA is also continuing work on its Dioxin Exposure Initiative which focuses on identifying and quantifying the link between dioxin sources and the general population exposure.

EPA's research program will support this effort by generating scientific information used in improving the test methods used to generate the data. Research seeks to improve our understanding of both the risks to human health and adverse ecological effects. To the extent that this research supports testing guidelines that relate to both toxic substances in general and to pesticides, research under this objective additionally supports EPA's goal to reduce the risks to the nation's food supply and the non-dietary pesticide risks posed to human health and the environment.

Achieving Healthier Indoor Air

The Indoor Environments program will work on the education and outreach activities which implement portions of "Asthma and the Environment: An Action Plan to Protect Children," the draft Inter-agency Plan being developed under the President's Task Force On Environmental Health Risks and Safety Risks to Children. All of the activities proposed for 2000 fall within Recommendations 2 and 4 of the inter-agency action plan. Recommendation 2 calls for the implementation of public health programs that improve the use of scientific knowledge to prevent and reduce the severity of asthma symptoms in children by reducing environmental exposures. Recommendation 4 calls for implementation of programs designed to eliminate the disproportionate impact on minorities and those living in poverty. EPA's proposed activities will be conducted with close collaboration among EPA offices, as well as with the Centers for Disease Control (CDC), and the National Institutes of Health institutes to ensure that the activities complement those being conducted by the Department of Health and Human Services. In support of the President's Task Force on Environmental Health Risks and Safety Risks to Children, the Agency will conduct a pilot program to expand air pollution monitoring in up to two communities downwind of industrialized urban centers to better understand the relationship between air pollution and childhood asthma. Asthma highlights include:

Asthma Management In and Through Schools

EPA will expand the implementation of its highly successful indoor air quality "Tools for Schools," an indoor air quality management plan for schools, to several thousand more schools by developing and implementing an incentive/recognition program. The Agency also will substantially increase implementation of the "Open Airways" asthma management program to reach several thousand more elementary schools and expand the "A is for Asthma" program for pre-school children to 89 locations.

Increased Community Action

EPA will work with housing groups, home health educators, community groups, and building operators to design and conduct pilots to substantially reduce indoor environmental triggers for asthma in low-income housing. The Agency also will convene five state-wide urban environmental asthma summits, and a National Environmental Asthma Caucus for practitioners, researchers, industry, and government to identify the most effective ways to target and educate the public about environmental triggers of asthma. For the first time, EPA will provide funding to local communities through established programs to work with doctors, health clinics, and civic groups to reduce children's exposure to environmental tobacco smoke (ETS), a significant indoor environmental asthma trigger.

Working with Managed Care to Get Asthma Reduction

EPA will conduct economic analyses to identify areas to provide economic incentives for managed care/health care organizations to help reduce asthma attacks through patient education about indoor environmental triggers. Incentives for health care providers to incorporate education into their patient contacts could include fewer doctor and urgent care visits, lowered medication costs, etc. EPA will join with other Federal agencies to convene a cabinet level summit with managed care CEO's to solicit their help in addressing asthma prevention by integrating strong messages about indoor environmental triggers into health education programs.

Significantly Expand Multi-media Campaigns

EPA will significantly expand to several waves, national multi-media campaigns on asthma and ETS. The asthma campaign would be targeted to children and urban residents, who need to be educated about the indoor environmental triggers of asthma. The ETS campaigns will target parents of small children, counseling them not to expose children to smoke inside the home. Research indicates that multiple messages are needed before the public will act.

Improve Pollution Prevention Strategies, Tools

Pollution prevention (P2) is designed to prevent contaminants from entering the environment. To support that principle, current EPA strategies are to institutionalize preventive approaches in EPA's regulatory, operating, and compliance/enforcement programs and facilitate the adoption of pollution prevention techniques by states, tribes and industry. EPA is encouraging the use of market incentives, environmental management tools and new technologies to promote wider adoption of P2 measures. Perhaps the fastest growing opportunity for incorporating P2 into basic business practices lie in private sector partnerships, which enable EPA's knowledge of P2 principles and techniques to be combined with industry-specific expertise in production and process. These approaches provide assistance and incentives to various sectors of society (e.g., manufacturers, product and service suppliers, governments, consumers) to promote behavioral change that is sustainable and beneficial to the environment. These activities promote greater ecological efficiency and therefore help to reduce the generation and release of production-related waste.

Decrease the Quantity and Toxicity of Waste

The Agency's work encompasses many activities to decrease waste that include reducing toxic chemicals in industrial hazardous waste streams, reducing the generation of municipal, hazardous and other solid waste, and recycling hazardous and municipal solid waste.

Reducing toxic chemicals in industrial waste streams will result in more efficient use of natural resources, and decrease human exposure to toxic wastes. The Agency will further develop partnerships with industry to minimize hazardous wastes by building on the tools and coordination activities that were put in place in 1998 and 1999. The RCRA program is focusing reduction efforts on the most persistent, bioaccumulative and toxic chemicals in hazardous waste which is consistent with the national and international priority on reducing the presence of persistent, bioaccumulative and toxic chemicals (PBTs) in the environment.

As part of the national leadership to reduce the amount of waste generated, and to improve the recovery and conservation of materials through source reduction and recycling, RCRA recycling and source reduction projects will continue to move beyond the basics in 2000. These efforts include promoting financing and technology opportunities for recycling/reuse businesses and working with partners to identify, analyze and share information on waste reduction opportunities for construction and demolition debris, food wastes and other targeted waste streams. The Agency will also continue working to reduce the barriers to safe recycling of hazardous waste, through changes to the definition of solid waste, through provisions in other regulatory standards and through ongoing outreach to stakeholders to explore additional options. In 2000, the Agency will initiate the hazardous waste recycling strategy. Options being considered for the strategy include outreach and rulemakings that will reduce burden on industry while ensuring safer recycling, including some regulations stemming from the Agency's Common Sense Initiatives (CSI).

Assess Conditions in Indian Country

EPA places particular priority on working with Federally recognized Indian tribes on a government-to-government basis to improve environmental conditions in Indian country in a manner that affirms the vital trust responsibility that EPA has with the 554 tribal governments. The Agency will concentrate on building Tribal infrastructure and completing a documented baseline assessment of environmental conditions in Indian Country to enable EPA/Tribes to identify high priority human health and environmental risks. These assessments will provide a blueprint for planning future activities through the development of Tribal/EPA Environmental Agreements (TEAs) or other similar tribal environmental plans to address and support priority environmental multi-media concerns in Indian Country. EPA will support innovative approaches for implementation of tribal programs and funding flexibility through participation in Performance Partnership Grants (PPGs).

The Agency's **Pollution Prevention Program** can be described in five parts:

1. A guiding social principle to promote source reduction as the core environmental ethic of society - through education
2. Sustainable business practices to incorporate P2 approaches and techniques as an essential part of how successful businesses oprate - through programs like Energy Star, WasteWise and Environmental Accounting.
3. Core government actions, including EPA, other Federal and State regulatory programs, grants reinvention, and enforcement activities.
4. Cleaner technologies and processes to help companies continuously improve quality, competitiveness and environmental stewardship - through partnerships like the Design for the Environment.
5. Safer products to ensure consumer and environmental protection - through activities like the Consumer Labeling Initiative and Environmentally Preferable Products.

External Factors

The ability of the Agency to achieve its strategic goals and objectives depends on several factors over which the Agency has only partial control or little influence. EPA relies heavily on partnerships with states, tribes, local governments and regulated parties to protect the environment and human health. In addition, EPA assures the safe use of pesticides in coordination with the USDA and FDA, who have responsibility to monitor and control residues and other environmental exposures. EPA also works with these agencies to coordinate with other countries and international organizations with which the United States shares environmental goals. This plan discusses the mechanisms and programs that the Agency employs to assure that our partners in environmental protection will have the capacity to conduct the activities needed to achieve the objectives. However, as noted, EPA often has limited control over these entities. In addition, much of the success of EPA programs depends on the voluntary cooperation of the private sector and the general public.

EPA's ability to achieve the goals and objectives is also predicated on an adequate level of resources for direct program implementation by EPA as well as for delegated programs. The objectives in this plan are based on current funding levels. If appropriations are lower or different from requested, some objectives may be difficult or impossible to achieve. Other factors that could delay or prevent the Agency's achievement of some objectives include: lawsuits that delay or stop EPA's and/or State partners' planned activities; new or amended legislation; and new commitments within the Administration. Economic growth and changes in producer and consumer behavior, such as shifts in energy prices or automobile use, could have an influence on the Agency's ability to achieve several of the objectives within the time frame specified.

Large-scale accidental releases (such as large oil spills) or rare catastrophic natural events (such as volcanic eruptions) could, in the short term, impact EPA's ability to achieve the objectives. In the longer term, new environmental technology, unanticipated complexity or magnitude of environmental problems, or newly identified environmental problems and priorities could affect the time frame for achieving many of the goals and objectives. In particular, pesticide use is affected by unanticipated outbreaks of pest infestations and/or disease factors, which requires EPA to review emergency uses to ensure no unreasonable risks to the environment will result. EPA has no control over requests for various registration actions (new products, amendments, uses, etc.), so its projection of regulatory workload is subject to change.

In the absence of regulatory authority and grants to states for indoor environment programs, the voluntary Federal indoor environments program relies heavily on state and local, private, and non-profit partnerships to implement and manage indoor environmental risk reduction activities/programs. Many of our partners and states have small programs that often make it difficult to achieve the desired level of results.

The Agency's ability to achieve its objective of decreasing the quantity and toxicity of waste depends in part on our state partners' commitment to this goal. To help address this potential issue, EPA is working with Environmental Council of States (ECOS) to develop core measures beyond FY 1998 and coordinating with states to develop, for example, the the RCRA Persistent, Bioaccumulative, and Toxics (PBT) list and other tools that will focus State activities on shared EPA and State goals.

In addition, recycling rates are affected by shifts in prices and potential regulatory changes to reduce or eliminate disincentives to safe recycling. While market forces have helped to achieve current rates, better markets for recycled products/recyclables/reusables are needed to encourage increased recycling rates and source reduction. EPA has worked with the Chicago Board of Trade and the Federal Environmental Executive and currently has several other ongoing projects that encourage market development.

Achieving our objective is based upon a partnership with Indian Tribal governments, many of which face severe poverty, employment, housing and education issues. Because Tribal Leader and environmental director support will be critical in achieving this objective, the Agency is working

with Tribes to ensure that they understand the importance of having good information on environmental conditions in Indian country to meet their and EPA needs. In addition, EPA also works with other Federal Agencies, Department of Interior (US Geological Survey, Bureau of Indian Affairs, and Bureau of Reclamation), National Oceanic and Atmospheric Administration, and the Corps of Engineers to help build programs on tribal lands. Changing priorities in these agencies could adversely affect their ability to work with EPA in establishing strategies and regulations that affect Indian Tribes.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Objective # 1: Reduce Public and Ecosystem Exposure to Pesticides

By 2005, public and ecosystem risk from pesticides will be reduced through migration to lower-risk pesticides and pesticide management practices, improving education of the public and at risk workers, and forming "pesticide environmental partnerships" with pesticide user groups.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Public and Ecosystem Exposure to Pesticides	**$48,998.9**	**$43,178.2**	**$51,050.8**	**$7,872.6**
Environmental Program & Management	$35,020.7	$29,219.0	$37,125.2	$7,906.2
Science & Technology	$863.6	$844.6	$811.0	($33.6)
State and Tribal Assistance Grants	$13,114.6	$13,114.6	$13,114.6	$0.0
Total Workyears:	231.6	231.6	241.7	10.1

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Pesticide Registration	$10,253.1	$7,451.4	$10,365.0
Pesticide Reregistration	$4,859.7	$4,856.0	$4,865.7
Endocrine Disruptor Screening Program	$267.8	$267.8	$267.8
Agricultural Worker Protection	$4,768.7	$4,365.2	$5,738.1
Pesticide Applicator Certification and Training	$5,516.2	$5,313.6	$6,765.6
Pesticides Program Implementation Grant	$13,114.6	$13,114.6	$13,114.6

FY 2000 Request

The FY 2000 budget for this objective reflects a requested increase of $7,872,600 over the FY 1999 Enacted Budget. This increase will be directed at the agricultural community to help them transition to safer pesticides as a result of stricter standards under FQPA. The base resources in this objective continue EPA's commitment to protect agricultural workers, to certify and train pesticide applicators, to protect endangered species and ecosystems from the harmful effects of pesticides and to protect our nation's groundwater from pesticide contamination.

Reduce Human Exposure to Pesticide Use

In 2000, through the Certification and Training Program (C&T) and the Worker Protection Program (WP), EPA will increase agricultural workers' awareness and knowledge of pesticides and worker safety. The C&T and the WP programs protect agricultural workers, applicators and the public from the potential dangers posed by pesticides. The C&T program increases the competence of the applicators in handling and applying pesticides. The C&T program provides training and certification (and recertification every five years) of private and commercial applicators of restricted use pesticides. C&T also provides safety training for pesticide handlers and agricultural workers. These efforts are vital to the protection of workers and to the prevention of pesticide environmental contamination.

EPA Regions will focus on three areas of Pesticide Worker Protection.

1. Coordinate with state and tribal partners to assess compliance and evaluate the effectiveness of Worker Protection Standards.

2. Build stronger links to the farm worker community to provide a field level perspective on the effectiveness of the national program.

3. Continue to build better links to the health care community to support a national effort to improve the recognition and management of pesticide related illnesses.

EPA will continue efforts to prevent pesticide misuse, both in rural and urban areas. EPA will also focus on poor communities where there is significant public health risks to residents, especially children and other sensitive populations. To accomplish this goal, EPA will promote product stewardship with product manufacturers and distributors, and work with states to improve their certification and training programs. EPA will also work to improve consumer product labels, pesticide containers and their distribution, and will direct enforcement activities at the sales of agricultural pesticides. EPA will continue its public education campaign, which includes working with low income and minority communities to demonstrate safe and effective pest management and control.

The Groundwater and Endangered Species programs further contribute to preventing pollution and reducing risk to humans and ecosystems from pesticides. The implementation of the Groundwater Strategy will prevent pesticide pollution of the nation's groundwater supplies. This strategy is based on cooperative efforts with states and Regions to develop Pesticide Management

Plans (PMPs). EPA Regional offices will provide guidance and assistance to the states/tribes in development of these plans.

A new effort to prevent or reduce pesticide pollution in the agricultural sector is the Strategic Agricultural Partnership initiative. This initiative will develop pest management strategies which employ alternatives to harmful pesticides and assist the agricultural industry in meeting both state and Federal standards for safe food. EPA will implement 10-15 model agricultural partnership projects that demonstrate and facilitate the adoption of farm management decisions and practices that provide growers with "a reasonable transition" away from the highest risk pesticides (those likely to be lost under FQPA implementation). EPA Regions will facilitate the development of FQPA transition projects with high-profile commodity groups by providing strategic and technical assistance on project design, implementation, and evaluation.

> EPA regions will facilitate broad stakeholder collaborations linking scientists, farmers, industry, and local, state and federal partners to:
>
> 1). Gather data on current application practices, crop pest profiles, and pesticide usage.
>
> 2) Identify concerns regarding the need for high risk pesticides.
>
> 3) Chart paths to more sustainable practices by making the best use of USDA research, EPA accelerated review of safer substitutes, and university supported technical support on alternatives and pest management practices.

Reduce Environmental Exposure to Pesticide Use

Pesticide Environmental Stewardship Program (PESP) and Integrated Pest Management (IPM) are closely related programs that promote risk reduction by using safer alternatives to traditional chemical methods of pest control. PESP is a voluntary program which forms partnerships with pesticide users and other affected parties to reduce both health and environmental risks and while incorporating pollution prevention strategies. Partners and supporters of PESP play vital roles in developing common sense solutions to pesticide risk reduction. PESP supporters have an interest in risk reduction because they use agricultural produce or represent groups which are affected by pesticides. EPA and USDA will continue to encourage and support IPM practices, including the managed use of an array of pest control methods (biological, cultural and chemical) that achieve the best results with the least adverse impact to the environment.

The Endangered Species program will enlist the support of the agricultural community and other interested groups to protect wildlife and critical habitats from pesticides. This voluntary program is carried out through communications and outreach efforts, and in coordination with other federal agencies.

Antimicrobial sterilants and disinfectants are used to kill microorganisms on surfaces and objects in hospitals, schools, restaurants and homes. As such, they play a role in reducing risk in our surroundings, including workplaces and residences. EPA will remain focused on product labeling and product efficacy and in meeting other requirements for antimicrobials.

The Agency will team with our tribal partners to address pesticide issues and enhance the development of tribal technical capacity, particularly in the areas of risk management, worker safety, training, and pollution prevention. The effectiveness of our field programs on tribal lands is directly related to tribal capacity for pollution prevention. In 2000, Agency efforts will include: (1) enhancing tribal environmental program capacity by conducting multi-media risk assessments; (2) providing training and technical assistance for Tribal environmental managers to conduct their own assessments and mitigation activities, with a primary emphasis on pollution prevention, to reduce children's exposure to persistent Bioaccumulative Toxics (PBTs), pesticides, lead and other toxic substances; and (3) pilot testing an initial set of risk assessment guidelines by trained tribal environmental professionals who will conduct the work to determine the feasibility, overall effectiveness and affordability of the guidelines.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$1,700,000, 10.0 total workyears) Initiate a Strategic Agricultural Partnerships Initiative with the agricultural community. Broad stakeholder collaborations will link scientists, farmers, industry, and government partners at the local, state and federal levels. Support for farmers will include both scientific research, alternative practices and flexible, locally-based programs to provide farmers with innovative technical and financial support programs.

- (+$2,373,600) Increased Registration activities, including registration of reduced risk pesticides, and related FQPA activities supporting reduced exposure to pesticides.

- (+$1,130,800) Expanded Pesticide Environmental Stewardship and Design for the Environment program activities to build partnerships with the agricultural community and other stakeholders. These partnerships assist the agricultural community in developing and using alternatives to conventional pesticides.

- (+$825,800) Additional resources for support of pesticide field programs of worker protection, groundwater and certification and training.

- (+$200,000) Initiative to build tribal capacity by developing guidelines for conducting multimedia risk assessments. Tribal managers will conduct their own assessments and mitigation activities, with a primary emphasis on pollution prevention to reduce human exposure to pesticides.

- (-$150,000) Reflects a shift from Goal 4 (Reduce Human and Ecosystems Exposure to Pesticide Use), to establish a permanent fund to improve management of system modernization needs to meet the Reinventing Environmental Information (REI) commitment and other mission needs.

- (+$1,485,900) Increase workforce cost of living.

Annual Performance Goals and Performance Measures

Preventing Harmful Pesticides Exposure

In 2000 Protect homes, communities, and workplaces from harmful exposure to pesticides and related pollutants through improved cultural practices and enhanced public education, resulting in a reduction of 5%, or 20% cumulative, (from 1994 levels) in the incidences of pesticide poisonings reported nationwide.

In 1999 Protect homes, communities, and workplaces from harmful exposures to pesticides and related pollutants through improved cultural practices and enhanced public education, resulting in a reduction of 15% cumulative (1994 reporting base) in the incidences of pesticide poisonings reported nationwide.

Performance Measures	**FY 1999**	**FY 2000**
Environmental Stewardship Strategies	42 Complete	44 Complete
Incidences of pesticide poisonings	15% Reduction (cumulative)	20% Reduction (cumulative)
Labor Population will be adequately trained	38% Trained (cumulative)	46% Trained (cumulative)
Pesticides w/ high probability to leach/persist in groundwater	10% percent managed	15% percent managed

Baseline: The baseline in the 1994 level (15,824 incidences) of worker and household cases of acute pesticide poisoning reported to poison control centers participating in the national data collection system.

Agricultural Partnerships

In 2000 Implementation of 10-15 model agricultural partnership projects that demonstrate and facilitate the adoption of farm management decisions and practices that provide growers with a "reasonable transition" away from the highest risk pesticides.

Performance Measures	**FY 1999**	**FY 2000**
Model agricultural partnership pilot projects	N/A	10-15 Pilots

Baseline: New goal; baseline will be 1999 accomplishment in identifying/establishing partners.

Verification and Validation of Performance Measures

The performance measures for this objective are program outputs for the Field and Environmental Stewardship programs and are used as an indirect measure of reducing risk. The number of workers suffering from adverse effects of pesticides may be derived from various sources such as poison control center data, public health system data, information gathered from the states and public health agencies. The labor population training data may be determined using information from USDA and States. The pesticides considered to be threats to groundwater have been identified and will be used as the base.

Coordination with Other Agencies

EPA coordinates with various state, tribal, and Federal agencies as well as with private organizations to ensure that our strategic approaches to pollution prevention and risk reduction are comprehensive and compatible with efforts already in place. Achievement of this objective depends in part on successful cooperation with our partners and the successful implementation of our regulatory programs. The number of partnerships with private and public entities serves as an effective indicator of EPA's progress in meeting its stated objectives.

Coordination with State Lead Agencies and with U. S. Department of Agriculture provides added impetus to the implementation of the Certification and Training program. States also provide essential activities in developing and implementing the Endangered Species, Groundwater, and Worker Protection programs. States are involved in numerous special projects and investigations, including emergency response efforts. The Regions provide technical guidance and assistance to the states and tribes in the implementation of all pesticide program activities.

EPA uses a range of outreach and coordination approaches for pesticide users, for agencies implementing various pesticide programs and projects, and for the general public. Outreach and coordination are essential to protect workers, endangered species, and groundwater; to provide training of pesticide applicators; to promote integrated pest management and environmental stewardship; and to support compliance through EPA's regional programs and those of the states and tribes.

In addition to the training that EPA provides to farm workers and restricted use pesticide applicators, EPA works with the state Cooperative Extension Services designing and providing specialized training for various groups (e.g., training to private applicators on the proper use of personal protective equipment and application equipment calibration, how to handle spill and injury situations, farm family safety, how to prevent drift, and pesticide and container disposal). Other specialized training is provided to public works employees on grounds maintenance, to pesticide control operators on proper insect identification, and on weed control for agribusiness.

Statutory Authorities

Federal Fungicide, Insecticide and Rodenticide Act (FIFRA)

Federal Food, Drug and Cosmetic Act (FFDCA).

Food Quality Protection Act (FQPA) of 1996.

Clean Water Act

Objective # 2: Reduce Lead Poisoning

By 2005, the number of young children with high levels of lead in their blood will be significantly reduced from the early 1990's.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Lead Poisoning	**$30,844.6**	**$30,817.4**	**$29,213.5**	**($1,603.9)**
Environmental Program & Management	$17,132.4	$17,105.2	$15,501.3	($1,603.9)
State and Tribal Assistance Grants	$13,712.2	$13,712.2	$13,712.2	$0.0
Total Workyears:	119.3	119.3	119.3	0.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Lead Risk Reduction Program	$16,928.7	$16,911.3	$14,986.3
Grants to States for Lead Risk Reduction	$13,712.2	$13,712.2	$13,712.2

FY 2000 Request

The FY 2000 budget for Lead Risk Reduction reflects a decrease of $1,620,500 over the FY enacted budget. This decrease is a result of completion of some regulatory work and a postponement of outreach and public education projects. During FY 2000, EPA will implement the Lead

Certification and Training Program in all fifty states. EPA will also promulgate two major lead rules, the debris and lead hazard standards rules. In the lead regulatory program, EPA will develop 3 proposals, setting standards for training and certification for lead-based paint abatement activities in public and commercial buildings, bridges, and superstructures, and reconversion and remodeling. These activities will make significant contributions to the objective of reducing the blood lead levels of our nation's most vulnerable children.

Childhood lead poisoning is a serious, yet preventable environmental illness. Blood lead levels as low as 10 micrograms per deciliter (μg/dl) are associated with children's learning and behavioral disorders. High blood lead levels cause devastating health effects, such as seizures, coma, and death. Over the past 30 years, the U.S. has made great progress in combating this disease by addressing a wide range of sources of lead exposures. The Federal government has phased out lead in gasoline, reduced lead in drinking water, and banned or limited lead use in consumer products, including toys, food cans, and residential paint. States and municipalities have initiated programs to identify and treat lead poisoned children and to rehabilitate deteriorated housing. Parents, too, greatly contributed to reducing their children's exposure to lead. The U.S. children's blood lead levels significantly decreased during the 1970's and 1980's. The most recent data released by the U.S. Department of Health and Human Services (HHS) show that average blood lead levels in children dropped to about 3 μg/dl during 1991-1994.

Notwithstanding these successes, much remains to do. HHS data show that almost one million children under six still have blood lead levels above 10μg/dl, with a disproportionate number of them living in inner cities; thus, lead poisoning is a significant concern associated with environmental justice issues. There are also significant numbers of children living in suburban and rural areas that suffer from lead poisoning.

EPA's current lead program focuses on the primary source (lead based paint) of lead-poisoning in children in the U.S. today. A 1991 report issued by the Department of Housing and Urban Development (HUD) showed that lead-based paint was used in millions of older homes and housing units in the United States. Studies showed that lead-based paint has a tendency to become incorporated in household dust as it cracks and weathers, lead paint also may chip or release particles into the air as a result of routine friction on impact surfaces (such as windows, window sills, doors). Young children may ingest the lead-contaminated dust during typical childhood behavior such as crawling on floors and then putting their fingers in their mouth or mouthing toys or other objects that are covered with contaminated dust. Some children exhibiting pica behavior (a chronic tendency of mouthing or eating non-food objects) could also swallow paint chips and be lead poisoned. The infrastructure is designed to meet the need of homeowners that have access to safe, reliable and effective methods to reduce children's exposure to lead-based paint.

EPA, under the 1992 Residential Lead-Based Paint Hazard Reduction Act (Title X), contributes to solving this environmental lead problem by assisting, and guiding, federal activities aimed at reducing the exposure of children in homes with lead-based paint. Other Federal agencies, such as the Departments of Housing and Urban Development (HUD) and Health and Human

Services (HHS), via the National Institute for Occupational Safety and Health and the Centers for Disease Control and Prevention, also play important roles. In the past six years, EPA has made great strides in protecting children from lead poisoning, by a combination of rulemaking, education, research, and partnerships. EPA has promulgated regulations to set up a federal infrastructure, including the lead accreditation, certification and workplace standards rule for targeted housing, and the lead real estate notification and disclosure rule (with HUD). The Agency has also recently proposed rules on identifying hazardous levels of lead in paint, soil, and dust. The public education programs and tools developed include a national clearinghouse to provide the public with information on lead; grants to states and tribes to establish accreditation, certification and workplace standards programs for target housing; and a recently promulgated rule requiring disclosure of information about hazards during renovation and remodeling of housing with lead-based paint. In 1998 EPA provided $450,000 in grants to support community-based organizations in public education and outreach in nine communities. Nearly 400 applications for this grant program were received, with proposals totaling over $20,000,000.

By the year 2000, those states and tribes that intend to run section 402 programs for lead accreditation certification, and workplace standards in target housing will be approved. However, all states will not adopt the program and we anticipate that EPA will be required to run a Federal lead program in 15 to 20 states and in most of the tribal lands and U.S. territories. Federally run state programs will require additional resources, a portion of which will be offset by fees.

Since the enactment of Title X in 1992, EPA has promulgated a number of lead regulations, but the statute requires several more rules. By the end of 2000, the Agency will submit to OMB for review final rules on disposal of lead-based paint debris and establish standards for hazardous levels of lead in paint, dust and soil. In addition, the Agency will continue to develop proposals for lead abatement in renovation and remodeling, commercial buildings and bridges and superstructures, and anticipates proposing rules for these in FY 2000.

By 2000, a national infrastructure will be in place to ensure that homeowners and renters have access to qualified lead abatement professionals that are properly trained to identify and safely reduce lead hazards in the home.

FY 2000 Change from FY 1999 Enacted

EPM

- (+1,000,000) This investment support acceleration of three key rulemakings in the lead program, to establish standards for lead-based paint abatement for renovation and remodeling, for public and commercial buildings, and for bridges and superstructures.

- (+$283,100 +1.0 workyears) Building tribal capacity by developing guidelines for conducting multimedia risk assessments.

- (+$324,400) Increase in workforce cost of living.

- (-$1,200,000) This decrease reflects the completion of or reduction in lead program activities in the following areas: 405(d) implementation plans, outreach projects targeted to high risk communities, renovation and remodeling course curriculum development, model training courses and course revisions.

- (-$2,000,000) 1999 Congressional add for lead outreach, will expire in 2000.

Annual Performance Goals and Performance Measures

Lead-based Paint Abatement Certification and Training

In 2000 Administer federal programs and oversee state implementation of programs for lead-based paint abatement certification and training in 50 states, to reduce exposure to lead-based paint and ensure significant decreases in children's blood levels by 2005.

In 1999 Complete the building of a lead-based paint abatement certification and training program in 50 states to ensure significant decreases in children's blood lead levels by 2005 through reduced exposure to lead-based paint.

Performance Measures	**FY 1999**	**FY 2000**
Develop state programs for the training, accreditation and certification of lead-based paint abatement professionals.	35 States	30-35 States
A Federal training, accreditation and certification program will be established and administered in states which choose not to seek approval from EPA to administer	15 Programs	15-20 Programs

Baseline: Approved programs will lead to additional homes abated and certified clean of lead.

Lead Regulatory Standards

In 2000 Prepare final rules for disposal of lead-based paint debris and establish standards regarding hazardous levels of lead in paint, dust and soil.

In 1999 Promulgate final rules on disposal of lead-based paint debris and establishment of standards regarding hazardous levels of lead in paint, dust, and soil.

Performance Measures	**FY 1999**	**FY 2000**
Lead Debris Disposal Rule	1 Proposed	09/30/2000
Lead Hazard Standards Rule - develop final	1 Final developed	09/30/2000

Baseline: Regulations and standards, where none previously existed, will promote safer homes and workplaces. Disposal rule reduces costs of lead paint abatement. Hazard standards set consistent guidelines for lead paint abatement.

Training, Accreditation and Certification for Lead-Based Paint Activities

In 2000 Prepare rules on training, accreditation and certification requirements for renovation and remodeling activities and training, accreditation and certification requirements for lead-based paint activities in buildings and superstructures.

In 1999 Issue proposed rules on training, accreditation and certification requirements for renovation and remodeling activities and training, accreditation and certification requirements for lead-based paint activities in buildings and superstructures.

Performance Measures	**FY 1999**	**FY 2000**
Lead Renovation Information Rule	1 Promulgated	
Develop proposed rules for OMB review	1 Devel. proposal	09/30/2000 Devel. Pr

Baseline: Rule development initiated in 1998; no consistent standard for abating lead paint for renovation or buildings/superstructures existed prior to Title X.

Publication of Lead-based Technical Reports to Support Regulatory Efforts

In 2000 Publication of technical reports to support regulatory efforts and program policies covering: 1) extent of lead or lead hazards 2) link between environmental lead and blood lead levels 3)analytical methods or protocols 4)abatement or control of lead or lead hazards or 5) Natl Lead Lab Accreditation Program

Performance Measures	**FY 1999**	**FY 2000**
Number of technical reports published		15 Reports

Baseline: Information will enhance and fill gaps in scientific knowledge of lead hazards and best methods for abatement.

Verification and Validation of Performance Measures

The accomplishment of EPA's broader lead poisoning reduction goals (e.g., lead rule promulgation, certified training programs, completed technical reports, etc.) will be verified by realizing a significant reduction of children's blood lead levels compared to levels in the 1970's. For the past two decades, the National Center for Health Statistics (NCHS) has collected data on the general health of the nation's population through the National Health and Nutrition Examination Survey (NHNES). The collection and laboratory analysis of children's blood for lead has been part of this program since its inception and has become the standard for the estimation of national blood lead averages. It is also the only national survey of children's blood lead levels. NCHS is preparing

to begin another survey. Data collected by the HHS' National Center for Health Statistics (NCHS) will be used to measure the effectiveness of this national infrastructure, along with additional actions by other Federal agencies, in reducing childhood exposure to lead-based paint and decreasing the incidence of lead poisoning among children. NCHS' National Health and Nutrition Examination Survey (NHANES) will be used to estimate national blood lead levels in the US population. This survey is currently in the planning phases; data are expected to be available in 2002. Performance measures for that year will include a description of appropriate data collection and verification procedures for those data. The verification and validation of data from NHANES will be conducted by NCHS through a rigorous quality assurance program to ensure that the sample selected for examination is truly representative of the U.S. population and that laboratory analyses of collected blood samples are of known accuracy and precision. NCHS has over 20 years experience in conducting this survey and these analyses.

In addition, EPA will evaluate the effectiveness of regulations previously promulgated. Through mechanisms including focus groups and surveys, the Agency will measure awareness and any changes in behavior of the regulated community as a result of these regulations.

Coordination with Other Agencies

The success of EPA's lead program depends in large part on coordination with other Federal agencies, states and Indian tribes. In 2000, EPA will continue to develop a number of rules which will require close coordination with HHS, HUD and the Occupational Safety and Health Administration (OSHA). EPA will also work closely with state and Federally recognized Indian tribes to ensure that 1) authorized state and tribal programs continue to comply with requirements established under the Toxic Substances Control Act (TSCA); and 2) the Federal target accreditation housing certification and training program for abatement contractors is effectively implemented.

Statutory Authorities

Toxic Substances Control Act (TSCA) section 6 and TSCA Title IV (15 U.S.C. 2605 and 2681-2692)

Safe Drinking Water Act sections 1412 and 1417 (42 U.S.C. 300g-1, 300g-6)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. 9601-9675)

Resource Conservation and Recovery Act (RCRA)

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Objective # 3: Safe Handling and Use of Commercial Chemicals and Microorganisms

By 2005, of the approximately 2,000 chemicals and 40 genetically engineered microorganisms expected to enter commerce each year, we will significantly increase the introduction by industry of safer or "greener" chemicals which will decrease the regulatory management by EPA.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Safe Handling and Use of Commercial Chemicals and Microorganisms	**$44,750.6**	**$42,443.2**	**$56,874.1**	**$14,430.9**
Environmental Program & Management	$32,007.1	$31,206.6	$45,378.1	$14,171.5
Science & Technology	$12,743.5	$11,236.6	$11,496.0	$259.4
Total Workyears:	349.1	344.5	347.1	2.6

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Endocrine Disruptor Screening Program	$1,599.9	$1,257.4	$3,667.1
New Chemical Review	$14,139.6	$13,409.6	$13,926.9
Existing Chemical Data, Screening, Testing and Management	$12,491.2	$12,870.0	$23,045.6
National Program chemicals: PCBs, Asbestos, Fibers,and Dioxin	$3,300.8	$3,011.9	$3,289.2

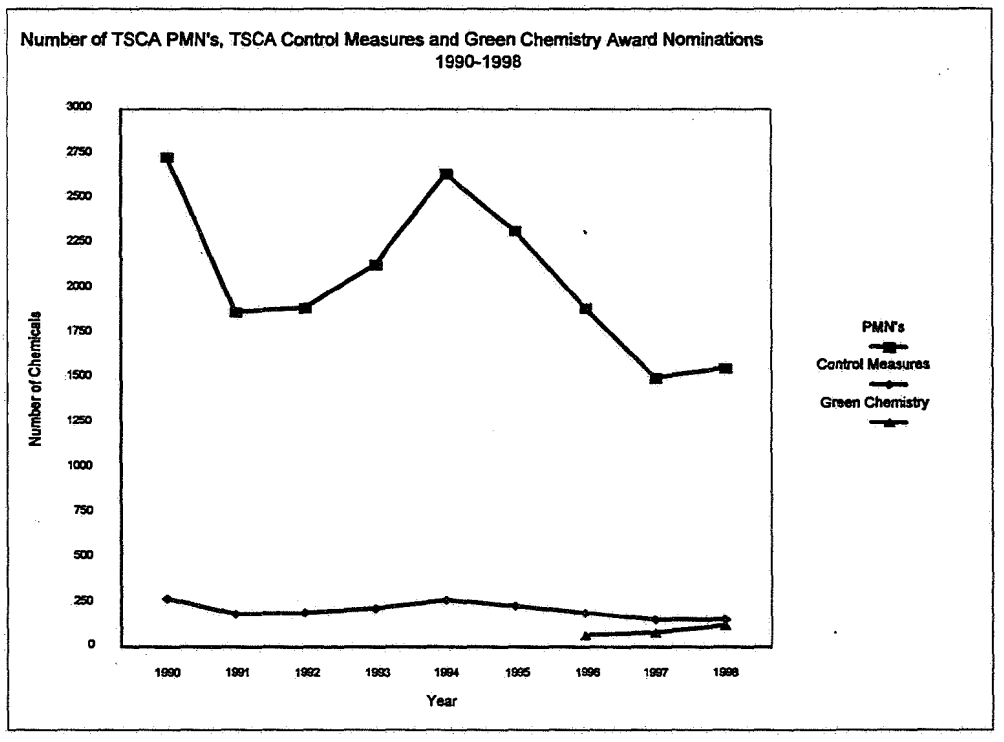
FY 2000 Request

Background

This objective includes work in four broad program areas, including existing chemicals (chemicals in commerce), new chemicals (chemicals in the process of commercialization), national program chemicals (including mercury, fibers, dioxin, and PCB's), and the endocrine disruptor screening and testing program. These programs are pivotal to reducing current and future risk by promoting the design, development, and application of safer chemicals, processes and technologies in the industrial sector. The major program enhancement in FY2000 is the Chemical Right-to-Know (CRTK) Initiative. Currently there is little information available on the potential risks of the 2,800 chemicals produced in the highest volumes in the U.S. Working in partnership with industry, the Agency will begin to carry out basic screening tests on these chemicals.

New Chemicals Program

The Toxic Substances Control Act (TSCA) requires EPA to review a chemical or microorganism before commercialization (i.e., a "new" chemical) to determine whether it can be handled and used safely. If the review shows that an unreasonable risk may be posed to people or the environment, control measures are put in place to ensure the chemicals' safety in the marketplace. Since 1979, EPA has reviewed more than 33,000 premanufacture notices (PMN) and taken actions to control risks for about 10% of these chemicals. As part of its review of new chemical substances the Agency has developed an array of innovative, efficient screening mechanisms. A number of these tools have been made available to industry to assist in product development and improvements.



The Agency fosters safer chemicals and safer chemical production in a variety of ways, through regulatory reinvention, through voluntary programs, and through outreach and technical assistance. Looking at conventional chemicals, EPA sees tremendous opportunities for increasing the introduction and use of safer or "greener" chemicals as another way to build on the success of the New Chemicals program. Safer or "greener" chemicals are less toxic, result in lower exposure, are more energy efficient, generate less (or less toxic) waste, or have other similar attributes. The more such chemicals are available to replace harmful chemicals currently in use, the greater will be the opportunity to achieve safer workplaces and communities. Green Chemistry Challenge Awards are made annually to the top entries for new safer chemicals, safer manufacturing processes and alternative solvents. As part of a new chemical review for a conventional chemical, the Agency routinely works with industry to share any options and suggestions it may have on process improvements, to produce new chemicals more safely. Another example is new biotechnology products, which the New Chemicals Program also examines to ensure that adequate testing has been done before their release into the environment. In many cases, biotechnology products can contribute to source reduction or provide safer substitutes. Recent regulatory changes have lead to an increased rate of new biotechnology products submitted for review. Other outreach and technical assistance to encourage safer chemicals and chemical production include a reference compendium, laboratory manuals, symposia and actual coursework materials, all developed in partnership with industry, professional organizations and universities.

Existing Chemicals Program

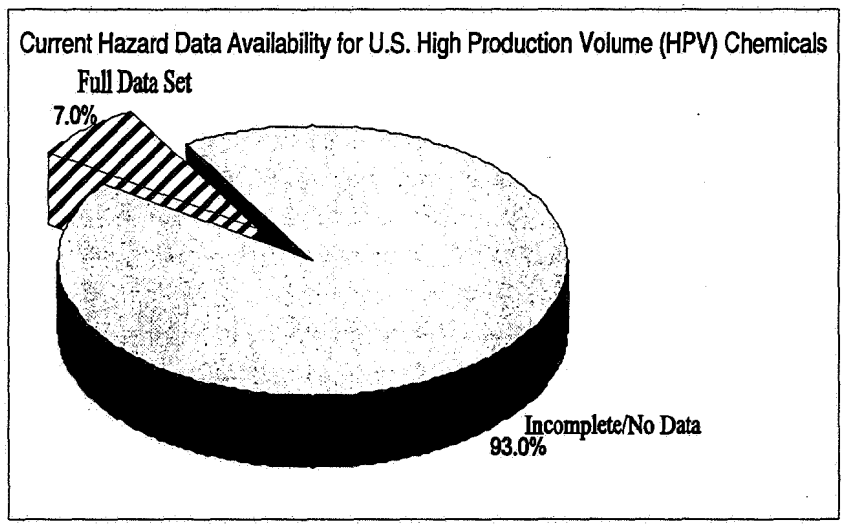
A crucial element of EPA's approach to promoting industry's introduction of safer chemicals is to fulfill the mandate under TSCA to identify and control unreasonable risks associated with chemicals which are already in commerce. The identification of existing chemicals that pose risks provides additional incentives for industry to look for new chemicals or processes that are safer. Chemical information, especially data on exposures as well as health and environmental effects, is essential for screening, assessing and managing chemical risks. In dealing with the more than 75,000 chemicals currently in commerce, EPA has worked in partnership with other Federal agencies, industry, and other customers, to develop both traditional regulatory and innovative non-regulatory approaches to control unreasonable risks. Certain chemicals are manufactured or used on a limited basis and risk-control measures can be more localized. Others are present in quantity and across a wide geographic area, and a national program is needed to mitigate the risks. Today, risk management controls are already in place or planned for many chemicals whose risks are well-characterized, e.g., asbestos and polychlorinated biphenyls (PCBs). In 2000, the Agency will expand the range of existing chemicals it will screen, as part of the Chemical Right-to-Know Initiative.

Chemical Right-to-Know Initiative

The requested increase under the Existing Chemicals Program is for the Chemical Right-to-Know Initiative. This initiative will focus on the 2,800 highest production volume chemicals used in the U.S. We have no hazard information for many of these chemicals that we use daily in

virtually every aspect of our lives. Only 7 percent of the 2,800 have a full set of basic information on health and environmental effects; only 25 percent of consumer chemicals have the full set.

Without this information, we are severely handicapped in our efforts to identify and control the human health and environmental risks posed by these chemicals. In addition, relatively little is known about the potential impacts on children's health of many chemicals, including those that are widely used in children's products or otherwise have high potential for exposure to children. Similarly, relatively little is known about the class of chemicals that are the most persistent, bioaccumulative, and toxic - so called PBT's - and their potential links to significant health and environmental concerns. PBT's are toxic chemicals that do not degrade over time in the environment, and that build up in the tissues of animals (including humans) that are exposed to them directly or through the food chain.



With the Chemical-Right-to-Know Initiative, all 2,800 High Production Volume chemicals will be put into an accelerated schedule for basic screening-quality hazard testing through a voluntary industry challenge program and a series of test rules for those data not obtained through the voluntary program. The results will be broadly disseminated to the public in an easy-to-use format. The Agency will also take action to eliminate exposures to any newly identified risks. Chemicals that children are disproportionately exposed to will also be subject to additional testing, under the Children's Test Rule scheduled for proposal in 1999. Any PBT chemicals that are identified will become part of facilities' routine TRI (Toxic Release Inventory) reporting. The result will be that the real risks from PBT's will be better documented, affording better opportunities for reducing the existing risks and avoiding future contamination. Another important part of tracking risk is information on how the chemical is used. Use information will allow the Agency to identify chemical exposure pathways and unsafe uses, define the chemicals by specific "use clusters," assess risks associated with exposures, and identify the applicable "universe" of household chemicals. EPA will amend its Inventory Update Rule to develop a Chemical Use Inventory (CUI) System as another tool for carrying out risk reduction strategies.

The underlying need for the Chemical Right-to-Know Initiative is the startling lack of critical information on chemicals, and their exposures and uses, already prevalent in the marketplace. This Initiative will help prioritize national chemical risk management and increase the amount of

information on chemical exposures, hazards and risks that EPA can provide to the public. Communities will be empowered with this new information to take action to reduce their risks, complementing Agency efforts to address the human health and environmental risks that these chemicals present. This new information will incorporate innovative approaches, such as chemical classification and labeling systems, to advise users and consumers of chemical hazards and risks.

Further, information on toxic chemicals will be made available to state and local governments to help them conduct risk assessment and management activities.

National Program Chemicals

Some chemicals were introduced into commerce before the risks were known. Some of these chemicals are both prevalent and high-risk. The Agency has established a national program to manage reductions in use, safe removal, disposal or containment of these chemicals, as appropriate. Significant risks are well established for PCBs, asbestos, and dioxin, for example, and reductions in use and releases are important to reducing exposure of the general population and also sensitive subpopulations. Risk reduction efforts on these chemicals will continue to meet the mandates under TSCA and fulfill the commitments made in domestic and international agreements.

In 2000, EPA's PCB control efforts will shift from enforcing PCB use standards toward encouraging phase out of PCB electrical equipment, ensuring proper waste disposal methods and capacity, and fostering PCB site cleanups. The Agency will also pursue opportunities for improved risk reduction for mercury, and for certain industrial fibers that pose risks in the workplace. Outreach and technical assistance will continue in the asbestos program for schools, in coordination with the Occupational Safety and Health Administration and the states.

EPA is committed to developing an Agency-wide dioxin strategy that would respond to new scientific findings concerning the dangers of dioxin and address dioxin risk management in a more comprehensive cross-media approach. EPA will continue efforts on reducing dioxin exposure, focusing on identifying and quantifying the link between dioxin sources and the general population exposure. Gaining this understanding is central to the successful implementation of an effective dioxin strategy.

Endocrine Disruptor Program

EPA established the Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC), to provide advice and counsel to the Agency on a strategy to screen and test chemicals and pesticides that may cause endocrine disruption in humans, fish, and wildlife. EDSTAC's recommendations were published in 1998. EPA must implement the strategy by August 1999 and report to Congress by August 2000. During 1999, EPA will begin the validation of a recommended screening test protocol and will complete it in 2000. EPA then will begin testing chemicals in commerce for endocrine disrupting potential. It is expected that by 2005, all high production volume

chemicals will have been screened for endocrine disrupting potential and the resulting priority chemicals will have been tested, or testing will have been initiated, using the approach and test methods developed from recommendations of the EDSTAC.

Research

There are over 20,000 pesticide products containing 620 active ingredients on the market. Each year, 1 billion pounds of active ingredients in conventional pesticides are applied in the United States. There are over 80,000 existing chemicals on the TSCA inventory and each year an additional 2,000 chemicals are added. Release of these chemicals into the environment through agricultural and nonagricultural application and other means poses serious risks to both human health and ecosystems (e.g., plant and wildlife). The human health and ecosystems research programs described below are designed to provide direct support to EPA's regulatory program for pesticides and toxic substances.

The methods and models are used to obtain data needed to meet the mandates of TSCA and FIFRA. The continued development and validation of improved human health and ecological risk assessment methods is a high priority research need for the Agency's regulatory program for pesticides and toxic substances. The efforts described here represent an applied research program that is directly responsive to current regulatory issues. Individual research projects support both pesticides and toxic substance performance objectives. For that reason, research for the two objectives is housed here. Much of the human health and ecosystems exposure research described under Sound Science (Goal 8, particularly 8.1 and 8.2) is integral to the research program described here.

Human Health Effects:

Humans are exposed to thousands of chemicals either singly or in various combinations every day through the air, drinking water, food, and dust. The goal of the health effects research program is to develop and validate methods to detect, characterize and quantify adverse human health effects that result from exposure to pesticides and other toxic substances; develop and validate models to predict the human health effects of exposure to pesticides and other toxic substances; and provide data on the health effects of selected pesticides and other toxic chemicals, alone or in combination.

In 2000, research will continue to focus on: 1) development of mechanistically-based predictive models for human health risk assessment, such as structure-activity-relationship models to help determine testing needs under Section 5 of TSCA, which addresses new chemicals, and 2) development of data on chemical-specific effects, such as for those toxic chemicals, including pesticides, identified as high priority from a regulatory perspective.

The information developed from application of these methods will significantly increase understanding of the impacts of specific pesticides and toxic substances on human health. The Agency will incorporate these methods into its collection of testing guidelines under which manufacturers will be required to submit data to the Agency on pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and toxic substances under the Toxic Substances Control Act (TSCA).

Ecological Effects:

Over the long term, ecosystems degradation poses one of the most serious risks to human health and economic sustainability. Our Nation's ecosystems provide valuable renewable resources such as food, fiber, water storage, and wood. Stresses to the environment can impact these resources and other critical self-purifying environmental processes. Understanding the effects of exposures to environmental stressors and the uncertainties surrounding risk associated with our current definitions of stressors on our environment is an important long-term research goal. Ecosystems protection remains a high priority area due to the need for better understanding of environmental stressors and their impacts on the health and sustainability of ecosystems. The mechanisms and consequences of changes in the biological, chemical and physical attributes of ecosystems due to stressors are poorly understood and represent significant challenges to the research community.

In 2000, the Agency will continue to support research to improve our understanding of ecosystem stressors. Efforts will continue to focus on: 1) developing and validating predictive models (e.g., biologically-based dose-response, structure-activity-relationship) to identify and characterize ecological hazard and risk, 2) developing hazard identification techniques for numerous ecological health end points for various wildlife species, and 3) evaluating data on the direct stressor effects of toxic chemicals, including pesticides, on experimental ecosystems, including wildlife species, and on interactions of such exposures with other anthropogenic and/or natural stressors. This program is consistent with the Agency Strategic Plan for research.

FY 2000 Change from FY 1999 Enacted

EPM

- (+ $14,000,000) Investment in the Chemical Right-to-Know Initiative. The initiative is designed to ensure a quick start, in partnership with industry, for accelerated testing of chemicals with the highest risk potential, and includes a special emphasis on both documentation and reduction of risks from PBT's.

- (+$2,100,000) Investment in the screening of chemicals for endocrine disrupting properties. This investment will allow the Agency to begin to implement the strategy advised by the EDSTAC, and to begin the validation of a recommended screening test protocol.

- (+$561,400) Increase for workforce cost of living.

- (-$2,600,000) Redirected resources from the existing chemicals program will support chemical right-to-know initiative. Disinvestment from lower priority activities including exposure assessment methods development, information reporting support, test guidelines regulatory support and data management efforts.

Research

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

New Chemicals and Microorganisms Review

In 2000 Ensure that of the up to 1800 new chemicals and microorganisms submitted by industry each year, those that are introduced in commerce are safe to humans and the environment for their intended uses.

In 1999 Ensure that of the approximately 1800 new chemicals and microorganisms submitted by industry each year, those that are introduced in commerce are safe to humans and the environment for their intended uses.

Performance Measures	FY 1999	FY 2000
TSCA Pre-Manufacture Notice Reviews	1800 Notices	1800 Notices

Baseline: Over 33,000 PMN's reviewed; increasing trends in number of 'greener' or safer chemcials reviewed.

Green Chemistry Challenge Awards

In 2000 Continue to stimulate development of new safe ("green") chemicals and safe chemical processes through public recognition for outstanding achievements in this field.

In 1999 Continue to stimulate development of new safe ("green") chemicals and safe chemical processes through public recognition for outstanding achievements in this field.

Performance Measures	FY 1999	FY 2000
Green Chemistry Challenge Award	50 Applications	50 Applications

Baseline: Cumulative number of companies, organizations and individuals (160) competing for Green Chemistry Award.

Testing of Chemicals in Commerce for Endocrine Disruptors

In 2000 Begin testing chemicals in commerce for endocrine disrupting potential.

In 1999 Begin testing chemicals in commerce for endocrine disrupting potential.

Performance Measures	FY 1999	FY 2000
Develop program to screen 5,000 chemicals for endocrine disruption potential	Develop Program	
Implement screening for endocrine disruption potential		5000 Chemicals

Baseline: Universe of 87,000 chemicals including pesticides, commodity chemicals, food additives, cosmetics and others. Screening and testing strategy completed in 1998.

Chemical Right-to-Know Initiative

In 2000 Expand EPA's ability to conduct safety reviews of chemicals already in commerce, and implement a strategy for comprehensively screening, testing, classifying and managing the risks posed by commercial chemicals, with an emphasis on high production volume chemicals.

In 1999 Expand EPA's ability to conduct safety reviews of chemicals already in commerce and implement a strategy for comprehensively screening, testing, classifying and managing the risks posed by commercial chemicals, with an emphasis on high production volume chemicals.

Performance Measures	FY 1999	FY 2000
TSCA Chemical Use Inventory Rule	1 Proposed	
Under Chemical Right-to-Know Initiative, secure voluntary agreements from chemical manufacturers to test high production volume chemicals		1000 Chem Agreements
Through chemical testing program, obtain test data for high production volume chemicals on master testing list.		50 Test Data

Baseline: Number of chemicals for which voluntary testing agreements are secured or for which test data are obtained, from start of Chemical Right-to-Know initiative. Of 2,800 high volume productions chemicals, 7% have full data.

Address Toxic Fiber Risks

In 2000 Reduce exposure to toxic fibers by identifying fibers of concern and addressing risks through outreach, voluntary initiatives, and regulatory actions.

Performance Measures	FY 1999	FY 2000
Prepare proposed revisions to Asbestos Model Accreditation Plan, Asbestos-in-Schools Rule, and Asbestos Worker Protection Rule.		02/28/2000 Proposed
Initiate implementation of voluntary risk-reduction agreement with RCF industry coalition		1 Agreement
Launch cooperative interagency strategy for assessing and managing risks from other fibers.		1 Strategy

Baseline: Current level of exposure of public and workers to asbestos and other fibers of concern (e.g. ceramic).

Safe PCB Disposal

In 2000 Reduce the industrial burden and costs of managing the safe disposal of PCBs

In 1999 Reduce the industrial burden and cost of managing the safe disposal of PCBs by implementing the PCB rule.

Performance Measures	FY 1999	FY 2000
Revisions to PCB Disposal Amendments, Non-liquid PCB use authorization, Transboundary movement of PCBs	5 Proposed	09/30/2000 Rules

Baseline: Amount of PCB's that were in storage for disposal as of 1995; cost estimates baselines prepared for rulemakings.

Research

Research on Commercial Chemicals and Microorganisms

In 2000 Provide methods and models to evaluate the impact of environmental stressors on human health and ecological endpoints for use in guidelines, assessments, and strategies.

In 1999 Improve in vitro screening methods for one-electron mechanisms of toxicity among industrial chemicals.

Performance Measures	FY 1999	FY 2000
Peer reviewed publication on the in vitro screening methods for one-electron reactions.	30-SEP-1999	

Develop an animal model to assess susceptibility of the developing immune system to environmental contaminants.	1 model

Baseline: Performance Baseline: Methods and models are needed to evaluate the impact of environmental stressors on human health and ecological endpoints for use in guidelines, assessments, and strategies. Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures

Performance will be measured by the number of new chemical Pre-Manufacture Notice submissions (PMN's) that are determined by EPA to pose reduced risk relative to chemicals they replace and that are determined not to require EPA management controls. PMN submissions and determinations are tracked under formal EPA document management and decision-making systems to ensure compliance with statutory deadlines for Agency action. The "greener" the new chemical EPA receives for review, the more success achieved in protecting human health and the environment. Performance will also be measured by how much knowledge we gain in understanding the risks of toxic chemicals to human health and the environment. EPA will gain this knowledge through required and voluntary chemical testing by industry. When EPA identifies specific risks posed by toxic chemicals, performance will be judged by its success in mitigating risk through actions such as labeling or restricting or banning the chemical or its use in certain products. These counts will be drawn from formal regulatory action tracking systems maintained by EPA that have thorough QA/QC procedures to ensure the integrity of the data maintained therein. Last, success will be judged by lowering risk through preventing pollution and achieving this through voluntary compliance over regulated controls.

The Chemical Right-to-Know initiative and the Endocrine Disruptor screening and testing project are both major efforts EPA is undertaking to ensure commercial chemicals are adequately tested for health and environmental effects and that this data is available to the public. Performance of the Chemical Right-to-Know initiative will be measured by tracking the number of chemicals for which EPA has received commitments to complete screening-level testing from chemical manufacturers and by tracking the number of chemicals covered by regulations requiring chemical testing. Verification of program performance for the Endocrine Disruptor screening and testing program can be determined by tracking the number of chemicals that have been tested by EPA with the recommended protocols.

Most performance measures for FY2000 for PCBs and fibers, including asbestos, are program accomplishments that impact risk reduction. They include Agency rule makings for PCBs and for asbestos. Verification and validation of data takes place as a required part of the rulemaking procedure and accompanying formal risk assessment, as well as public notice and comment. The program will also develop a voluntary risk-reduction agreement with the refractory ceramic fiber (RCF) industry coalition as well as a strategy for assessing and managing the risks associated with

exposure to other fibers. As part of the development of the voluntary with the RCF industry, appropriate quality assurance/quality control procedures will be established to ensure the collection of valid and verifiable data.

Due to the nature of analytical measurement of dioxin in environmental media, extra precautions are taken during field sample collection and laboratory analysis for dioxin. A very rigorous quality assurance/quality control program ensures that all attempts are made to eliminate contamination of samples during collection in the field and in the laboratory. This quality assurance/quality control plan also ensures that database development from laboratory analyses is accurate and verifiable. For PCBs commercial storage and disposal rates are tracked through a self reporting system by the industry for completion of the PCB Annual Report. These data are used to track the reduction of burden and costs of managing the safe disposal of PCBs.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

Chemical testing data provide an important contribution to the worker safety mission of the Occupational Safety and Health Administration (OSHA), the research focus of the National Institute for Occupational Safety and Health (NIOSH), and the labeling and consumer use interest of the Consumer Product Safety Commission (CPSC). The data is used in these agencies' chemical risk management and regulatory programs. EPA frequently consults with the agencies on project design, progress and the results of chemical testing projects.

Mitigation of existing risk is a common interest for several federal organizations addressing issues of asbestos and PCB's already in use. EPA will continue to coordinate strategies for assessing and managing risks from asbestos and other fibers with CPSC, OSHA and NIOSH. Safe PCB disposal is the emphasis of ongoing coordination with the Department of Defense, and particularly the Navy which has special concerns involving ship scrapping. PCB's and mercury storage and safe disposal are also of importance to the Department of Energy as alternatives and better technologies for handling these high-risk chemicals are sought.

Research

EPA is among six agencies within the federal government that conduct intramural human and environmental health research (EPA, NIEHS, NCI/NIH, CDC, FDA, and ATSDR). The Agency conducts research in all elements of the human health risk assessment paradigm (e.g., exposure, effects, risk assessment, and risk management), making our contribution unique within the Federal government. EPA is widely recognized both nationally and internationally for its work in identifying the relationship between human health effects and exposure to environmental pollutants. Basic research on the mechanisms underlying these effects and problem driven research programs contribute significantly to the Agency's ability to fulfill its goals and objectives under several environmental mandates. Collaborations with other Federal and international research organizations create an atmosphere in which the impact of the individual programs is strengthened and the overall positive impact on public health is significantly increased.

Statutory Authorities

Toxic Substances Control Act (TSCA) section 4 , 5, 6, 8, 12(b) and 13 (15 U.S.C. 2603-5, 2607, 2611 and 2612)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) sections 3, 4, 5, 6, 11, 18, 24, and 25 (7 U.S.C. 136a, 136a-1, 136c, 136d, 136i, 136p, 136v, and 136w)

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Objective # 4: Healthier Indoor Air

By 2005, fifteen million more Americans will live or work in homes, schools, or office buildings with healthier indoor air than in 1994.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Healthier Indoor Air	**$34,017.6**	**$29,629.4**	**$40,778.6**	**$11,149.2**
Environmental Program & Management	$20,874.7	$16,662.1	$30,816.3	$14,154.2
Science & Technology	$4,984.9	$4,809.3	$1,804.3	($3,005.0)
Building and Facilities	$0.0	$0.0	$0.0	$0.0
State and Tribal Assistance Grants	$8,158.0	$8,158.0	$8,158.0	$0.0
Total Workyears:	152.8	150.3	130.0	(20.3)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
State Radon Grants	$8,158.0	$8,158.0	$8,158.0
Indoor Environments: ETS	$1,182.9	$1,050.0	$2,194.3
Indoor Environments: Schools	$6,788.5	$2,921.0	$9,946.7
Indoor Environments : Asthma	$2,589.4	$1,135.5	$12,323.7
Indoor Air Research	$3,011.7	$2,836.1	$0.0

EMPACT	$904.8	$0.0	$0.0
Tribal Capacity	$0.0	$0.0	$300.0

FY 2000 Request

Americans spend about 90 percent of their time indoors, where they are exposed to levels of pollutants that may be much higher and more concentrated than outdoors. As a result, indoor air pollution poses high risks to human health, especially to sensitive populations, and has ranked among the top four environmental risks in relative risk reports. Estimates of the economic costs to the nation of poor indoor air quality, including lost worker productivity, direct medical costs for those whose health is adversely affected, and damage to equipment and materials, are on the order of tens of billions of dollars per year. (Report to Congress on Indoor Air Quality, EPA/400/1-89-001. 1989)

Asthma in children is on the rise and has reached epidemic proportions.

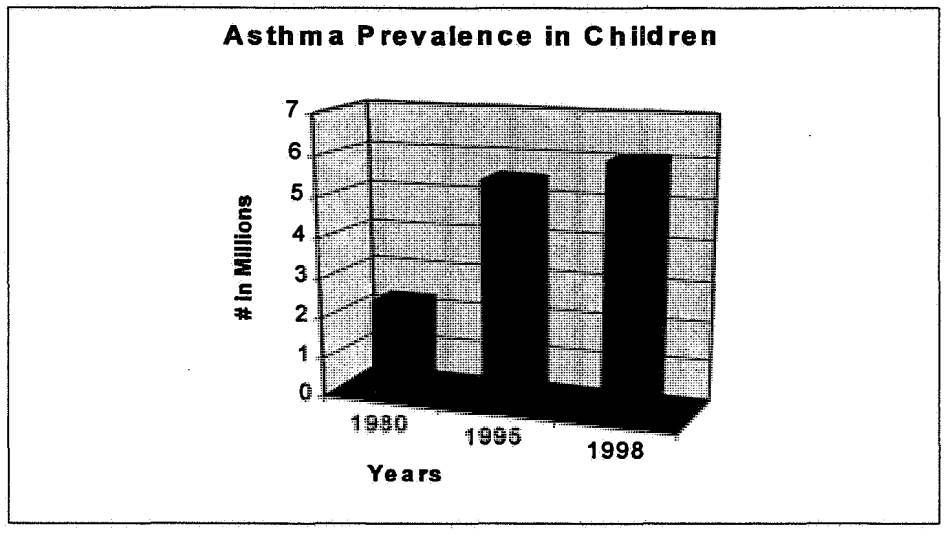
- The number of children with asthma has more than doubled in the past 15 years;
- 5.5 million children affected;
- 150,000 hospitalizations due to asthma each year;
- A three-fold increase in the number of deaths from asthma from 84 in 1977 to 280 in 1995; and
- Over 10 million missed school days each year.

Indoor allergens and irritants significantly contribute to the number and severity of asthma episodes. Scientific evidence also suggests that a number of indoor air pollutants can cause or trigger asthma episodes, and several controlled studies have shown that reducing exposure to indoor allergens can reduce asthma symptoms. By 2000, the findings of an EPA commissioned study by the National Academy of Sciences that focuses on the role of indoor pollutants (such as dust mites and cockroach allergens, animal dander, molds, ETS, and other irritants) and their relationship to asthma morbidity and mortality will provide a foundation for EPA to better understand the link between indoor air pollutants and asthma.

EPA has classified Environmental Tobacco Smoke (ETS), or second-hand smoke, as a "Group A" carcinogen and has estimated that it causes about 3,000 lung cancer deaths in nonsmokers annually. A 1998 court decision vacated the finding on adult lung cancer deaths. However, EPA still maintains that the classification was and is correct and that subsequent scientific studies confirm EPA conclusions. EPA has appealed the decision of the lower court. EPA also has found that ETS is responsible for many childhood respiratory problems including 150,000-300,000 cases of pneumonia and bronchitis each year in children under 18 months of age, as well as middle ear fluid build up in children. Asthmatic children are especially at risk since ETS exposure increases the number of episodes and severity of symptoms for up to 1,000,000 asthmatic children. These

findings were not challenged by the tobacco industry and were, therefore, unaffected by the 1998 court decision. Moreover, more recent studies have suggested links between ETS, sudden infant death syndrome, and low birth weight. A recent study reported in the American Heart Association Journal concluded that constant ETS exposure in the workplace or at home nearly doubles the risk of having a heart attack (between 30,000 and 60,000 excess deaths annually).

In 2000, the indoor environments program plans a strategic shift of resources from radon and the Building Assessment Survey and Evaluation (BASE) to two higher priority children's issues, asthma and ETS. The resources will allow the agency to focus on public awareness and the health risks associated with asthma and ETS and children. For asthma, EPA will use redirected resources to expand "Open Airways," an asthma prevention program for elementary schools children; perform economic analyses to identify economic incentives for managed care; expand implementation of indoor air quality "Tools for Schools;" design pilot interventions to reduce asthma risk to children; and expand a media outreach campaign to alert parents to indoor environment triggers to asthma. EPA also will use the redirected resources for ETS to expand both the number of media campaigns, and the associated outreach. EPA will continue to analyze data from the BASE study and use these analyses to improve existing indoor air quality guidance documents on sound building management practices. The BASE data provides real world information on occupant perception, building design, operation, and ventilation performance of one hundred randomly selected office buildings throughout the country, representing the full range of building types and climate zones in the U.S.



Indoor air pollutants have additional significant impacts in our homes, schools, and workplaces. In homes, radon is the second leading cause of lung cancer and is responsible for an estimated 15,000 to 22,000 deaths per year based on the February 1998 BEIR VI report from the National Academy of Sciences. The Agency recommends that all homes be tested for radon and mitigated if levels are at or above 4 picocuries per liter of air. Nearly one out of every 15 homes is estimated to have radon concentrations above this action level. In schools, the General Accounting Office estimates that 9.9 million students and 570,000 teachers and school staff suffer illnesses annually due to poor indoor air quality. In office buildings, a World Health Organization Committee

has suggested that up to 30 percent of new and remodeled buildings, including schools, worldwide may be the subject of excessive complaints related to indoor air quality.

EPA has two major strategies to meet its human health objective for indoor air quality. First, EPA raises public awareness of actual and potential indoor air risks so that individuals can take steps to reduce exposure. This outreach provides essential information to the public and to professional and research communities about indoor air-related risks and takes steps to reduce them through educational literature, media campaigns, hotlines, and clearinghouse operations. Second, EPA uses partnerships and technology transfer to improve the way in which all types of buildings, including schools, homes, workplaces, and other large buildings are designed, operated, and maintained to bring about healthier environments indoors. To support these voluntary approaches, EPA incorporates the most current science available as the basis for recommending reduction actions.

To reach the objective, EPA focuses its efforts on outreach -- an overarching activity supporting efforts to increase awareness about indoor air quality and to promote changes in indoor air quality in homes (with a focus on asthma, ETS, and radon), schools (including day care facilities), and workplaces. Underpinning EPA's outreach efforts is a strong commitment to environmental justice, community based risk reduction, and customer service.

EPA provides essential information to the public and to professional and research communities about indoor air-related risks and takes steps to reduce them through educational literature, media campaigns, hotlines, and clearinghouse operations. Many of these activities are accomplished through assistance agreements/cooperative partnerships with organizations that share EPA's goal of improving the indoor environment. In 2000, the number of waves of media campaign will be increased to raise awareness and action around asthma and ETS.

In order to encourage individuals, schools, and industry to take action to get risk reduction in their indoor environments, EPA must reach people at the local level. To do this, EPA uses assistance agreements/cooperative partnerships with organizations such as the National Association of Counties, the American Lung Association, the American Pediatric Association, the Consumer Research Council, the National Environmental Health Association, the Council of Radiation Control Program Directors, and the Real Estate Educators Association. These partnerships position EPA to successfully reach and educate its target audience which includes county and local environmental health officials, susceptible minority and disadvantaged populations, schools, and real estate and building professionals. Through this national partner network of over 30 organizations and about 900 local field affiliates, EPA leverages the personnel, expertise, and credibility of these groups to provide the tools to their audiences and the general public to make informed decisions about reducing risk in their indoor environment.

These basic information services to the public and to our risk reduction network provide the support necessary for continuing to achieve our bottom line results such as implementation of the indoor air quality "Tools for Schools" kit, and increasing the number of "Open Airways" programs in elementary schools, office buildings managed with good Building Air Quality practices, home radon tests completed, home mitigation accomplished, and new homes built with radon-resistant

features. EPA Regions provide key information and assistance to the public, other governmental agencies, and non-governmental organizations to help meet the program's objective. In 2000, the Regions will also play a key role in the Agency's asthma work.

Through the State Indoor Radon Grant Program, EPA provides assistance to the states for the development and implementation of state programs to assess and mitigate radon. The grant program enhances the effectiveness of state and local activities for radon risk management by: (1) establishing the basic elements of an effective Radon Program in states that have not yet done so, and supporting innovation and expansion in states that currently have programs in place; (2) encouraging states to exercise creativity and flexibility in the design of their programs to address additional indoor radon concerns; and, (3) strengthening the Federal/state partnership by helping states develop radon program elements and activities.

Research

The FY 2000 President's Budget Request does not include resources for the Indoor Air Research Program. The Agency continues to believe that understanding the health risks associated with indoor pollutants and reducing those risks is important. Research aimed at understanding the health effects of indoor air pollutants and reducing the risks of indoor contaminants will continue in other research programs, all of which have in common the fact that exposures to many chemicals and agents occurring outside the home also occur within the homes.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$13,500,000 EPM) The investment resources of $13,500,000 will allow a significant increase over 1999 in EPA's investment in reducing asthma. This increase will fund an expansion of EPA's "Tools for Schools" program to include several thousand more schools by developing and implementing an incentive program to adopt indoor air quality management plans. The investment also will substantially increase implementation of the "Open Airways" asthma management program to reach several thousand more elementary schools and expand the "A is for Asthma" program for pre-school children to 89 locations. In addition, EPA will carry out economic analyses to identify economic incentives for managed care/health care organizations to help reduce asthma attacks through patient education about indoor environmental triggers. EPA also will join with other federal agencies in a cabinet level summit with managed care CEO's to solicit their help in asthma prevention by integrating strong messages about indoor environmental triggers into health education programs. There will be a significant expansion of the national multi-media campaigns on asthma and ETS, a significant indoor asthma trigger. In order to increase community action on asthma, five state-wide urban environmental asthma summits, and a National Environmental Asthma Caucus for practitioners, researchers, industry and government, will be convened to identify the most effective ways to target and educate the

public about environmental triggers of asthma. For the first time, EPA will provide resources to local communities through established programs to work with doctors, health clinics, and civic groups to reduce children's exposure to ETS. EPA also will work with housing groups, home health educators, community groups, and building operators to design and conduct pilots to reduce indoor environmental asthma triggers in low-income housing, using a variety of techniques, including in-home consultations. Finally, EPA will expand monitoring to increase pollution exposure information for correlation with asthma surveillance data.

- (+$300,000 EPM) With investment resources of $300,000, EPA will extend the indoor air program to Indian Country by modifying existing outreach approaches in order to train Tribal officials and establish Tribal coalitions. One of the key goals will be to collect data on indoor radon levels including the number of homes with high levels of radon mitigated and new homes constructed with radon-resistant techniques. This investment supports the Agency's increased emphasis on working with Tribes.

- (+$166,000 EPM) With a redirection of $166,000, EPA will increase its efforts with the National Association of Energy Service Companies (NAESCO) to encourage more schools to upgrade or refurbish their heating, ventilation, and air conditioning systems to provide healthier indoor environments for the students, faculty, and staff.

Research

- (-$2,836,100, -19.4 workyears) While the Agency is discontinuing the formal Indoor Air Research Program, research aimed at understanding the health effects of indoor air pollutants and reducing the risks of indoor contaminants will continue in other research programs, all of which have in common the fact that exposures to many chemicals and agents occurring outside the home also occur within the homes. Indoor air-related research activities include portions of the Children's Initiative, the Air Toxics program, the Particulate Matter Research Program, and the Pollution Prevention Research Program.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Healthier Residential Indoor Air

In 2000 890,000 additional people will be living in healthier residential indoor environments.

In 1999 700,000 additional people will live in healthier residential indoor environments.

Performance Measures	FY 1999	FY 2000
People Living in Radon Resistant Homes	420,000 People	315,000 People
People Living in Radon Mitigated Homes	85,000 People	64,000 People
Children Under 6 Not Exposed to ETS		360,000 Children
People Living in Healthier Indoor Air	700,000 People	890,000 People

Baseline: Performance Baseline: 1. By 2000, increase the number of people living in homes built with radon resistant features to 2,885,000 from 600,000 in 1994. (cumulative) 2. By 2000, decrease the number of children exposed to ETS from 19,500,000 in 1994 to 18,055,000. (cumulative) 3. By 2000, increase the number of people living in radon mitigated homes to 1,490,000 from 780,000 from 1994. (cumulative)

Healthier Indoor Air in Schools

In 2000 2,580,000 students, faculty and staff will experience improved indoor air quality in their schools.

In 1999 1,540,000 students, faculty, and staff experience improved indoor air quality in their schools.

Performance Measures	FY 1999	FY 2000
Students/Staff Experiencing Improved IAQ in Schools	1,540,000 Students/S	2,580,000 Students/St

Baseline: Performance Baseline: The nation has approximately 110,000 schools with an average of 520 students, faculty and staff occupying them. The IAQ "Tools for Schools" Guidance implementation began in 1997, and the program's projection for 2000 alone is that an additional 2,500 schools will implement the guidance. (additional, not cumulative since there is not an established baseline for good IAQ practices in schools)

Research

Research on Effects of Indoor Contaminants

In 2000 Develop a biological model to improve understanding of human health effects of indoor contaminants.

In 1999 Identify methods to characterize role of indoor air on human health risks.

Performance Measures	FY 1999	FY 2000
Report on development of asthma model to describe effects of indoor air contaminants on human health	30-SEP-1999	
Provide report on development of biological models to describe effects of priority allergens on initiation and exacerbation of asthma and other human health effects.		1 report

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures

Radon

Progress on the number of homes tested for radon and the number of homes fixed if levels are elevated is assessed under a cooperative agreement between EPA and the Conference of Radiation Control Program Officials. The Agency surveys the radon industry to determine the amount of residential testing and mitigation completed and utilizes the results of an annual survey of home builders to assess the extent to which they are employing radon-resistant construction techniques.

ETS

To ascertain the number of children aged six and under exposed to ETS in their homes, the program utilizes the biennial survey conducted by the Conference of Radiation Control Program Directors.

Schools

The number of schools that implement the indoor air quality "Tools for Schools" kit is tracked through a centralized database where data are provided by program office staff, the Government Printing Office, national cooperative partners, contractor staff, and the EPA regional offices. In addition, the program accesses the National Association of Energy Service Companies database which tracks companies that have performed ventilation work in schools as well as public school student enrollment numbers.

Buildings

The first measure for large buildings is the characterization of 100 randomly selected office buildings, and is tracked by the program. The second measure is reported by the International Union of Operating Engineers (IUOE) as part their cooperative agreement with EPA. IUOE trains building engineers and then assesses their implementation of good IAQ management practices. The third measure being developed is the "Assessment of IAQ Practices in Large Buildings." This measure will determine the extent to which the EPA's IAQ guidance has been incorporated into building

management practices throughout the nation and the barriers encountered. The Las Vegas laboratory also collects and tracks the number of samples and analyses from buildings where measures are collected.

Coordination with Other Agencies

EPA works with all levels of government, with other Agencies and organizations at the federal level, and with other nations to promote more effective approaches to identifying and solving indoor air quality problems. EPA is one of the five chairs of the Federal Interagency Committee on Indoor Air Quality (CIAQ) and is the lead agency with respect to planning and convening meetings and preparing annual updates. Among the coordination activities carried out by EPA are the following: staffing meetings and activities of the CIAQ, providing extensive external review of all draft EPA publications, distributing EPA publications to a wide array of target audiences, and working with representatives of State and local agencies with indoor air quality-related responsibilities. EPA co-chairs the Asthma Priority Area Workgroup of the President's Task Force on Environmental Health Risks and safety Risks to Children. EPA's asthma initiative implements key components of the Task Force's integrated, multi-agency action plan to combat childhood asthma. In addition, the Agency works collaboratively with the Department of Health and Human Services in developing and conducting programs of mutual interest, specifically in the area of reducing children's exposure to environmental tobacco smoke and indoor triggers of asthma. These collaborative efforts, which will expand considerably as the asthma initiative is implemented also include continuing work with the Department of Housing and Urban Development on home safety issues, especially those affecting children, and with the Consumer Product Safety Commission on consumer products designed for use indoors that may present health hazards.

Statutory Authorities

"Radon Gas and Indoor Air Quality Research Act" of Title IV of the Superfund Amendments and Reauthorization Act (SARA)

Toxic Substances Control Act (TSCA)section 6 and TSCA Titles II and III (15 U.S.C. 2605 and 2641-2671)

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

Clean Air Act (CAA)

Safe Drinking Water Act (SDWA)

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Objective # 5: Improve Pollution Prevention Strategies, Tools, Approaches

By 2005, reduce by 25% (from 1992 level) the quantity of toxic pollutants released, disposed of, treated, or combusted for energy recovery. Half of this reduction will be achieved through pollution prevention practices.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Improve Pollution Prevention Strategies, Tools, Approaches	**$26,829.8**	**$21,884.0**	**$25,116.1**	**$3,232.1**
Environmental Program & Management	$20,830.3	$15,884.5	$19,116.6	$3,232.1
State and Tribal Assistance Grants	$5,999.5	$5,999.5	$5,999.5	$0.0
Total Workyears:	79.9	79.9	77.2	(2.7)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Design for the Environment	$4,844.1	$4,554.0	$3,886.1
Pollution Prevention Program	$9,676.4	$8,872.3	$9,581.2
Pollution Prevention Incentive Grants to States	$5,999.5	$5,999.5	$5,999.5
Common Sense Initiative	$1,179.0	$429.1	$501.8

FY 2000 Request

Background

Pollution prevention (P2) is designed to prevent contaminants from entering the environment, in contrast to risk management and remediation, which are designed to control pollutants that have already been introduced to the environment. Under the Pollution Prevention Act of 1990, it is the policy of the United States "that pollution should be prevented or reduced at the source whenever feasible," as the preferred approach to environmental protection. Compared to the traditional approaches of controlling, treating, or cleaning up pollution, pollution prevention (P2) can often be more effective in reducing health and environmental risks to the extent that it:

- reduces releases to the environment,
- reduces the need to manage pollutants
- avoids shifting pollutants from one media (air, water, land) to another, and
- protects natural resources for future generations by cutting waste and conserving materials.

Preventing pollution can be cost-effective to industry in cases where it reduces excess raw materials and energy use. P2 can also reduce the need for expensive "end-of-pipe" treatment and disposal, enable firms to avoid potential liability, and support quality improvement incentives in place at facilities. Current EPA strategies are to institutionalize preventive approaches in EPA's regulatory, operating, and compliance/enforcement programs and to facilitate the adoption of pollution prevention techniques by states, tribes and industry. EPA is encouraging the use of market incentives, environmental management tools and new technologies to promote wider adoption of P2 measures. Much progress has been made in carrying out these strategies, though more work remains. Perhaps the fastest growing opportunities lie in private sector partnerships, which enable EPA's knowledge of P2 principles and techniques to be combined with industry-specific expertise in production and process design. This will be the strategy of choice to foster sustainable business practices.

FY 2000 Key Program Activities

In FY 2000 and the succeeding five fiscal years, EPA will work to achieve the pollution prevention objective by pursuing a coordinated set of initiatives, tailoring programs and projects to the concerns and interests for each arena. Every type of organization and each individual consumer has a part to play in preventing pollution. P2 approaches can be flexibly applied to almost any endeavor. The Agency will promote effective pollution prevention through:

(a) *Working with states.* The States are the primary sources for businesses and communities that are seeking assistance in identifying and applying prevention approaches. EPA has provided seed money to help states in promoting innovation and developing state capacity.

By the close of FY 2000, EPA will have completed cooperative projects with five states to demonstrate the feasibility and benefits of integrating P2 into state environmental programs. Another key program for states, the Pollution Prevention Incentives for States (PPIS) program, fosters the development of new P2 approaches by providing grants to states in the areas of technical assistance and training, education and outreach, regulatory integration, demonstration projects, legislative activities and awards programs.

(b) *Working within the Agency.* Pollution prevention specialists will continue to provide expert information and assistance to EPA media offices (e.g., air, water) in building pollution prevention into regulatory approaches. In FY 1999 and 2000, EPA will incorporate P2 approaches into the Industrial Combustion Coordinated Rule and the Surface Coatings rule under the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The experience gained from these rulemakings will facilitate the development in FY 2000 of a P2 module for EPA's *Planning your Regulation Workshop.*

In 2000 the Agency will continue to place strong emphasis on P2 methods in a multi-media initiative to reduce the serious risks posed by priority persistent, bioaccumulative and toxic pollutants (PBTs). Mercury, dioxin, and the now-banned pesticide DDT are well-known PBTs. PBT chemicals do not degrade in the environment. In addition these chemicals stay in the food chain by remaining in the tissues of the organism, including insects, birds, fish and mammals. Over time and if there is frequent exposure, the amount in the tissues can build up and cause toxic effects.

The PBT initiative, begun in 1999, will bring a full range of tools (especially P2-based tools) to bear on priority PBT pollutants. By FY 2000, National Action Plans will be implemented to reduce mercury waste through both voluntary and regulatory means. In addition, waste generation of other PBT chemicals, such as dioxin and ochtachlorostyrene, will be reduced through integration into the mercury action plan. The National Action Plans will be the framework for coordinated efforts across the Agency to eliminate current and avoid future contamination from these chemicals of concern.

(c) *Working with consumers and concerned citizens* EPA is moving forward with efforts to provide information consumers can use to make environmentally friendly choices, through the use of Environmentally Preferable Products. The Consumer Labeling Initiative is designed to improve household product labels to better present environmental, safe use, health, and other information. Proper labeling is especially important for products that are used by or around children, so that parents can prevent unnecessary risks to children from possible exposure to toxic chemicals.

The Environmental Justice P2 Program administers grants to low income, minority and federally recognized tribal communities to develop innovative P2 projects and capacity building approaches to address environmental concerns. The program was established as a response to the 1992 report, "Environmental Equity: Reducing Risk for All Communities," which found that low income, minority and tribal communities experience a higher incidence of environmental problems than does the general population. The program addresses toxics-related and other environmental

concerns across all environmental media. In FY 2000, there will be an increasing focus on prevention of lead poisoning in disadvantaged communities.

(d) *Working within the Federal government.* EPA has the lead in carrying out Executive Order 13101 and its predecessor Executive Order 12873, section 503. These orders require the Federal government to use its purchasing power - about $200 billion in goods and services each year - to create a demand for products and services that have a reduced impact on the environment (i.e., environmentally preferable products, or EPP). The Agency expects to finalize guidance in 1999 to help executive agencies identify and purchase environmentally preferable products and services. In FY 2000, EPA will expand an ongoing demonstration project to additional national standard setting organizations (e.g., ASTM, UL) that will help to extend government experience with environmentally preferable products to the private sector.

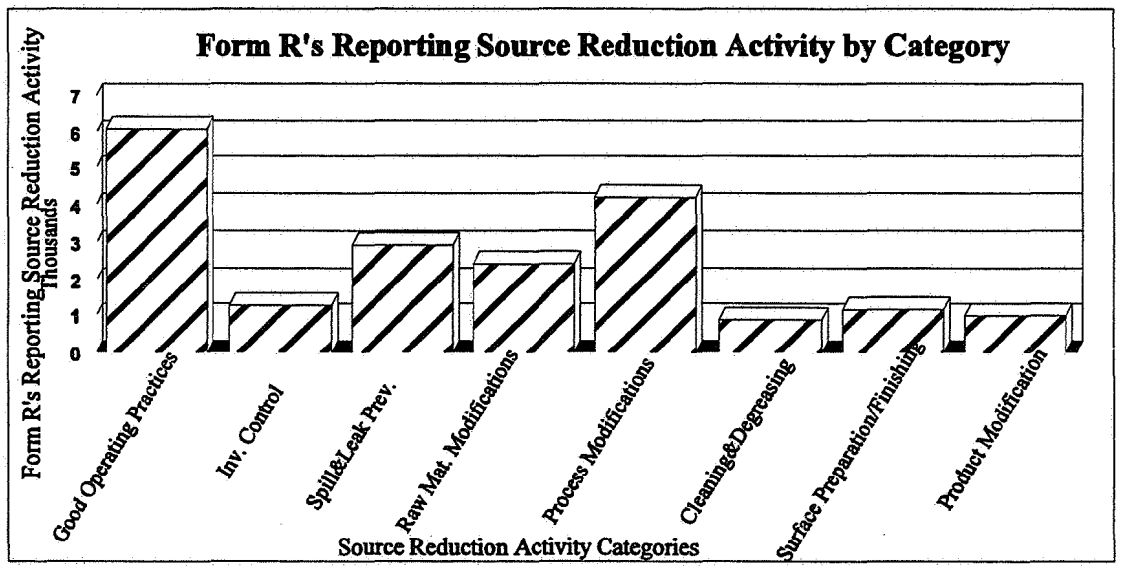
In 2000, the Buy Clean initiative will apply the principles of the EPP program to indoor air quality, with an emphasis on its potential for risk reduction for children. Concentrations of environmental chemicals can be several times higher indoors than they are outdoors, and pollutants are believed to be one factor in the growing incidence of childhood asthma. The initiative will begin with a focus on products used in schools, placing priority on any products containing chemicals that could contribute to asthma or other health effects of concern. EPA's Buy Clean initiative will develop test procedures and create market incentives for manufacturers to make products that lead to improved Indoor Environmental Quality. EPA will work with one school district to develop criteria/tools for the purchase of environmentally preferable products that will lead to an improvement in the indoor environmental quality of schools and in student health and performance.

(e) *Working with Business* Businesses can often reduce costs significantly by implementing effective P2 programs. Sometimes the savings are not readily apparent due to the structure of the company's internal accounting system. The Agency will play a strong role in promoting business adoption of voluntary Environmental Management Systems (such as ISO 14000) and in encouraging businesses to modify their management accounting systems to account for environmental costs fully and explicitly. These strategies will improve the current business management framework in ways that will enable companies to more easily choose prevention practices.

One of the Agency's key P2 industrial outreach programs focuses on fostering cleaner technologies. EPA's Design for the Environment (DfE) Program provides industry with performance, cost and comparative risk information about alternative technologies and processes, in order to facilitate environmentally informed decisions. Through this program, EPA has entered into partnerships with more than 15 industries, including printing, garment care, printed wiring board, computer display, auto refinishing, industrial laundries, foam furniture (adhesives), wall paints, automobile manufacturing and others. DfE also is working with a network of community colleges to help these institutions build P2 principles into their curricula. In 2000, two new DfE projects will be started: an additional formulator partnership project (similar to the industrial laundry project) and one project addressing either high risk metal cutting fluids or the hazardous aspects of boat building.

Some of the projects for cleaner technologies call for increasing the use of less toxic chemicals and safer processes, which will bring about reductions in the use of toxic chemicals in flexographic inks, foam furniture products, dry-cleaning and garment care. These use reductions will translate into lower quantities of toxics released, disposed of, treated, or combusted for energy recovery, contributing to the overall objective of achieving a 20 % reduction in such quantities. In addition, the Agency will develop materials (i.e., curricula, training materials, and technical analyses) that will allow persons trained in community colleges to bring P2 principles to bear on the choices they make in their working lives.

Due to the successful completion of several P2 activities in FY 1999, no further funding for these activities is planned in FY 2000. Several projects will be completed including the DfE lithography and DfE wall paint projects. EPA is applying findings from a recently completed pilot project with Eastman Kodak Company that demonstrate the potential advantages of using computerized methodologies to help design safer chemicals, redesign existing products to reduce risk, and achieve waste reductions. Another major outreach project, the Agency's Common Sense initiative, is completing its work and activities in the computers and electronics sector pertaining to P2, will be closed out in 2000.



The pollution prevention approaches discussed above are aimed at providing assistance and incentives to various sectors of society to promote new habits and new ways of doing business that are sustainable, cost-effective and beneficial to the environment. These activities promote greater ecological efficiency and therefore help to reduce the generation and release of production-related waste, as called for in Objective 4.5.

FY 2000 Change from FY 1999 Enacted

EPM

- (+ $3,000,000) This increase over the FY 99 enacted budget will support additional projects, designed and run by communities, tribes and other local organizations, under the Environmental Justice pollution Prevention program. Projects target local P2 solutions to environmental problems, providing seed monies and capacity building for disadvantaged communities.

- (+ $345,000) Requested funds will allow implementation of several projects delayed in 1999 such as a training module for regulators working to integrate P2 principles into their standards, and stakeholder and consumer outreach efforts including consumer product labeling efforts.

- (+$500,000) This requested investment in the Buy Clean Initiative will support 1-2 pilot projects to demonstrate the benefits of environmentally preferable procurement by school districts. These 1-2 school districts will serve as models for other districts and will begin to create incentives for the use of environmentally preferable products in schools.

- (+374,000) Requested funds will increase regional support for P2 outreach and technical assistance for states and local governments. Regions provide expert assistance for implementation of P2 projects, for example sector-based efforts with industry associations, i.e., printers, to reduce the use of highly toxic matierials in their routine operations.

- (+317,000) This requested investment will provide additional support for the Pollution Prevention Incentives for States grants. Through these grants, states are able to build internal capabilities and to test innovative P2 approaches and methodologies in targeted projects responding to local priorities.

- (- $575,000) Design for the Environment Program will complete several projects in 1999 and will not start additional projects with small business or assess the environmental aspects of rapidly changing technologies (such as the DfE computer display project).

- (-$1,000,000) Funding to support the $1M 1999 Congressional earmark will not be continued in FY 2000 at that level since the Environmentally Preferable Products guidance is scheduled for release in FY 99.

Annual Performance Goals and Performance Measures

Toxic Release Inventory (TRI) Pollutants Released

In 2000 The quantity of Toxic Release Inventory (TRI) pollutants released, treated or combusted for energy recovery, will be reduced by 200 millions pounds, or 2%, from 1999 reporting levels.

In 1999 The quantity of Toxic Release Inventory pollutants released, treated or combusted for energy recovery will reduced by 200 million pounds, or two percent, from 1998 reporting levels.

Performance Measures	FY 1999	FY 2000
Reduction of TRI pollutants released	200 million Pounds	200 million Pounds

Baseline: Estimated 1999 reporting of 10 billion pounds released.

Managing PBT Chemicals

In 2000 Integrate second group of 6-10 PBT chemicals into National Action Plans for PBT chemicals

In 1999 Reduce risk to human health and the environment from exposure to PBTs through the elimination or reduction of PBTs produced or through managing PBT use.

Performance Measures	FY 1999	FY 2000
Initiate risk reduction actions in accordance with National Action Plan	12-14 Chemicals	
Integrate level II chemicals into National Action Plans for level I chemicals		6-10 Chemicals

Baseline: National Action Plans for 12 level I PBT's will be completed in 1999. Approximately 50 PBT chemicals have been identified to date.

Broad-Based Implementation and Reporting of P2 Measures

In 2000 Continue to assure broad-based implementation and reporting of P2 measures by facilities required to submit Toxics Release Inventory (TRI) data.

In 1999 Continue to assure broad-based implementation and reporting of P2 measures by facilities required to submit Toxics Release Inventory (TRI) data.

Performance Measures	FY 1999	FY 2000
Form Rs with Source Reduction activities (cumulative)	129,000 Facilities	145,000 Facilities

Baseline: Cumulative number of Form R submissions on which facility reports having undertaken at least one source reduction activity (1996 data, reported in 1998: 109,000 facilities)

Improvement of Indoor Environmental Quality In Schools

In 2000 Work with one school district to develop criteria/tools for procurement of products that will improve indoor environmental quality; identify two high priority product categories and set health-based product criteria for use in one pilot school district.

Performance Measures	FY 1999	FY 2000
Agreement reached with school district on purchasing criteria for two product categories.		1 Agreement

Baseline: Under development as part of project

Safer Alternative Cleaning Technologies

In 2000 From the 1998 baseline, expand P2 practices in the garment and textile care industries by achieving a 35% increase in the use of safer alternative cleaning technologies.

In 1999 From the 1998 baseline, expand P2 practices in the garment and textile care industries by achieving a 25% increase in the use of safer alternative cleaning technologies.

Performance Measures	FY 1999	FY 2000
Percentage increase in the use of alternative cleaning technologies by garment care industry.	10% Increase	35% Increased use

Baseline: In 1997, 83 million pounds perchloroethylene used; 1998 figure not yet available. Safer cleaning technologies replace use of perchloroethylene.

Cleaner Products/Technologies

In 2000 Achieve a 5% increase in use of cleaner flexographic ink technologies and cleaner (water-or non-solvent-based) adhesives or bonding techniques in foam furniture products.

Performance Measures	FY 1999	FY 2000
For inks, track size of flexographic ink industry and market share ($ and lbs) of cleaner inks. Baseline 1998.		5% Cleaner inks

Baseline: Baseline for 1998 usage under development (new goal); 5% is best current estimate

Pollution Prevention Outreach Efforts

In 2000 Broaden outreach efforts on P2 methods to community colleges and tribal schools, sponsoring community college training network and modifying curricula to better reflect tribal values

Performance Measures	FY 1999	FY 2000
Number of P2/DfE curricula (comm. coll. and tribal) instructor workshops and training modules developed		3,10,1 Ed. Modules

Baseline: Number of workshops and curricula developed from start of project in 2000.

Verification and Validation of Performance Measures

Toxics Release Inventory (TRI) data:

Industrial facilities in specified SIC codes are required to provide TRI data for chemicals listed by law or regulation. This information is provided on documents known as "Form R's". The data are estimates by the reporting facility of the quantities of toxic chemicals in production-related wastes that are released to the environment or otherwise managed as waste (including quantities disposed of, used for energy recovery, recycled or treated). Facilities also must report quantities that are released or managed as waste off-site as a result of remedial actions, catastrophic events, or one-time events not associated with production processes.

The source reduction performance measures (see Goal #1, above) rely on data reported by industrial facilities (on TRI Form R's) regarding any source reduction activities undertaken by the facilities during the reporting year, and the methods used to identify these activities. Facilities select the methods they use to estimate the reported quantities managed as waste, and the validity of the data depends on proper selection and application of the estimation methods as well as on the quality of the available data.

EPA conducts data quality site surveys to identify aspects of the TRI data reporting process that could be improved and to provide a quantitative assessment of the accuracy of data collected. The latest survey, completed in 1998, showed that errors in reporting source reduction activities varied by industry sector and resulted primarily from misinterpretations of key terms, particularly "source reduction." The survey also suggested that source reduction activities may be somewhat under-reported through TRI, since the results of such activities are not subject to TRI reporting (hence there is less incentive to disclose the activities), and for other reasons.

The Agency is preparing to propose regulatory definitions of key terms under the Pollution Prevention Act in order to standardize the waste management data submitted by covered facilities. EPA will also prepare guidance to assist facilities in preparing their Form R's. This guidance will focus on the reporting elements required by the Pollution Prevention Act of 1990 and should be issued in the year 2000. Under the TRI program, the Agency also is expanding collection of information on toxic chemicals that persist and bioaccumulate in the environment (PBTs) and is proposing to lower the TRI reporting thresholds for all PBTs, as these chemicals are of concern even in relatively small amounts. Additionally, through a variety of other guidance documents (both general and industry-specific) and fact sheets in 'Q and A' format relating to TRI reporting, the Agency expects to see an increase in the understanding of the source reduction aspects of TRI reporting, and a corresponding increase in its accuracy.

Also, EPA has initiated a project to develop a statistical model for purposes of measuring the effect of source reduction practices on the quantity of waste generated by facilities that are required to report TRI data. The model also will be helpful in characterizing the degree to which such facilities adopt waste management practices that move up in the waste management hierarchy (in order of preference: source reduction, reuse and recycling) from release to source reduction. In a GPRA context, it should be possible to use the model to help estimate the environmental results of pollution prevention practices.

In addition to the data reported under TRI, EPA will utilize data from a variety of other sources. EPA's PBT program expects to draw upon National Health and Nutrition Exam Survey (NHANES) data, Integrated Atmospheric Deposition Network (IADN) monitoring data, a fetal cord monitoring study, and an EPA Office of Water (OW) fish tissue study, as these data sources become available. EPA's Design for Environment Program conducts an evaluation of the extent to which cleaner technologies have been adopted by each industry that takes part in the program, as each project is completed. This can be as simple as collecting data on the amount of a particular chemical used within an industry (for example, perchloroethylene used in dry-cleaning) or as challenging as surveying an industry's overall progress in installing newer, less polluting processes. Survey participants are typically small to medium-sized firms. While no single central database depository exists for all survey results, findings are frequently documented and incorporated into outreach materials for industry.

The performance measures related to the annual performance goals for (1) national action plans for PBT chemicals and (2) development of educational curricula (see above), are expressed as the completion of explicit tasks. Verification of these measures will require the objective assessment of completed tasks by program staff and management.

Coordination with Other Agencies

This objective spans a broad range of pollution prevention activities which will yield reductions in waste generation in both the public and private sectors. For example, the Environmentally Preferable Product initiative, which implements Executive Orders 12873 and 13101, is promoting the use of cleaner products by federal agencies, which can stimulate demand for the development of such products by industry. This effort includes a number of demonstration projects with other federal departments/agencies, such as the General Services Administration (use of safer products for indoor painting and cleaning), Department of Defense (use of safer paving materials for parking lots), and Defense Logistics Agency (safer solvents). The program also works with the National Institute of Standards and Technology, the International Standards Organization, and other groups to develop standards for Environmental Management Systems.

Statutory Authorities

Toxic Substances Control Act (TSCA) sections 4 and 6 and TSCA Titles II, III, and IV (15 U.S.C. 2605 and 2641-2692)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) sections 3, 4, 5, 6, 11, 18, 24, and 25 (7 U.S.C. 136a, 136a-1, 136c, 136d, 136i, 136p, 136v, and 136w)

Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)

Clean Air Act (CAA) section 309 (42 U.S.C. 7609)

Clean Water Act (33 U.S.C. 1251-1387)]

Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001-11050)

Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901-6992k

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Objective # 6: Decrease Quantity and Toxicity of Waste

By 2005, EPA and its partners will increase recycling and decrease the quantity and toxicity of waste generated.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Decrease Quantity and Toxicity of Waste	**$23,429.1**	**$18,852.5**	**$21,026.0**	**$2,173.5**
Environmental Program & Management	$22,350.3	$15,779.5	$17,953.0	$2,173.5
State and Tribal Assistance Grants	$1,078.8	$3,073.0	$3,073.0	$0.0
Total Workyears:	135.5	132.0	131.0	(1.0)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
RCRA State Grants	$1,078.8	$3,073.0	$3,073.0
Waste Minimization	$2,398.7	$2,195.3	$2,943.2
Source Reduction	$5,504.9	$2,728.8	$3,073.4
Recycling	$5,489.1	$4,980.8	$5,079.3
Urban Environmental Quality and Human Health	$220.0	$0.0	$0.0
Common Sense Initiative	$1,782.4	$634.3	$477.8

FY 2000 Request

Pollution prevention and safe recycling are two of the nation's best tools for environmental protection. Well implemented, systematic source reduction and recycling programs solve waste management problems at their source, lowering pressure on the environment at a number of critical points: production of raw materials; subsequent processing into finished products; and eventual transport and disposal at a waste management facility. At the same time, the best programs save industry and municipalities money.

The Resource Conservation and Recovery Act (RCRA) calls for national leadership to reduce the amount of waste generated, and to improve the recovery and conservation of materials through recycling. The RCRA program emphasizes a national policy that focuses on a hierarchy of preference for waste management options - reduce, reuse or recycle - that cut the need for eventual storage, treatment or disposal. In the 1990 Pollution Prevention Act, Congress essentially codified this 'decision tree' for waste management, reaffirming the need for strong source reduction and recycling programs for both hazardous wastes and municipal solid wastes.

The activities in this objective encompass the Agency's work to reduce toxic chemicals in industrial hazardous waste streams, reduce the generation of municipal, hazardous and other solid waste, and recycle hazardous and municipal solid waste. Reducing toxic chemicals in industrial waste streams will result in more efficient use of natural resources, and decrease human exposure to toxic wastes. Source reduction and recycling of municipal solid waste will divert waste from landfills and combustors, reduce air and water pollution, and reduce generation of global warming gases by larger amounts than would occur if wastes were landfilled or burned for energy recovery. (While a small percentage of organic waste is sequestered when landfilled the generation of methane, which is 21 times more potent that carbon dioxide as a greenhouse gas, more than offsets the sequestered carbon.)

In the hazardous waste arena, the Agency will further develop waste minimization partnerships with industry, building on the tools and coordination activities that were put in place in 1998 and 1999. While national policies and slogans are useful, they are not enough. Industry needs practical, effective methods that can achieve real environmental benefits. In line with the national and international priority on reducing the presence of persistent, bioaccumulative and toxic chemicals (PBTs) in the environment, the RCRA program is implementing a strategy to focus reduction efforts on the worst waste streams by first identifying them, then working with industry and communities to find ways to reduce them. Reducing the most hazardous chemicals will eliminate some of the risk that occurs when waste is released into the environment through accident, mismanagement or residual emissions. EPA will work with industry to reduce, by 50 percent, the most persistent, bio-accumulative and toxic chemicals in hazardous waste streams by 2005.

Much of the work in 2000 will build upon the RCRA Waste Minimization PBT Chemical List. A draft list was issued in November 1998 ranking chemicals according to these four factors: (1) a combined ability for chemicals to be persistent, to accumulate in human and animal tissues

(bio-accumulate) and result in toxic effects in humans (e.g., cancer) or pose other ecological problems; (2) quantities of chemical present in hazardous waste and frequency of occurrence; (3) documented presence of chemical in the environment, and (4) whether these chemicals are of RCRA concern (e.g., hard to treat, hard to remediate, etc.). The Agency has developed a Waste Minimization Prioritization Tool (WMPT) software program. The software will provide a user-friendly computer application that enables the user to score chemicals for persistence, bioaccumulation, human and ecological toxicity. The intent is that the resulting "PBT" score will facilitate development of waste minimization plans, helping a facility or other company set waste minimization priorities. Following completion of the software in 1999, the Agency will conduct training sessions for state and regional staff in its use.

In 2000, the emphasis will be on outreach and technical assistance to interested industry and other partners, to reduce the presence of PBT chemicals in hazardous wastes. Analysis will continue to identify voluntarily sectors, if any, that may predominate in generation of wastes containing PBTs. Additional efforts will focus on profiling processes that generate wastes containing PBTs. This information will help regional and state staff direct their outreach, as well as focus future pollution prevention research and development efforts. Another area of activity will be on the development of measurement methods and on evaluating progress, from the 1991 baseline, in reductions of PBTs in hazardous wastes using nationally available data. Through this evaluative effort and through extensive discussions with stakeholders, the aim will be to set up a feedback loop that will first, identify those chemicals that are being reduced and giving recognition. In addition, EPA will identify those chemicals for which progress is lagging and then, explore ways to enhance progress in reducing them.

As with waste minimization, increasing the rate of safe recycling of hazardous wastes will reduce the amount of hazardous waste generated for disposal, thereby directly reducing overall risk. Indirectly as well, safe recycling reduces risk and environmental damage by reducing the demand on raw materials for production and the attendant demand for extraction or processing and the pollution that this process creates. The Agency is working to increase safe recycling of hazardous waste, through targeted changes to the hazardous waste recycling regulations (i.e., the definition of solid waste), through provisions in other regulatory standards and through ongoing outreach to stakeholders to explore additional options. The Agency's goals are to develop clearer regulations and more narrowly focus controls in the types of recycling practices and materials that pose a hazard. In addition, some of the regulatory reforms explored under the Agency's Common Sense Initiative (CSI) will facilitate hazardous waste recycling.

In 1999, the Agency's emphasis will be on proposed and final rulemakings targeted towards specific industry sectors or recycling practices. This kind of focus will allow the Agency to gather sufficient data about the affected universe to propose and support regulatory changes that will encourage sure safe recycling while at the same time reducing the regulatory burden on industry. Focusing on a narrow universe also allows the Agency to better involve appropriate stakeholders in the rule development process. In addition, the Agency will conduct an initial scoping effort to

identify methods that could be used to gather data about currently exempt hazardous waste recycling and to identify risks/damages from various aspects of recycling.

A number of the targeted regulatory efforts stem from the sector-based CSI. One example is the Cathode Ray Tube recycling project. The tubes contain lead and are prevalent - a major component of both televisions and computer monitors. Based on a recommendation from the Computers and Electronics CSI sector, work is proceeding to develop streamlined regulatory control under something like the 'universal waste' approach. This type of approach balances risk, handling practices and recycling processes, while reducing the regulatory burden for the safe management of selected common wastes.

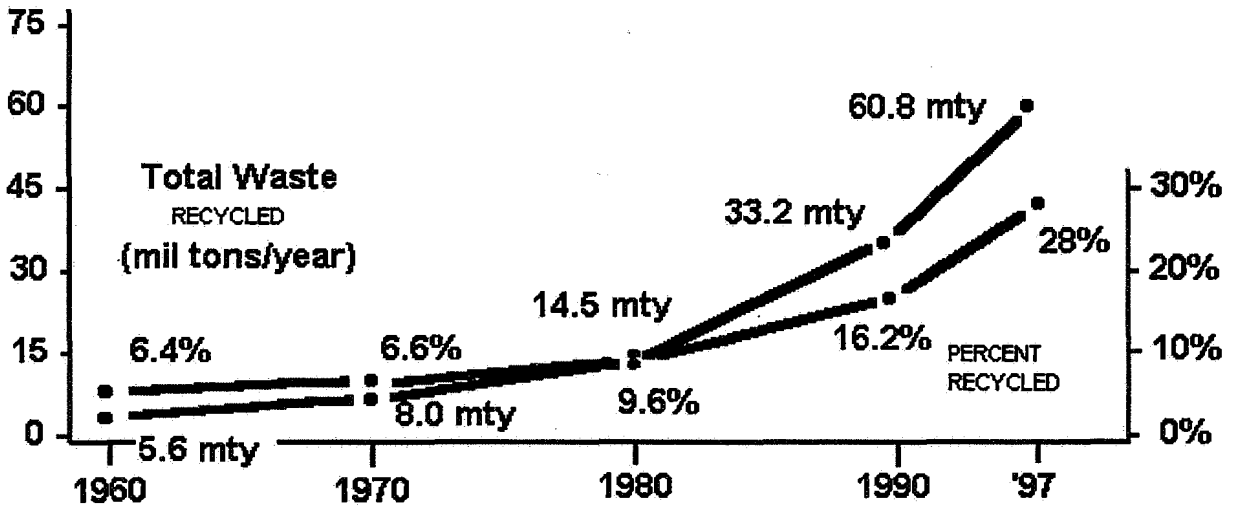
In 2000, EPA will continue working on regulatory changes targeted towards specific industry sectors of recycling practices. In addition, EPA will develop a strategy for increasing safe hazardous waste recycling. As part of this strategy development, the Agency will use data scoping information developed in 1999 to begin gathering and analyzing data on hazardous waste recycling. The strategy will be designed to strategically select potential beneficial changes to the regulation in general, or projects that focus on increasing the safe recycling of PBT chemicals. Better understanding of recycling will allow EPA to evaluate recycling practices, such as use of industrial byproducts in fertilizer, to determine if current, or evolving, recycling practices are creating risks to human health or the environment and to develop regulatory controls that are appropriate to the risk.

Reducing the amount and toxicity of hazardous waste has clear benefits yet affects a small portion of the nation's waste when measured in terms of sheer volume produced. Annual generation of municipal solid waste (MSW) has grown steadily from 88 million to 208 million tons between 1960 and 1995. The RCRA municipal solid waste program provides national leadership, technical assistance and outreach for local businesses and municipalities implementing source reduction and recycling systems in their plants, facilities and communities, as well as for states and tribes whose laws provide the structure for these activities. Municipal solid waste includes waste generated from residences, commercial establishments, institutions, and industrial non-process operations. The program implements a coordinated mix of strategies to manage wastes, including source reduction (also called waste prevention), recycling (including composting), combustion, and landfilling. Preference is given to strategies that maximize the diversion of waste from disposal facilities, with source reduction (including reuse) as the highest priority followed by recycling.

In 2000, the RCRA recycling and source reduction projects will continue to rely on the basics, including efforts such as promoting financing and technology opportunities for recycling/reuse businesses and working with partners to identify, analyze and share information on waste reduction opportunities for construction and demolition debris, food wastes and other targeted waste streams. As one of the principal participants in the 1998 White House Recycling initiative, the RCRA program is working closely with Council on Environmental Quality, the Federal Environmental Executive, and a select team representing state and local government, non-governmental organizations, federal agencies, and industry to reinvigorate America's commitment to recycling and capitalize more fully on recycling's environmental and economic benefits. The

Council on Environmental Quality announced this initiative in response to comments from industry and State and local government that the federal government should assume greater leadership in expanding and enhancing recycling in America.

WASTE RECYCLING RATES - 1960 TO 1997



Characterization of MSW in the US: 1998 Update, US EPA, Washington, DC

Specific projects include Wastewise, the Agency's primary partnership program for source reduction and recycling. Partners joining the WasteWise program set and achieve goals in three areas: preventing waste, collecting recyclables, and increasing the purchase or manufacture of recycled products. Currently, WasteWise has over 850 partners plus an additional 60 endorser organizations which promote the program to their members. In the program's fourth year, WasteWise partners prevented 816,000 tons of waste and recycled nearly 6.9 million tons.

The Jobs Through Recycling program is the cornerstone of the Agency's effort to stimulate markets for recycled materials through creation of new recycling and reuse business. The Agency will continue fostering recycling market development by facilitating information dissemination and exchange, and networking. The Comprehensive Procurement Guidelines program will proceed with the work of improving markets for recycled, recycled-content, and recyclable goods by establishing guidelines for federal and state purchasing. These guidelines, along with the Recovered Materials Advisory Notices, meet these objectives by setting minimum recovered materials content for certain designated items.

Additional tools assisting states and local communities make more informed decisions among municipal solid waste management options include the successful transfer of expertise in the Pay-As-You-Throw and Full Cost Accounting programs, as well as source reduction and recycling measurement methods. The Agency will share technical information on these established and cost effective waste reduction programs through satellite-broadcast workshops, training, and outreach materials that can be used by local communities and other partners in developing effective systems for containing costs while maintaining or improving environmental protection. Another basis for setting priorities at the local level is information on the performance of recycling and source reduction programs. Stakeholders have indicated the need for a voluntary, standard method for measuring recycling and source reduction. Outreach documents, a web site, workshops and a tool called the Electronic Calculator help communities determine the rate of the success of their source reduction and recycling programs. Additional measurement tools for other waste management topics are under development.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$748,000) Increase to Waste Minimization activities. Finalize the draft PBT list, establish regional pilots, the Internet access and query system and strengthen partnerships with private groups and support Agency wide PBTI strategies.

- (+$938,000) Increase to the Definition of Solid Waste for Increased outreach to states and regions. Provide additional analyses and data collection for Hazardous Waste Recycling by expanding efforts to include a sector-based approach (eg. rags & wipes, antifreeze) associated with small businesses.

- (+$440,000) Increase to RCRA municipal solid waste source reduction and recycling programs by intensifying ad campaigns, outreach to citizens and providing technical assistance to states and local communities.

Annual Performance Goals and Performance Measures

Reducing PBTs in Hazardous Waste Streams

In 2000	Reduce persistent, bioaccumulative and toxic chemicals in hazardous waste streams by 10% as compared to the 1991 baseline.
In 1999	Issue final guidance on RCRA persistent, bio-accumulative and toxic (PBT) priority-setting software and conduct two training sessions for Regional and State staff.

Performance Measures	FY 1999	FY 2000
Issue final guidance on PBT Identification	1 document	
Percent reduction in persistent, bioaccumulative, and toxic chemicals in hazardous waste streams.		10 percent

Baseline: The 1991 baseline data are currently under development and will be available in 1999.

Development of RCRA Hazardous Waste Recycling Strategy

In 2000 Develop the RCRA hazardous waste recycling strategy that facilitates increased hazardous waste recycling.

Performance Measures	FY 1999	FY 2000
Distribute strategy for review and comment.		09/30/2000 strategy

Baseline: The 1993 baseline data are currently under development and will be available in 1999.

Municipal Solid Waste Source Reduction

In 2000 Divert an additional 1% (for a cumulative total of 29% or 64 million tons) of municipal solid waste from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.3 pounds per day.

In 1999 Maintain levels (for a cumulative total of 28% or 62 million tons) of municipal solid waste (MSW) diverted from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.3 pounds per day.

Performance Measures	FY 1999	FY 2000
Millions of tons of municipal solid waste diverted.	62 million tons	64 million tons
Daily per capita generation of municipal solid waste.	4.3 lbs. MSW	4.3 lbs. MSW

Baseline: 1990 levels established at 17% of MSW diverted and 4.3 pounds MSW per capita daily generation.

Verification and Validation of Performance Measures

Data for RCRA performance measures under this objective are tracked through a variety of systems, ranging from national databases managed by EPA to voluntary reporting from program partners to information collected by the Commerce Department. Appropriate verification and validation procedures are in place.

Monitoring national progress in reductions of PBTs will rely heavily on the Toxics Release Inventory (TRI) for establishing a baseline for tracking annual performance and measuring the reductions of a specific list of PBT chemicals in hazardous waste. The regulated industry reports

the TRI data, and the Agency receives the reports and enters the data directly into the TRI. All applicable validation controls are in place for the TRI system.

Although there are some chemicals on this list that are not included in TRI reporting in 1991, some of these chemicals were either required to be reported in 1995 or will be added to the TRI in an upcoming rulemaking that expands reporting and lowers the reporting threshold for certain chemicals. There still remains a subset of chemicals (very small in number) that we will not have TRI information on. For these chemicals, EPA plans on using the Biennial Reporting Information, the 1986 RCRA Generator Survey, the National Hazardous Waste Constituent Survey (1996), and the RCRA Waste Code Crosswalk to establish a baseline.

Limitations of the TRI include: 1) not all sectors that generate hazardous wastes report in the TRI; and, 2) information that is reported is not directly related to the RCRA program. However these limitations are not of great concern. Although all sectors that generate hazardous wastes do not report in TRI, the majority of waste (as discovered through analysis of Biennial Report System data) is generated by those sectors that do report to TRI and are the most consistent reporters in BRS as well as TRI. Secondly, although information reported in the TRI is not directly related to RCRA, EPA is able to identify those reporters in TRI that are also generators of hazardous wastes. Both these limitations are far outweighed by the strengths in TRI: 1) that data is collected annually and therefore will provide us with more trend analyses; 2) that data is collected not on waste streams, but on chemicals; 3) that improvements currently are being made to the systems and the reporting universe is expanding, including more reporting of use and release of chemicals of concern for which we have limited information. An upcoming TRI rulemaking will expand reporting of some chemicals and lower the report threshold of others. This will fill in some of the data limitations identified above.

Tracking the rate of recycling for hazardous waste will use information in the Biennial Reporting System (BRS), a national database which supports EPA's RCRA program. BRS is a biennial compilation of information supplied by hazardous waste handlers and provides data on types and amounts of waste handled, as well as how the waste is handled (e.g., disposed, recycled). EPA will track progress on increase of hazardous waste safely recycled using the BRS. The regulated industry reports the BRS data, and states and EPA regions quality check the data and enter it into the data base.

The BRS data system has validation/verification controls in place to help ensure that data is complete and accurate. The BRS data entry software includes a series of basic and advanced edits which check for completeness and accuracy. Additionally, EPA Headquarters runs BRS data quality verification reports and then coordinates with states and EPA regions to discuss potential data errors. Analysis also is conducted on significant changes which have occurred since the last biennial report. Prior to issuing the final BRS report, a second set of BRS data quality verification reports are run and follow-on discussions to verify/validate data are conducted for those states with significant changes. BRS has a suite of user and system documentation which describes the overall administration of the data collection and management activities. Training on use of the systems is

provided on a regular basis, usually annually depending on the nature of system changes and user needs.

In February 1997, EPA's Office of the Inspector General performed an audit of the Biennial Hazardous Waste Data. They made several recommendations which the Agency has acted on.

A limitation of the data available in BRS is that when a facility modifies its recycling or handling operation thereby becoming excluded from the definition of solid waste and/or changes its regulatory status so that future reporting is not required, that facility need no longer submit a biennial report. However, that same facility could still be recycling hazardous waste. This type of change may lead to an underestimating of the amount of hazardous waste safely recycled. The Agency is monitoring BRS submissions to identify facilities that reported in the previous cycle but not in the current cycle. EPA will use various analytical means to determine why reporting, either by the facility as a whole or of a particular waste stream, stopped.

Extensive improvements are underway for the RCRA national databases. The OSW Platform Conversion of national systems (RCRIS and BRS) will migrate data and interfaces to a more supportable database platform, using Internet based access methods. While the converted systems will retain the essential data characteristics of the current systems, the platform conversion will provide new user interfaces that will help improve the quality of the data as it is being created. In the longer term, the RCRA program currently is in the process of reinventing its information management needs and systems through a joint initiative with the states called WIN/INFORMED.

In the non-hazardous waste program, no national databases are in place nor planned. The baseline numbers for municipal solid waste source reduction and recycling are developed using a materials flow methodology employing data largely from the Department of Commerce and can be found in an EPA report titled "Characterization of Municipal Solid Waste in the United States". The report, including the baseline numbers and current progress, is widely accepted among experts. Since the report is produced by EPA, no reporting from outside sources will be required. Quality assurance and quality control is provided by the Department of Commerce's internal procedures and systems. The report prepared by the Agency is then reviewed by a number of experts for accuracy and soundness.

Data limitations stem from the fact that the baseline and annual progress numbers are based on a series of models, assumptions, and extrapolations and, as such, is not an empirical accounting of municipal solid waste generated or recycled. Since these numbers are widely reported and accepted by experts, no new efforts to improve the data or the methodology have been identified or are necessary.

Coordination with Other Agencies

In addition to business and industry and other non-governmental organizations, EPA will work with federal, state, tribal, and local governments to encourage reduced generation of waste as well as the safe recycling of wastes. Frequently successful projects require multiple partners to address the multi-media nature of effective source reduction and recycling programs. The Agency's Common Sense Initiative brought a range of stakeholders together to examine alternatives in specific industrial sectors, and several regulatory changes have followed which encourage hazardous waste recycling.

In an example of partnership within the federal government, EPA and the U.S. Postal Service work together on several municipal solid waste projects. For instance, rather than dispose of returned/unwanted mail, EPA and the U.S. Postal Service developed and implemented successful recycling procedures and markets, including the return of unwanted mail (advertisements, catalogues, etc.) to the Post Office for recycling rather than disposal by the recipient. EPA also works with the Small Business Administration to provide developmental and continued support to recycling businesses.

EPA works with the Council on Environmental Quality (CEQ) and the Federal Environmental Executive (FEE) to plan elements of the White House Initiative on Recycling, involving business, industry, non-government organizations and all levels of government. EPA is teaming with numerous other federal agencies to respond to the Initiative's goal of reinvigorated federal leadership for sustainable recycling. Agencies with which EPA is working include the Departments of Agriculture, Commerce, Education, Energy, Health and Human Services, Interior, Justice, and Treasury. Other agencies include the Office of Management and Budget, USPS, CEQ, General Services Administration and the FEE. These joint efforts are intended to increase coordination and lend focus to federal recycling activities, to avoid duplication of effort and increase access by the public to federal information and assistance.

Statutory Authorities

Pollution Prevention Act (PPA)

Solid Waste Disposal Act as amended by the Hazardous and Solid Waste Amendments of 1984.

Toxic Substances Control Act (TSCA)

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

Objective # 7: Assess Conditions in Indian Country

By 2003, 60% of Indian Country will be assessed for its environmental condition and Tribes and EPA will be implementing plans to address priority issues.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Assess Conditions in Indian Country	**$50,850.7**	**$50,985.1**	**$53,106.9**	**$2,121.8**
Environmental Program & Management	$8,265.3	$8,399.8	$10,521.5	$2,121.7
State and Tribal Assistance Grants	$42,585.4	$42,585.3	$42,585.4	$0.1
Total Workyears:	54.6	67.3	71.6	4.3

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Tribal General Assistance Grants	$42,585.4	$42,585.4	$42,585.4

FY 2000 Request

Since 1984, EPA policy has been to work with Tribes on a government-to-government basis that affirms the vital trust responsibility that EPA has with 554 tribal governments. Under Federal environmental statutes, the Agency is responsible for assuring human health and environmental protection in Indian Country. Also, under the Administrator's "Nine Point Action Plan," EPA endeavors to address priorities, ensure compliance with environmental laws, provide field assistance,

assure effective communication with Tribes, allow flexibility in grant programs and increase resource investments for Tribal operations.

A lack of comprehensive environmental data severely impacts our ability to properly identify risk to human health and the environment in Indian Country. Progress toward building Tribal and EPA infrastructure and completing a documented baseline assessment of environmental conditions in Indian Country will enable EPA/Tribes to identify high priority human health and environmental risks. These assessments will provide a blueprint for planning future activities through the development of Tribal/EPA Environmental Agreements (TEAs) or other similar tribal environmental plans to address and support priority environmental multi-media concerns in Indian Country.

Under the authority of the Indian Environmental General Assistance Program, EPA administers grants to tribal governments for developing the capacity to administer multi-media programs. As EPA progresses toward developing tribal capacity to implement programs, EPA will support innovative approaches for implementation of tribal programs and funding flexibility through Performance Partnership Grants (PPGs). As Tribal operations mature, improved program oversight and government-to-government consultation and collaboration at the regional and national levels will be necessary to assure program quality and accountability.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$900,000) Resources support the implementation of a baseline assessment of environmental conditions on tribal lands. In order to assure that Tribes have adequate information with which to make environmental decisions, basic monitoring and assessment capacity for measuring the environmental conditions of water and air resources and potential waste problems should be established for each Tribe. Once EPA has established a baseline for environmental conditions in Indian country, EPA will also measure improvements in environmental conditions.

- (+$520,000) Funds would support circuit riders and multi-media program and technical assistance activities. EPA will conduct training workshops for Tribes on multi-media programs and fund circuit riders who will provide multi-media program and technical assistance to Tribes.

- (+$255,000, +3.3 FTE) The additional workyears will support oversight of Tribal PPG implementation, "treatment in a similar manner as a state" (TAS) eligibility determinations, and improved oversight of the Indian General Assistance Program (GAP) grants program.

- (+$250,000) Funds would provide assistance to Alaska Tribes in water quality sampling and monitoring, air quality assessment, development of Tribal environmental action plans,

operation and maintenance for drinking water and wastewater facilities, and environmental education.

Annual Performance Goals and Performance Measures

Tribal Environmental Baselines/Environmental Priorities

In 2000 — 20% of Tribal environmental baseline information will be collected and 20 additional tribes (cumulative total of 65) will have tribal/EPA environmental agreements or identified environmental priorities.

In 1999 — 10% of Tribal environmental baseline information will be collected and 10 additional tribes (cumulative total of 45) will have tribal/EPA environmental agreements or identified environmental priorities.

Performance Measures	FY 1999	FY 2000
Tribal environmental baseline information collected	10% Baseline	20% Baseline
Tribes with Tribal/EPA environmental agreements or identified environmental priorities	10 Tribes	20 Tribes

Baseline: EPA will complete the design of a system to collect and manage data on environmental conditions in Indian country by the end of FY 1998. Data collection will begin in early FY 1999. In August 1998, a total of 35 tribes had EPA/Tribal Environmental Agreements or similar plans.

Tribal Multi-Media Programs

In 2000 — 35 additional Tribal environmental media/multi-media programs delegated/approved

In 1999 — 38 (cumulative total of 249) Tribal environmental media/multi-media programs delegated/approved

Performance Measures	FY 1999	FY 2000
Tribal environmental media/multi-media programs delegated/approved	38 Programs	35 Programs

Baseline: In March 1998, there were a total of 211 tribes with delegated or approved multi-media environmental programs in Indian country.

Tribal Environmental Programs

In 2000 — 20 additional Tribes with delegated/approved environmental programs.

In 1999 — 25 (cummulative total of 171) Tribes with delegated/approved environmental programs.

Performance Measures	FY 1999	FY 2000
Tribes with delegated/approved environmental programs	25 Tribes	20 Tribes

Baseline: In March 1998, there were a total of 146 tribes with delegated or approved environmental programs in Indian country.

Verification and Validation of Performance Measures

The Agency biannually updates an internal database on the number of Tribes with delegated/approved environmental programs; the number of tribal environmental programs that EPA has delegated/approved; the number of Tribal/EPA Environmental Agreements; and the number of Tribes that have developed similar plans for environmental protection. The database is validated against Agency Headquarters and Regional office records.

The Agency will work with its Indian Tribal partners to collect baseline environmental information as part of the overall strategy for conducting comprehensive environmental assessments in Indian Country. This information will allow EPA and Tribes to better gauge the environmental outcomes of our partnership for public health and environmental protection. Much of the information for the baseline assessment will come from existing EPA data sources and will conform to Agency quality assurance standards. New data provided by the tribes or collected specifically for the baseline assessment project will be subject to QA/QC review.

Coordination with Other Agencies

Clean Water Action Plan

EPA has been instrumental in the establishment of an Inter-Agency Tribal Action Team to deliver Clean Water Action Plan (CWAP) programs in Indian country. Inter-Agency Workshops for Tribes were conducted in various locations throughout the country. The Tribal Action Team will continue to provide guidance, assistance and support to the CWAP steering committee and work with other action teams.

Domestic Policy Council

The Agency co-chairs the Subgroup on the Environment & Natural Resources of the White House Domestic Policy Council's Working Group on American Indians & Alaska Natives. The Subgroup has initiated "Building National Excellence in the Protection of Tribal Environments & Natural Resources." Under this initiative, inter-agency work teams will examine National Environmental Policy Act, initiate senior level inter-agency workshops on common issues such as Federal trust responsibility, and will conduct a Regional pilot to explore intergovernmental problem-solving options for addressing tribal environmental and natural resources issues.

EPA/BIA Interagency Cooperation

EPA is assisting other Agency programs (OECA, OSWER) and Regional Administrators in the development of a working relationship between EPA Regions and Bureau of Indian Affairs Area Offices on matters of enforcement and compliance assistance. Additional areas under discussion for joint EPA-BIA efforts are technical assistance and training.

Statutory Authorities

Indian Environmental General Assistance Program (GAP) Act as amended (42 U.S.C. 4368b)

Goal 5: Waste Management

Goal 5: Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response V-1
Reduce or Control Risks to Human Health V-9
Prevent, Reduce and Respond to Releases, Spills, Accidents or Emergencies V-39

Environmental Protection Agency

2000 Annual Performance Plan and Congressional Justification

Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response

Strategic Goal: America's wastes will be stored, treated, and disposed of in ways that prevent harm to people and to the natural environment. EPA will work to clean up previously polluted sites, restoring them to uses appropriate for surrounding communities, and respond to and prevent waste-related or industrial accidents.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response	**$2,256,934.3**	**$1,655,913.5**	**$1,656,719.5**	**$806.0**
Reduce or Control Risks to Human Health	$2,076,119.9	$1,491,141.1	$1,477,134.1	($14,007.0)
Prevent, Reduce and Respond to Releases, Spills, Accidents or Emergencies	$180,814.4	$164,772.4	$179,585.4	$14,813.0
Total Workyears:	4,304.8	4,316.9	4,246.1	-70.8

Background and Context

Improper waste management and disposal threatens the health of people, endangers wildlife, and harms vegetation and natural resources. Uncontrolled hazardous and toxic substances, including radioactive waste, often migrate to ground water, surface water, and air. Consequently, they affect streams, lakes, rivers, and water supplies. Toxins bioaccumulate in fish or accumulate in sediments. In 2000, EPA will promote safe waste storage, treatment, and disposal, clean up active and inactive waste disposal sites, and prevent the creation of new waste sites.

Means and Strategy

A principal objective of this goal is to reduce or control the risks posed to human health and the environment through better waste management and restoration of abandoned waste sites. In partnership with states, tribal governments, the public, and other stakeholders, EPA will reduce or control the risks to human health and the environment at thousands of Superfund, Bownfield, Resource Conservation and Recovery Act (RCRA), and Underground Storage Tank (UST) sites.

To achieve this goal, EPA strives to apply the fastest, most effective waste management and cleanup methods available, while involving affected communities in the decision making process. Effective use of research and enforcement strategies will also allow the Agency to further reduce the risks from exposures to hazardous waste.

Another principal objective of this goal is to prevent, reduce, prepare for, and respond to releases, spills, accidents or emergencies. Through the UST, RCRA, Chemical Preparedness and Prevention, and Oil programs, the Agency and its partners manage the practices of thousands of facilities to prevent dangerous releases to the environment. When releases do occur, EPA and its partners will have the capabilities to successfully respond.

Research

Research efforts will continue to focus on ground water and soils research, which seeks to understand the process that governs contaminant transport and fate to improve remediation and monitoring technologies, especially their cost-effectiveness.

The principle areas of concentration are exposure to soil and ground water contaminants, assessment of the risks posed by these contaminants, cost-effective management of these risks, and the development of innovative technologies to characterize and remediate contaminated sites. Work will also continue under active waste management and combustion facilities. Through the development of new and improved methods and models to assess exposure and effects, this research will provide the fundamental science and modeling backbone needed to conduct truly multimedia, multipathway exposure modeling and risk assessment.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Reduce or Control Risks to Human Health

By: 2000 — 170 (for a cumulative total of 408 or 24%) of high priority RCRA facilities will have human exposures controlled and 170 (for a cumulative total of 289 or 17%) of high priority RCRA facilities will have groundwater releases controlled.

By: 2000 — Complete 21,000 Leaking Underground Storage Tank (LUST) Cleanups for a cumulative total of 246,000 cleanups since 1987.

By: 2000 — EPA will fund Brownfields site assessments in 50 more communities, thus reaching 350 communities by the end of 2000.

By: 2000 — EPA will complete 85 Superfund cleanups (construction completions), continuing on a path to reach 925 completed cleanups by the end of 2002.

By: 2000 Enhance scientifically-defensible decisions for site cleanup (cu) by providing targeted research & tech. support.

By: 2000 Ensure trust fund stewardship by recovering costs from PRPs when EPA expends trust fund monies. Address cost recovery at all NPL and non-NPL sites with a statute of limitations on total past costs equal to or greater than $200,000.

By: 2000 Maximize all aspects of PRP participation., including 70% of the work conducted on new construction starts at non-Fed Fac sites on the NPL, and emphasize fairness in the settlement process. Result is timely and protective clean up of the Nation's worst contaminated sites and other significant threats to public health.

By: 2000 Ensure compliance with Federal facility statutes and CERCLA Agreements and ensure completion of current NPL CERCLA IAGs.

Objective 02: Prevent , Reduce and Respond to Releases, Spills, Accidents or Emergencies

By: 2000 146 more hazardous waste management facilities will have approved controls in place to prevent dangerous releases to air, soil, and groundwater, for a total of 65 percent of 3,380 facilities.

By: 2000 400 additional facilities will be in compliance with the Spill Prevention, Control and Countermeasure (SPCC) provisions of the oil pollution prevention regulations (for a cumulative of 890 facilities since 1997).

By: 2000 90% of USTs will be in compliance with the December 22, 1998, requirements, which improves upon the estimated 65 percent as of the December 22, 1998 deadline.

By: 2000 Enhance scientifically defensible decisions for active management of wastes, including combustion, by providing targeted research and technical support

Highlights

In 2000, actions taken to clean up Superfund sites will reduce the effect of uncontrolled releases on local populations and sensitive environments. EPA will complete construction at 85 Superfund sites and will take action to address contamination at 300 sites using removal authorities. EPA will also obtain commitments from Potentially Responsible Parties (PRPs) to start new construction at National Priorities List (NPL) sites.

The direction and emphasis of the Superfund program in 2000 is to build on past successes and maintain the pace of site cleanups. Administrative reforms will continue to provide benefits which include savings in the cost and duration of Superfund actions. Additionally, Administrative

reforms have improved the program's effectiveness and enabled the Agency to accomplish the following as of September 30, 1998:

- **Over 89%** of Superfund's sites (1,228 of 1,370) on the NPL are either undergoing cleanup construction (remedial or removal) or are completed.

- **585** Superfund sites have had all cleanup construction completed (41% of sites on the NPL).

- Approximately **5,500** removal actions have been taken at hazardous waste sites to immediately reduce the threat to public health and the environment.

- Nearly **31,000** sites have been removed from the CERCLIS waste site list to help promote the economic redevelopment of these properties.

To accomplish Superfund's objectives, EPA works with states, Indian Tribes, and other Federal agencies to protect human health and the environment and to restore sites to uses appropriate for the nearby communities. The Agency also provides outreach and education to the surrounding communities to improve their direct involvement in every phase of the cleanup process and understanding of potential site risks.

One of Superfund's major program goals is to have potentially responsible parties pay for and conduct cleanups at abandoned or uncontrolled hazardous waste sites. The Superfund enforcement program maximizes PRP participation and is committed to reforms which increase fairness, reduce transactions costs and promote economic redevelopment. The Agency also seeks to recover costs associated with site cleanup from responsible parties when trust fund monies have been expended.

Brownfields are abandoned, idled, or under-used industrial and commercial properties which are not Superfund NPL sites. Economic changes over several decades have left thousands of communities with these contaminated properties and abandoned sites. Concerns about environmental liability and cleanup, infrastructure declines, and changing development priorities have worsened the situation.

As with the Superfund program, the Brownfields Initiative has a coordinated federal approach to assist our partners in better addressing environmental site assessment and cleanup. In 2000, the Agency will fund 50 additional assessment demonstration pilots and supplement 50 existing assessment pilots to communities. These pilots provide EPA, States, local governments, and Federally recognized Tribes with useful information and new strategies for promoting a unified approach to environmental site assessment and characterization, and redevelopment. Beginning in 2000, the Agency will provide funding to states for Brownfields site assessment activities and to facilitate communication between Brownfields pilots and State environmental authorities. To further enhance a community's capacity to respond to Brownfields redevelopment, the Agency will also make 70 awards to capitalize Brownfields Cleanup Revolving Loan Fund Pilots (BCRLF) to

communities completing their Brownfields Site Assessment Demonstration Pilot activities. EPA will fund 10 job training pilots for community residents and will provide $3.0 million to NIEHS to support minority worker training and augment the communities' capacities to cleanup Brownfields sites. In addition, EPA will continue to explore connections between RCRA low-priority corrective action efforts and cleanup of Brownfields properties.

In 2000, the RCRA Corrective Action program will actively implement the RCRA Cleanup Initiative. This initiative targets active sites and is aimed at reforming the current RCRA Corrective Action Program. The impetus of the RCRA Cleanup Initiative is to remove barriers that would prevent the Agency from achieving its GPRA Objective of reducing risk to human health and the environment. The RCRA Cleanup Initiative has identified several projects that are intended to: 1) reduce impediments to achieving the Agency's Objective; 2) enhance State and stakeholder involvement and; 3) promote innovative approaches to cleanup actions. It incorporates several longer term efforts to enhance the program into a more comprehensive, focused approach.

In 2000, the RCRA hazardous waste permits program will have permits or other approved controls in place for 146 additional RCRA hazardous waste management facilities for a cumulative total of 3,380 facilities. These efforts will minimize the threat of exposure to hazardous substances because the RCRA program's comprehensive framework regulates the handling, transport, treatment, storage, and disposal of hazardous waste. To ensure that these controls are more effective and efficient, the Agency will streamline its permit process for implementors and for the regulated community.

The Agency has also developed a strategy to address hazardous waste combustion facilities. Phase I of the Maximum Achievable Control Technology (MACT) standards under the Clean Air Act, which will revise standards for incinerators and cement and lightweight aggregate kilns that burn hazardous waste will be finalized in 1999. Thus, as the MACT standards are implemented by 2003, the Agency will reduce the emissions of dioxins, furans, and particulate matter from these sources. These efforts will further reduce the indirect exposure (primarily through the food chain) to hazardous constituents in emissions, especially to children.

The Agency has several efforts to better address risk in the RCRA Program. The proposed Hazardous Waste Identification Rule seeks to regulate lower risk wastes, such as those that have already undergone treatment, under alternative state non-hazardous waste regulation programs. The Air Characteristics Study will be enhanced in 2000 to better answer the question whether some industrial wastes should be classified as hazardous because of risks posed by their air emissions. In 2000, as part of the Agency's Air Toxics Initiative, the RCRA program will explore the need for regulatory changes to focus on these risks from wastewater treatment tanks, surface impoundments, and landfills. The Agency is working to improve test methods under its Toxic Constituent Leaching Procedure (TCLP) to better evaluate waste leaching potential for assessing whether a waste should be classified as hazardous, how effective a treatment is, and whether land disposal is an appropriate method for managing particular wastes.

In 2000, the Agency will work toward completing and implementing, with states and industry, voluntary guidelines for industrial non-hazardous waste management. These voluntary guidelines address a range of issues including groundwater contamination, air emissions, and alternatives to waste disposal. Although the states implement the municipal solid waste (MSW) landfills regulatory programs, the Agency establishes minimum national standards for state compliance. The Agency also reviews and approves state MSW landfill permit programs. Furthurmore, the Agency will continue working with states to ensure that an additional 141 facilities for a cumulative of 2,600 out of 3,536 RCRA municipal solid waste facilities have approved controls in place to prevent dangerous releases to air, soil, groundwater, and surface water. These activities will provide a uniform application of minimal safe management standards to help ensure that sufficient controls are in place.

The Agency conducts scientific research to support its programs. Under the RCRA program, the Agency will conduct scientific research on active hazardous waste management and combustion facilities to ensure that our regulatory approach will continue to be successful in the future. The Agency seeks innovative methods for stabilizing and solidifying toxic constituents in waste streams thereby reducing their dispersion on the public and the environment.

The Agency's highest priorities in the Underground Storage Tank (UST) program are to (1) promote and enforce compliance with regulatory requirements aimed at preventing and detecting UST releases, thereby reducing releases to the environment and (2) to address the backlog of 168,000 cleanups of Leaking Underground Storage Tanks (LUST). The Agency anticipates additional releases will be discovered as owners and operators comply with the December 1998 requirements for upgrading, replacing, or closing USTs. In 2000, the Agency's anticipates that 21,000 LUST cleanups will be completed under the supervision of EPA and its state, local, and tribal partners and that approximately 90% of USTs will be in compliance with the December 22, 1998 requirements.

Reducing chemical accidents is vital to ensure that communities are not exposed to hazardous materials. The Agency continues its efforts to help states and Local emergency Planning Committees (LEPCs) implement the Risk Management Program (RMP). EPA has made steady progress in this area and in 2000, with additional resources, will delegate the RMP to four additional states for a cumulative total of 13. To assist in reaching this goal, EPA will provide technical assistance grants, as well as technical support outreach and training to help both states and LEPCs develop their accident prevention capabilities. Through these activities, States, local communities and individuals will be better prepared to prevent and prepare for chemical accidents.

Every day oil spills pose risks to human health, the environment and the economy. EPA's Oil Spill program responds to and monitors oil spills that occur in the waters of the United States and adjoining shorelines. Approximately 20,000 oil spills are reported annually. Over the past three years, EPA has received and evaluated 35,000 oil spill notifications, served as lead responder at 275 oil spills, and shared responsibility with other parties at 475 responses. To prevent spills to the greatest extent practicable, the Agency will take preventive measures by ensuring that 400 additional oil storage facilities are in compliance with the Spill Control and Countermeasures (SPCC)

regulations. In addition, the Agency will improve the quality and quantity of data provided in Area Contingency Plans, especially concerning environmentally sensitive and economically important areas. By working with state and local governments and industry, EPA's Area Planning activities ensure effective and immediate cleanup of oil spills.

In the event of a terrorist act where there is a threat to human health or the environment, the Agency is prepared to respond. The Agency has begun to prepare and educate other organizations such as our Federal partners, and state and local planners about the National Response System and the National Domestic Preparedness Program for terrorist events. In 2000, the Agency will provide anti-terrorism training to 19 of the most vulnerable communities.

Research

In 2000, the Agency will continue to focus its research efforts in the exposure, risk assessment, and remediation areas of waste research. Developing field analytical methods for characterizing groundwater and soils, producing ecological soil screening values for common soil contaminants, and researching innovative uses of abiotic treatment technologies continue to be pivotal areas of focus in the Agency's effort to support the assessment and remediation of sites with contaminated soil and groundwater.

Research in support of multimedia science for the Hazardous Waste Identification Rule (HWIR) will continue in 2000. The intent of these efforts is to develop a systems approach to modeling and data management. Such an approach will facilitate scientifically credible assessments of multimedia-based human and ecological exposure to chemical stressors. Combustion research will provide the technical basis to determine risks and set operational monitoring and controls for individual combustion facilities.

External Factors

There are a number of external factors that could substantially impact the Agency's ability to achieve the outlined objectives under this goal. The external factors include, for example, heavy reliance on state partnerships, development of new environmental technology, commitment by other federal agencies, or statutory barriers.

The Agency's ability to achieve its goal of reducing the number of confirmed releases from underground storage tanks (USTs) is dependent on the performance of state programs. EPA does not fully fund state UST programs, so achievement of the annual and strategic goals is dependent on the strength of state programs and state funding levels. In most cases, states have the primary responsibility for confirming releases from USTs and for ensuring that facilities meet the minimum technical requirements to prevent releases, except in Indian Country.

The Agency's ability to achieve its goals of reducing risks posed by Superfund sites and ensuring trust fund stewardship are partially dependent upon the capacity of our partners. The Agency's goals of construction completions, cost recovery, and maximizing PRP participation are heavily dependent on the progress of PRP negotiations, agreements with states ans tribes, and the nature of contamination at NPL sites. In addressing Federal facilities, internal decision processes within other Federal agencies such as the Department of Defense and the Department of Energy would impact our goal of establishing Restoration Advisory Boards (RABs)/Site Specific Advisory Boards (SSABs) and other clean up activities.

The Agency's ability to achieve its goal of reducing community risks from chemical accidents is dependent on a number of factors, including: 1) Delegating the response RMP review program to more states in 2000 will depend upon those states enacting laws, allocating funds and developing specific capabilities that will enable them to review and audit risk management plans; and 2) Industry's willingness to provide the strong top-down leadership to make RMP compliance a priority and commit the resources necessary to get the job done.

The Agency's ability to achieve its RCRA goals to prevent releases by proper facility management is dependent on whether states, the primary implementors, have received authorization of their hazardous waste management or approval of municipal solid waste landfill permit programs. As such, EPA's annual performance depends, in part, on its state partners' commitment to this goal.

Environmental Protection Agency

2000 Annual Performance Plan and Congressional Justification

Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response

Objective # 1: Reduce or Control Risks to Human Health

By 2005, EPA and its partners will reduce or control the risk to human health and the environment at over 375,000 contaminated Superfund, RCRA, UST and brownfield sites.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce or Control Risks to Human Health	**$2,076,119.9**	**$1,491,141.1**	**$1,477,134.1**	**($14,007.0)**
Environmental Program & Management	$42,645.0	$42,301.1	$42,174.8	($126.3)
Science & Technology	$6,761.2	$49,809.4	$8,375.2	($41,434.2)
State and Tribal Assistance Grants	$28,400.6	$24,808.8	$24,808.8	$0.0
Leaking Underground Storage Tanks	$69,128.7	$70,418.7	$69,500.7	($918.0)
Oil Spill Response	$962.0	$962.0	$962.0	$0.0
Hazardous Substance Superfund	$1,928,222.4	$1,302,841.1	$1,331,312.6	$28,471.5
Total Workyears:	3,435.7	3,455.5	3,357.4	(98.1)

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
RCRA Corrective Action	$22,870.7	$18,167.4	$22,755.5
RCRA State Grants	$28,400.6	$24,808.8	$24,808.8
Federal Preparedness	$1,500.0	$1,500.0	$1,500.0

Leaking Underground Storage Tanks (LUST)Cooperative Agreements	$57,700.0	$58,990.0	$57,750.0
Superfund Remedial Actions	$1,056,615.3	$588,190.0	$592,842.5
Superfund Removal Actions	$328,433.6	$199,419.1	$207,399.9
Federal Facilities	$28,641.6	$28,641.6	$28,720.4
Assessments	$92,719.6	$87,738.8	$88,970.3
Brownfields	$90,882.4	$91,538.9	$91,667.5
ATSDR Superfund Support	$64,000.0	$76,000.0	$64,000.0
NIEHS Superfund Support	$48,526.7	$60,000.0	$48,526.7
Other Federal Agency Superfund Support	$10,492.3	$10,000.0	$11,035.0
Hazardous Substance Research:Hazardous Substance Research Centers	$1,094.2	$1,067.2	$1,092.5
Hazardous Substance Research:Superfund Innovative Technology	$7,682.6	$7,663.1	$7,114.6
EMPACT	$921.7	$398.4	$440.2
Common Sense Initiative	$0.0	$135.6	$0.0
Superfund - Maximize PRP Involvement (including reforms)	$96,266.6	$89,109.2	$89,234.5
Superfund - Cost Recovery	$30,494.1	$30,494.1	$30,494.1
Superfund - Justice Support	$29,663.5	$29,000.0	$28,663.5

FY 2000 Request

Leaking Underground Storage Tank

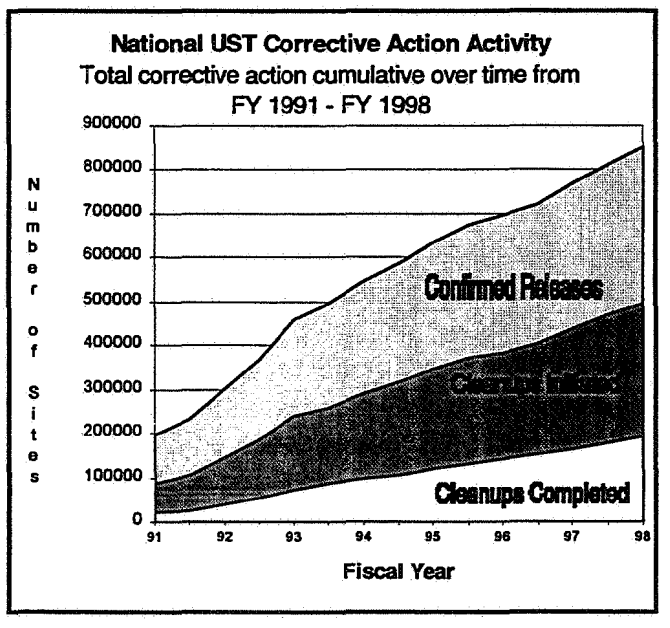
This objective includes $68,270,400 in the Leaking Underground Storage Tank (LUST) account for the LUST cleanup program. The LUST program promotes rapid and effective responses to releases from underground storage tanks containing petroleum. This is done by enhancing state, local and tribal enforcement and response capability in the Leaking Underground Storage Tank (LUST) program.

In 2000, the Agency's goal is to assist in the completion of 21,000 cleanups under the supervision of EPA and its state, local and tribal partners. Corrective action at sites where Underground Storage Tank (UST) releases have contaminated soil and/or groundwater is a key element of the UST/LUST program. Nearly all corrective actions are undertaken by UST owners and operators under the supervision of State or local agencies (or EPA, for USTs on Indian lands).

Over the next several years, the Agency's highest priorities in the LUST program will be to address the backlog of 168,000 cleanups (as of September 1998) yet to be completed. To help address the backlog and to help states make more efficient use of their resources (including state funds that reimburse some UST owners and operators for a portion of their cleanup costs), the Agency will continue to administer the LUST Trust Fund, which is used largely to fund cooperative agreements under which states oversee cleanups by UST owners and operators. LUST Trust Fund dollars are also used to clean up releases where the responsible owner or operator is unknown, unwilling or unable. The Agency also commits LUST resources to address the environmental problems caused by leaking tanks on Indian lands.

EPA anticipates that there will be additional releases discovered as owners and operators comply with the December 1998 requirements for upgrading, replacing or closing USTs. However, EPA's LUST program will continue to support state efforts to make cleanups better, cheaper and faster. For example, the LUST program assists states in addressing responsible party cleanups and voluntary compliance with corrective action and financial responsibility requirements. Furthermore, the Agency will continue to support state efforts to design and implement risk-based corrective action (RBCA) programs. Because it entails moving from generic, one-size-fits-all cleanup goals to site-specific cleanup goals based on risk assessments, RBCA requires a major re-engineering of state programs. Ten states are now implementing RBCA programs. Nearly all others are in various stages of RBCA training and program design. The Agency estimates it will take several years before RBCA implementation is completed nationwide. To promote RBCA implementation, the Agency will provide assistance to help state and tribal UST programs surmount technical impediments. Examples include the development of RBCA guidance for Indian lands, the collection and analysis of state RBCA performance measures, RBCA "fate and transport" modeling guidance, and assisting in resolving multi-state technical implementation barriers to RBCA development and implementation.

The Agency will continue supporting information exchanges among the states; developing and providing policy guidance, technical manuals, training programs, seminars; and supporting the use of innovative cleanup technologies, the use of computer software on topics such as cost-estimation and cost-control, and the potential uses and limitations of monitored natural attenuation. In addition, in collaboration with other EPA offices, the LUST program will identify and evaluate techniques for cleaning up methyl tertiary butyl ether (MTBE), a gasoline component found with increasing frequency at LUST sites.



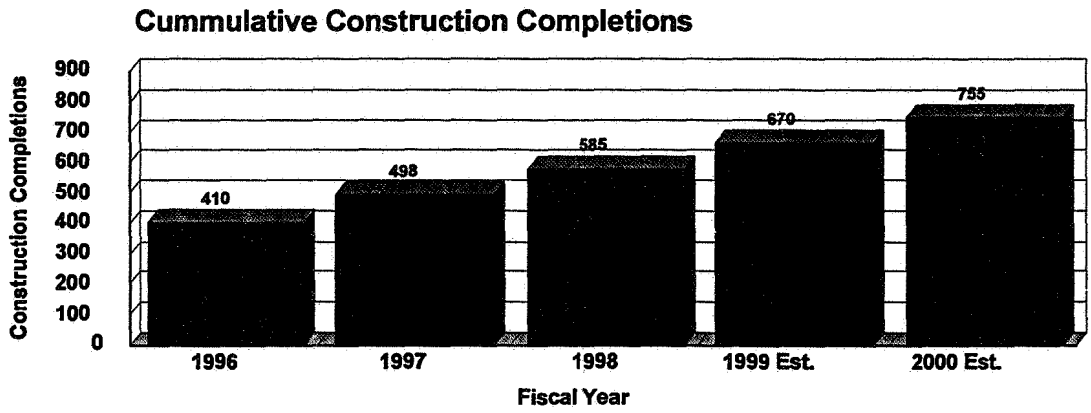
The Agency has primary responsibility for implementation of the LUST corrective action program on Indian lands. Through the end of September 1998, there were 1,024 confirmed releases on Indian lands. In 767 cases, cleanups had been initiated, and 427 of them had been completed. The Agency projects that cleaning up all known and yet-to-be-discovered releases on Indian lands will take several more years. In collaboration with tribes, the Agency is developing a RBCA process for LUST sites on Indian lands.

Superfund

This objective includes $1,042,786,800 for Superfund response/cleanup. The Superfund program addresses contamination from uncontrolled releases at Superfund hazardous waste sites that threatens human health, the environment, and the economic vitality of local communities. Superfund sites with contaminated soils and groundwater occur nationally in a large number of communities, many of them urban areas, where they are often accessible to children or present exposure to disadvantaged populations. In fact, more than 27 million Americans, including over 4 million children, live within four miles of a Superfund site. Once contaminated, groundwater and soils may be extremely difficult and costly to clean up. Some sites will require decades to be completed.

In 2000, EPA will continue its successful emphasis on completing construction at Superfund sites by obtaining commitments for potentially responsible parties (PRPs) to conduct work at new construction starts at non-Federal facilities on the NPL, and ensuring compliance with Federal facility statutes and Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) agreements. In 2000, EPA will maintain the pace of construction completions by accomplishing 85 cleanups for a cumulative total of 755.

To protect human health and the environment and address potential barriers to redevelopment, EPA works with states, Indian tribes, and other Federal agencies to: 1) assess sites to determine whether they meet the criteria for Federal Superfund response actions; 2) prevent,



minimize or mitigate significant threats at Superfund sites through removal actions; 3) generate accurate risk assessment and cost-performance data critical to providing the technical foundation for decisions made in environmental cleanup programs; 4) complete remedial cleanup construction at sites (including Federal facilities) listed on the NPL; 5) develop technologies for cost-effective characterization and remediation; 6) enhance the role of states and Indian tribes in implementation of the Superfund program; 7) work with the surrounding communities to improve their direct involvement in every phase of the cleanup process and their understanding of potential site risk; 8) promote reuse and redevelopment of remedial and removal Superfund sites.

EPA's efforts to address uncontrolled releases at Superfund sites begin when states, Indian tribes, citizens, other Federal agencies, or other sources notify EPA of a potential or confirmed hazardous waste site or incident. EPA then confirms this information, places sites requiring Federal attention in the Agency's Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database, and evaluates site data to determine whether sites need immediate removal action and/or placement on the NPL for long-term cleanup. If no further Federal action is appropriate, EPA removes the site from the inventory and may refer the site to state or tribal environmental authorities for further attention if warranted. In the case of Federal facilities, sites are placed on the Federal Facility Hazardous Waste Docket for assessment. The Agency is requesting a total of $88,970,300 for site assessment.

Removal authority under CERCLA is used by EPA to prevent, reduce or mitigate threats posed by releases or potential releases of hazardous pollutants in emergency and non-emergency situations at NPL and non-NPL sites. EPA undertakes removal response actions at: 1) emergency incidents where response is necessary within a matter of hours (e.g., threats of fire or explosion); 2) time-critical situations at NPL sites to make these sites safe from immediate threats while they await remedial action; (3) time-critical incidents at non-NPL sites posing major public health and environmental threats; and, (4) non-time critical situations at both NPL and non-NPL sites to promote quicker and less costly cleanup. Sites known to pose the greatest potential risk to public health and the environment receive priority. The Agency is requesting a total of $207,399,900 for Removal Action activities.

For sites listed on the NPL, restoration work begins with site characterization and a feasibility study to review site conditions and proposals for future land use. This forms the foundation for the Record of Decision (ROD) and remedy selection. Public involvement is a key component in selecting the proper remedy at a site. A remedial action is performed upon approval of the remedial design and represents the actual construction or other work necessary to implement the remedy selected. The United States Army Corps of Engineers and the Bureau of Reclamation assist EPA in implementing most high-cost, Trust Fund-financed remedial actions and provide on-site technical expertise.

Many sites have more than one operable unit and each unit goes through the process from study to cleanup. Once the cleanup construction is completed at an operable unit, operation and maintenance activities are maintained to ensure cleanup methods work properly and the site remedy

continues to be effective. After construction completion, the final phase in long-term restoration is the five-year performance review to ensure the continued protectiveness of the remedy. The various cleanup stages and activities allow the Agency to quickly mitigate immediate threats to public health and the environment, develop and implement effective cleanup decisions, and eventually remove sites from the NPL. The Agency is requesting a total of $592,842,500 for long-term remediation work.

EPA provides technical and regulatory oversight at Federal facilities on the NPL to ensure protection of human health and the environment through effective program implementation. EPA works with its Federal partners to find protective, creative, cost-effective solutions to their environmental problems; to rebuild local communities while protecting human health and the environment; and to ensure meaningful public involvement at federal facilities. Executive Order 12580 establishes the framework for implementing the Superfund program and delegates certain authorities ascribed in the statute to the President, to the Departments of Energy and Defense. These Federal agencies have lead response authorities to address releases or threats of releases at facilities within their purview - for conducting removal actions and for generally selecting and implementing remedial actions. The Agency is requesting a total of $28,720,400 for Federal facility work.

EPA is committed to involving citizens in the site cleanup process. Superfund community relations is based on two-way communication designed not only to keep citizens informed about site progress, but also to afford them the opportunity to provide input on site decisions. Through outreach efforts, such as holding public meetings, establishing community advisory groups, providing communities with financial assistance to hire technical consultants to assist them in understanding the problems and potential solutions to the contamination problems, and distributing site-specific fact sheets. EPA strives to create a decision-making process to clean up sites that the communities feel is open and legitimate, and improves the community's understanding of potential risk at hazardous waste sites. Similarly, at Federal facility Superfund sites, the Agency encourages citizen involvement by working with, for example, the Department of Defense to establishes Restoration Advisory Boards (RABs) and the Department of Energy to establish Site Specific Advisory Boards (SSABs). EPA is conducting a project to measure the effectiveness of the Superfund program's community outreach and involvement activities at a sample of national superfund sites. The results will be used both for GPRA reporting purposes, and to provide site specific feedback to help Regional staff improve their community involvement programs.

States and Indian tribes are key partners in the cleanup of Superfund hazardous waste sites. Under Superfund, EPA can authorize the State or tribe to carry out a Fund-financed response. More frequently, the State or tribe may operate as a support agency. In this role, they are actively involved in site response activities, but they do not take on a lead role for the response. To support their involvement as a lead or support agency, EPA provides financial support through cooperative agreements to conduct removal, site assessment, remedial, and enforcement projects and core infrastructure activities that are associated with administering state and tribal programs. With the May 1998 release of the "Plan to Enhance the Role of States and Tribes in the Superfund Program," EPA has provided opportunities for increased state and tribal involvement in the program.

Other Federal agencies (OFAs) contribute to this objective by providing essential services in areas where EPA does not possess the needed Superfund specialized expertise. Contributors include the Agency for Toxic Substances and Disease Registry (ATSDR), the National Institute of Environmental Health Sciences (NIEHS), the Department of Justice (DOJ), the Occupational Safety and Health Administration (OSHA), the National Oceanic and Atmospheric Administration (NOAA), the Department of Interior (DOI), the United States Coast Guard (USCG), and the Federal Emergency Management Agency (FEMA). Some of the essential services performed by these Federal agencies include the following: 1) ATSDR conducts public health assessments at NPL and non-NPL sites; maintains toxicology databases for chemicals found at sites; and provides health education to health care providers, local and national health organizations, and state and local health departments; and, 2) NIEHS manages a worker training grants program which trains workers who are, or may be, working with hazardous waste and funds a basic research program which focuses on assessing the impacts of complex chemical mixtures on humans. The Agency is requesting a total of $152,225,200 for OFA activities.

Overview of Other Federal Agency (OFA) Funding

Agency	FY 1999 Enacted	FY 2000 Request
ATSDR	$76,000,000	$64,000,000
NIEHS	$60,000,000	$48,526,700
DOJ	$29,000,000	$28,663,500
USCG	$4,800,000	$5,135,000
FEMA	$1,100,000	$1,100,000
NOAA	$2,450,000	$3,000,000
DOI	$1,000,000	$1,100,000
OSHA	$650,000	$700,000
TOTAL	$175,000,000	$152,225,200

EPA has significantly improved the Superfund program through administrative reforms and these efforts will continue in 2000. There have been many noteworthy achievements over the last year which include establishing Community Advisory Groups (CAG) at 47 sites; reviewing 20 site decisions saving an estimated $31.5 million, saving more than $1.0 billion in future costs by updating remedies at more than 210 sites; and evaluating over 50 projects on the Risk-Based Priority Panel for NPL sites. The successes realized throughout Superfund place the Agency in a uniquely positive position to achieve and expand Superfund accomplishments in the coming years.

Nearly three times as many Superfund sites have been cleaned up in the past six years than in all of the prior years of the program combined. As of September 30, 1998, EPA has accomplished

the following: 1) Over 89% of sites (1,228) on the final Superfund NPL listing of 1,370 sites are either undergoing cleanup construction (remedial or removal) or are completed; 2) 585 Superfund sites have reached construction completion (41% of sites on the NPL); 3) 457 (454 Final/3 Proposed NPL sites) Superfund sites (32% of sites on the NPL) have cleanup construction underway. An additional 209 sites have had or are undergoing a removal cleanup action (15% of sites on the NPL); 4) Approximately 990 sites have all final cleanup plans approved; 5) Approximately 5,500 removal actions have taken place at hazardous waste sites to immediately reduce the threat to public health and the environment; and 6) Over 31,000 sites have been removed from the CERCLIS waste site list to help promote the economic redevelopment of these properties.

Superfund enforcement program has successfully encouraged or compelled potentially responsible parties PRPs to undertake or fund approximately 70% of new remedial work at NPL sites in recent years. The program focuses on the following efforts: 1) maximizing (PRP) participation in conducting and funding response actions while promoting fairness in the enforcement process; 2) recovering costs from PRPs when EPA expends funds from the Superfund Trust Fund; and conducting 30 negotiations from Federal facilities on site remediation. The Agency provides funds to the Department of Justice (DOJ) for an Interagency Agreement to assist EPA Superfund in enforcement efforts. This objective also supports the RCRA corrective action and the regional leaking underground storage tank (LUST) legal enforcement program.

One of the primary goals of the Agency for 2000 is to maximize PRP participation in conducting and funding cleanup actions while promoting fairness in the enforcement program. The Superfund enforcement program ensures that responsible parties cooperatively contribute their equitable share toward cleaning up Superfund hazardous waste sites. It also implements various Superfund reforms to increase fairness, reduce transaction costs and promote economic redevelopment.

In 2000, the Agency will negotiate cleanup agreements at sites on the NPL and will also achieve removal agreements. Where negotiations fail, the Agency will either take unilateral enforcement actions to require PRP cleanup or use Trust Fund dollars to remediate sites. When Trust Fund dollars are used to clean up sites, the program will take cost recovery actions against PRPs to recover expenditures. (See "Superfund Cost Recovery" program below.)

Superfund enforcement reforms continue to provide gainful benefits. The Agency will continue to implement various Superfund enforcement reforms to increase fairness, reduce transactions costs and allow for economic redevelopment. These reform efforts include undertaking PRP searches and investigations to develop sufficient information to make orphan share determinations. This includes making orphan share determinations for remedial design/ remedial action settlements. Through enforcement reforms the Agency also expedites negotiations to facilitate settlements with parties with limited ability to pay, more effective and widespread use of alternative dispute resolution (ADR), and early de minimis settlements. For example, the enforcement program has achieved over 400 de minimis settlements with over 18,000 settlers protecting small parties from potentially lengthy and expensive private party lawsuits. Furthermore,

fairness and redevelopment benefits are gained from issuing administrative orders to all PRPs at a given site, creating site-specific accounts, removing liability barriers to economic redevelopment through prospective purchaser agreements, and assessing PRP compliance with clean-up obligations at sites with potential environmental justice issues and seek penalties for significant non-compliance with clean-up requirements, as appropriate.

The Superfund Cost Recovery Program demonstrates fiscal stewardship and responsibility by addressing past costs at sites. By pursuing cost recovery settlements, the program promotes the principle that polluters should pay cleanup costs at sites where they caused or contributed to the contamination and maximizes the leverage of the Trust Fund to address future threats posed by contaminated sites.

In 2000, the Superfund Cost Recovery program will recover monies expended from the Trust Fund from viable responsible parties. Where settlement negotiations and previous enforcement actions have failed to achieve PRP response, and Trust Fund dollars are used to clean up sites, the program will take cost recovery actions against PRPs to recover expenditures. Recovered funds will then be available to clean up other contaminated sites, as appropriated. The program will achieve this recoupment through administrative cost recovery; CERCLA section 107 case referrals; and alternative dispute resolution (ADR).

The enforcement program's involvement in case referrals and support includes: case development and preparation, referral and post-filing actions. The program will also provide case and cost documentation support for the docket of cases currently being worked on by the Department of Justice (DOJ). The enforcement program will meet cost recovery statute of limitation deadlines and use alternative dispute resolution to resolve cases in an equitable and timely manner.

Brownfields

Brownfields are abandoned, idled, or under-used industrial and commercial properties where expansion or redevelopment is complicated by real or perceived contamination. Brownfields' properties are not Superfund NPL sites. Economic changes over several decades have left numerous communities with these contaminated properties and abandoned sites. In fact, the General Accounting Office has estimated that over 450,000 brownfields properties exist. Concerns about environmental liability and cleanup, infrastructure declines, and changing development priorities have worsened the situation.

In response to needs for the assessment and cleanup of brownfields properties, the Agency implements strategies to bring these properties back into use for the benefit of their communities. The Brownfields Economic Redevelopment Initiative is a comprehensive approach to empower states, communities, and other stakeholders interested in environmental cleanup and economic redevelopment to work together to prevent, assess, safely clean up, and sustainably reuse Brownfields.

The Agency has provided Brownfields Site Assessment Demonstration Pilots for up to $200,000 each. In FY 2000, the Agency will begin to supplement some existing site assessmetn pilots with additional site assessment funding. These pilots provide EPA, states, local governments, and Federally recognized Indian Tribes with useful information and new strategies for promoting a unified approach to environmental site assessment and characterization, and redevelopment. In FY 2000, the Agency will also begin providing funds to states to provide EPA pilots with State Superfund program assistance. This assistance is designed to facilitate communication between brownfields pilots and State environmental authorities, and expedite the redevelopment and reuse of the brownfields properties.

Where appropriate, the Agency provides funding for targeted brownfields assessments, usually in communities without an assessment pilot. This activity enjoys wide support from cities and other local communities. This funding provides preliminary assessments and site investigations (PA/SI) using standard methodology established by the American Society for Testing Materials. Site assessments at non-pilot Brownfields sites are performed either under existing PA/SI cooperative agreements with states or through EPA contractors.

The Agency will also award cooperative agreements to capitalize Brownfields Cleanup Revolving Loan Fund Pilots (BCRLF) of up to $500,000 to communities completing their brownfields assessment demonstration pilot activities. This funding enables pilots to develop cleanup strategies, make loans to prospective purchasers to clean up properties, and encourages cities to leverage other funds into their revolving loan fund pools. In addition, the Agency awards brownfields job training and development demonstration pilots at up to $200,000 over two years to help residents of brownfields communities take advantage of new jobs created by the assessment and cleanup of brownfields.

Funding to support the expansion, enhancement and development of State voluntary cleanup programs (VCPs) continues to be an important activity in the Agency's attempt to reuse and redevelop brownfields properties. EPA provides both monetary and technical/legal assistance to states and tribes developing and enhancing VCPs. VCPs address contaminated sites which do not require Federal action, but which need cleanup before the sites are considered for reuse. EPA believes that building strong and effective state and tribal programs, such as VCPs, will also complement efforts to address the cleanup of brownfields properties.

EPA's Superfund Federal Facilities Base Realignment and Base Closure (BRAC) program facilitates the reuse and redevelopment of Federal property. Since the early 1990's, the Federal Government has reduced its military bases and nuclear production facilities; consequently, the Federal government is disposing of property to reduce operation and maintenance expenses while protecting the livelihood of the local communities. The Federal facility program plays a key role in these efforts through its review and concurrence finding that properties are environmentally suitable for transfer, either by deed or lease. EPA's BRAC program totals 143 FTE in 2000 and will be funded through a reimbursable agreement with the Department of Defense.

Resource Conservation and Recovery Act

This objective includes $36,063.5 in the EPM account and $24,808,800 in the STAG account for the Resource Conservation and Recovery Act (RCRA) program. Under RCRA, EPA and authorized States are required to clean up environmental contamination at more than 5,000 sites across the country where hazardous wastes are being or have been stored, treated, or disposed. The most serious pollution problems at RCRA facilities occur when releases migrate off-site, contaminating public and private drinking water supplies, and in a number of cases endangering wetlands and other sensitive ecosystems. This objective addresses approximately 1,700 high priority facilities that are identified as "high risk" under the National Corrective Action Priority System (NCAPS) and other priorities identified by the state or region that may not be high risk but are clear cleanup priorities for other considerations, such as environmental justice or Brownfields revitalization. We are developing new guidance focused on clearly identifying the type of information as well as the documentation needed to make defensible determinations as to whether the GPRA performance goals have been achieved. In 1999, the Agency will have finalized its baseline determination and completed development of national guidance for evaluating and documenting environmental indicator determinations.

Although the long term goal for the RCRA Corrective Action Program is to achieve final cleanup at all RCRA facilities, the Agency's policy is to focus implementation efforts on nearer term actions to mitigating actual or imminent human exposure problems, as well as actions designed to stop the further spread of contaminants in the environment, attending to the worst sites first.

Base efforts in 1999 for the Corrective Action Program encompass regulation reform, streamlining and reinvention projects that will improve the program's implementation. These efforts are a part of a larger RCRA Cleanup Initiative, which is aimed at reforming the RCRA Corrective Action Program in 2000 and beyond. The components of the RCRA Cleanup Initiative will promote achievement of the strategic objective by protecting public health and the environment more effectively, efficiently and promptly.

The impetus of the RCRA Cleanup Initiative is to increase the pace of cleanup and remove barriers that would prevent the Agency from achieving its objective of reducing risk to human health and the environment. The RCRA Cleanup Initiative has identified several projects that are intended to encourage cleanups, reduce impediments to achieving the Agency's objective, enhance State and stakeholder involvement, and promote innovative approaches to cleanup actions. It incorporates several long term efforts to enhance the program into a more comprehensive, focused approach. The completion of RCRA Cleanup projects, described below, will accelerate the pace of RCRA cleanups and assist in achieving the Agency's strategic objective.

Regulatory action under RCRA Cleanup will include the Hazardous Waste Identification Rule (HWIR)-Media Regulation and the Post Closure Rule. HWIR-Media, which the Agency finalized in November 1998 and which will be effective June 1999, creates a new RCRA permit called a Remedial Action Plan (RAP) for managing wastes from cleanups that will be faster and

easier to obtain than other permits, and that will not require facility-wide corrective action. In addition, the HWIR-Media Rule provides for streamlined authorization procedures when states make minor revisions to their RCRA program.

In 2000, the Agency will implement the Post Closure rule which the Agency finalized in October 1998. This rule will provide the ability to merge clean up and closure in some cases.

The RCRA Cleanup Initiative seeks to streamline the corrective action process to conduct faster, more appropriate cleanups, saving resources for industry, the states, and the Agency. The initiative includes a series of guidance during 1999, that establishes the national priorities for EPA. This guidance will allow program implementors to emphasize environmental results, instead of the process, and that in turn will make it possible to apply specialized approaches that can accelerate cleanups. The Agency also believes that guidance will facilitate the communication process between facility owners/operators and regulatory agencies, improving the pace of cleanups. Finally this approach is designed to foster better working relationships that focus on achieving desired results in a cost-effective and expeditious manner.

Beginning in 1999 and continuing through 2000, the Agency will begin implementation of a new national training initiative to train EPA and state regulators on how to use available flexibility and specific tools to improve site-specific implementation of the corrective action program. This effort focuses on key principles and approaches that have accelerated schedules, improved efficiency and results-oriented implementation. In 2000, the Agency will conduct a technical forum comprised of experts in the field of underground hazardous waste migration to discuss remedial approaches, monitoring and site characterization. This project is aimed at improving the Corrective Action Program by engaging stakeholders in theoretical problem solving that will result in working better, smarter, and faster.

Another project designed to highlight results is a pilot program under the Environmental Monitoring for Public Access and Community Tracking (EMPACT). The objective of this project is to use a set of basic scientific measures to summarize the quality of soil, groundwater, and surface water at contaminated sites. This project will demonstrate how well presented measures, can provide the public with a clear understanding of the extent and amount of contamination at specified sites. Initially, a pilot is underway that focuses on the New Jersey/New York City metropolitan area. Over the next few years, the program will be expanded to include contaminated sites across all 10 EPA Regions.

Research

Research under this objective supports the assessment and remediation of sites with contaminated soil and groundwater. Groundwater and soils research seeks to understand the processes that govern contaminant transport and fate and to improve remediation and monitoring technologies, especially their cost-effectiveness. Groundwater discharge can result in widespread sediment contamination, presenting a direct ecological threat to the fauna and the rest of the food chain. Immediate threats to human ingestion may be minimized by the provision of costly alternate water supplies. These do not always eliminate other routes for human exposure (e. g. inhalation via showering) nor is the value of the groundwater resource replaced. Contaminated soils pose chronic and acute health risks to surrounding communities and ecosystems through a number of exposure routes and pathways, and can provide a continuing secondary source of groundwater contamination.

The risk posed by contaminated groundwater and soil is potentially high due to: 1) the large number of sites with known contamination; 2) the technical difficulties of groundwater cleanup; 3) the presence of non-aqueous phase liquids (NAPLS) contamination, toxic contaminants such as heavy metals, persistent bioaccumulative substances (PBS), and volatile organic compounds (VOCs) in the soil and groundwater; 4) the potential of human exposure through multiple routes and pathways even after the provision of alternate water supplies; 5) the fact that ecological impacts, especially as groundwater discharges through sediments into surface water, are poorly understood; and 6) the very high cost of subsurface characterization and remediation. Research will focus on exposure to soil and groundwater contaminants, assessment of the risks posed by these contaminants, cost-effective management of these risks, and the development of innovative technologies to characterize and remediate contaminated sites. Research on Hazardous Substances, Leaking Underground Storage Tank (LUST), and Oil Spills fall within this objective.

Exposure research will be conducted to reduce uncertainties associated with soil/groundwater sampling and analysis and to reduce the time and cost associated with site characterization. In order to achieve this end, methods and instruments will be tested and developed to provide more accurate characterizations of sites. Major research areas include: 1) subsurface characterization of groundwater; 2) sampling methods, sampling designs, and environmental statistics; 3) field analytical methods for characterizing soils and groundwater; and 4) oil and dispersant fate and transport.

Subsurface characterization for groundwater research will involve non-invasive geophysical techniques that can provide methods for subsurface site characterization. Significant effort will be directed toward the development of a unique test facility for evaluating these geophysical technologies under controlled spilled conditions. Improvements in all aspects of soil sampling are being investigated to quantify and reduce/eliminate possible errors that commonly occur during sample collection, handling, preservation, and storage.

Research in the application of advanced instrumentation to soils and groundwater characterization focuses on methods that will provide high-quality data with simple and effective

protocols. Emphasis in 2000 and beyond will be on innovative methods and technologies to evaluate/characterize the natural attenuation of contaminants in groundwater and soils. Oil and dispersant fate and transport research will involve the development of an oil spill model used for the movement of water and crude oil or oil by-products and dispersant in evaluating the impact on near-coastal environments.

In order to estimate human exposure and delivered dose for contaminated soils, EPA will develop approaches (i.e., models, factors) that enable risk assessors to accurately estimate the amount of a contaminant found in the soil matrix. In addition, research will develop methodologies and factors that enable ecological risk assessors to estimate the amount of soil-borne contamination that is toxicologically available. The focus in 2000 will be on developing ecological soil screening values for common soil contaminants.

EPA will also seek to demonstrate more effective and less costly remediation technologies, specifically in the areas of: 1) groundwater (soils and sediments) treatment; and 2) containment. Site treatment research includes bioremediation, abiotic treatment, and natural attenuation (NA). Bioremediation research involves the understanding and application of biological processes to transform contaminants into innocuous products so that they are not biologically available. Field studies on the degradation of polynuclear aromatic hydrocarbons (PAHs) in soils and the subsurface will continue, evaluating several low-cost techniques, as well as treatment trains such as biotreatment and chemical treatment. In 2000, research will include field evaluation of enhanced anaerobic processes to degrade chlorinated solvents and transform metals in groundwater.

Research continues on innovative uses of abiotic treatment technologies to reduce contaminant levels in soil and sediment. In 2000, abiotic treatment research of small pilot-scale tests of multiple dense non-aqueous phase liquid (DNAPL) extraction techniques will be conducted at a site to compare their effectiveness. Work will continue to look at cost-effective surfactant reuse and studies of NA or other secondary treatment of NAPL residuals. Field tests will be conducted of permeable reactive barriers (PRB) applied to mixtures of metals and organics and techniques for deep installation of PRBs.

Natural attenuation (NA) research will focus on organics, metals, and multi-component mixtures of contaminants dissolved in groundwater, soils, and the unsaturated subsurface. Research includes understanding natural degradation and dispersive processes that affect the fate of contaminants and enhancing these processes for treatment, as well as techniques for evaluating the potential for NA and monitoring its progress. In 2000, EPA will conduct a field validation of a draft technical resource document for groundwater.

Containment research seeks to understand and improve the effectiveness of containment systems and developing innovative systems using new materials, including vegetative caps and geosynthetics. The scope of study includes caps, covers, and vertical barriers for the vadose zone, which is the unsaturated level above the groundwater table, as well as fixed barriers and pumping methods for containing contaminated plumes.

The Superfund Innovative Technology and Evaluation (SITE) program promotes innovative technology use to characterize and remediate sites, and evaluates the effectiveness of Federally and privately funded pilot and full scale remediation and characterization options. Building on the strengths of the existing program, such as demonstration design, technology transfer, etc., the SITE program has shifted from a technology-driven focus to a remediation problem focus. Innovative monitoring technology demonstrations will focus on the development of reports for sediment sampling devices. Reports from these and earlier demonstrations will be produced to aid site owners, regulators, and others in making decisions about appropriate site cleanup and characterization technologies.

The SITE program will also initiate evaluations of technologies dealing with the following remediation problems: oxygenate compounds in groundwater, difficult to treat contaminants in groundwater and soils, and pesticides and chlorinated aromatics in soil sediments. In addition, work will be initiated on containment systems.

FY 2000 Change from FY 1999 Enacted

LUST

- (+$373,000, +1.0 workyears). Resources for the LUST Program remediation and assessments on Tribal lands. EPA anticipates this increase will fund approximately 5 additional site assessments, 2 cleanups and staff-time to oversee responsible party-lead and direct federal lead cleanups in Indian Country.

- (-$1,182,300) Resources for the LUST Program State Cooperative Agreements. This resource level will still enable EPA to meet its GPRA target of 21,000 cleanups completed at UST sites where releases have contaminated soil and/or groundwater.

Superfund

- (+$13,864,700). Increases to the Superfund Response program (Remedial Actions $4,652,400; Removals $7,980,800; Site Assessments $1,231,500) reflect the Agency's decision to direct more Superfund resources toward cleaning up sites. These added resources will assist the Agency in accomplishing its targeted GPRA goals for 2000.

- (+$6,306,200). Additional funds were provided to support increased costs associated with the workforce.

- (-$22,438,300). Reduction to Other Federal Agencies largely reflects Congressional Add-ons not sustained in the President's 2000 Request (-$12,000,000 ATSDR and -$11,473,300 NIEHS); however several agencies received additional resources due to a redirection from

the Superfund Response program (NOAA +$550,000; USCG +$335,000; DOI +$100,000; and OSHA +$50,000).

- (-$4,251,600). Reduction of funds from the Superfund enforcement program, due to savings from moving some enforcement work from contractors to Agency staff.

- (-16.0 FTE). The workyears provided by the President's initiative to accelerate clean-up of NPL sites were redirected to support other Agency priorities.

- (-$336,500). Reflects a decrease to Department of Justice for Superfund support.

Brownfields

- ($5,000,000). Supports redirection from Voluntary Cleanup Program funding to site assessment funding. Redirection from the Voluntary Cleanup Program reflects states' reduced funding needs for state infrastructure building and voluntary cleanups. Reflects states' request for increased funding for brownfields targeted site assessments and support of state liaisons with pilot communities.

RCRA

- (+$4,588,100). This increase in RCRA Corrective Action program funds RCRA reinvention efforts to improve the efficiency and effectiveness of the program. This increase will also help to increase the rate of high priority RCRA corrective action facilities with human health risks and ground water releases controlled.

- (-$5,000,000) Due to Congressional Add-ons received during the appropriations process, but not part of the 2000 President's request.

Research

- (+$54,000 and +1.0 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (-$3,217,500 S&T) Funding to support the following 1999 Congressional earmarks will not be continued in 2000:Gulf Coast Hazardous Substance Research Center; The University of New Hampshire Bioremediation of Bedrock Aquifers.

- (-$1,945,300 Superfund) In 2000, funding for Superfund Minority Centers will be reduced, consistent with traditional enacted appropriations levels.

- (-$1,071,200 and 12.4 workyears S&T) This decrease represents resources transferred from contaminated sites research to active waste management facilities research, in Goal 5 Objective 2. In 2000, the Agency will expand its waste management research program and additional HWIR research will be conducted.

- (-$929,400 Superfund) This reduction will result in one less SITE demonstration project and fewer research activities related to subsurface cleanup of groundwater. The development of improved process level models and databases for quantifying pollutant transformation rates and mechanisms in soil, sediment, and aquatic ecosystems will also be phased out.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

RCRA Corrective Action

In 2000 170 (for a cumulative total of 408 or 24%) of high priority RCRA facilities will have human exposures controlled and 170 (for a cumulative total of 289 or 17%) of high priority RCRA facilities will have groundwater releases controlled.

In 1999 83 (for a cumulative total of 238 or 14%) of high priority RCRA facilities will have human exposures controlled and 45 (for a cumulative total of 119 or 7%) will have groundwater releases controlled.

Performance Measures	FY 1999	FY 2000
High priority RCRA facilities with human exposures to toxins controlled.	83 facilities	170 facilities
High priority RCRA facilities with toxic releases to groundwater controlled.	45 facilities	170 facilities

Baseline: EPA established a baseline of 1,700 high priority corrective action facilities in January 1999.

Leaking Underground Storage Tank Cleanups

In 2000 Complete 21,000 Leaking Underground Storage Tank (LUST) Cleanups for a cumulative total of 246,000 cleanups since 1987.

In 1999 Complete 22,000 Leaking Underground Storage Tank (LUST) cleanups.

Performance Measures	FY 1999	FY 2000
LUST cleanups completed.	22,000 cleanups	21,000 cleanups

Baseline: EPA completed a total of 178,297 LUST cleanups through 1997.

Superfund Site Assessments

In 2000 In 2000, EPA and its partners will make final Superfund site assessment decisions on 530 additional sites for a cumulative total of 35,968.

In 1999 In 1999, EPA and its partners will make final Superfund site assessment decisions on 530 additional sites for a cumulative total of 35,438.

Performance Measures	FY 1999	FY 2000
Site assessment decisions.	530 decisions	530 decisions

Baseline: EPA completed total of 34,427 site assessments from 1982 through 1997.

Superfund Removal Response Actions

In 2000 Conduct 300 Superfund removal response actions for a cumulative total of 6,100 removal response actions since 1982.

In 1999 Conduct 300 Superfund removal response actions (for a cumulative total of 5,800 Superfund removal response actions).

Performance Measures	FY 1999	FY 2000
Removal response actions.	300 responses	300 responses

Baseline: EPA completed total of 5,079 removal response actions from 1982 through 1997.

Superfund Cleanups

In 2000 EPA will complete 85 Superfund cleanups (construction completions), continuing on a path to reach 925 completed cleanups by the end of 2002.

In 1999 EPA and its partners will maintain the pace of cleanups by completing construction at 85 additional Superfund sites (for a cumulative total of 670 construction completions with a target of 925 construction completions in 2002).

Performance Measures	FY 1999	FY 2000
Construction completions.	85 completions	85 completions

Baseline: EPA completed a total of 585 construction completions from 1982 through 1998.

Superfund Cost Recovery

In 2000 Ensure trust fund stewardship by recovering costs from PRPs when EPA expends trust fund monies. Address cost recovery at all NPL and non-NPL sites w/ a statute of limitations on total past costs equal to or greater than $200,000.

In 1999 Address cost recovery at all National Priority List (NPL) and non-NPL sites with a statute of limitations on total past costs equal to or greater than $200,000.

In 1999 Ensure trust fund stewardship by recovering costs from PRPs when EPA expends trust fund monies.

Performance Measures	**FY 1999**	**FY 2000**
Address Cost Recovery at all NPL & Non-NPL sites w/tot. past costs = or > $200K	100 Percent	100 Percent

Baseline: In FY98 the Agency will have addressed 100% of Cost Recovery at all NPL & Non-NPL sites with total past costs equal or greater than $200,000.

Superfund Potentially Responsible Party Participation

In 2000 Maximize all aspects of PRP partic., including 70% of the work conducted on new construction starts at non-Fed Fac sites on the NPL, and emphasize fairness in the settlement process. Result is timely and protective clean up of the Nation's worst contam. sites and other sign. threats to pub. health

In 1999 Obtain PRP commitments for 70% of the work conducted at new construction starts at non-Federal facility sites on the NPL and emphasize fairness in the settlement process.

Performance Measures	**FY 1999**	**FY 2000**
Section 106 Civil Actions	38 Agreements	
De Minimis Settlements	23 Settlements	20 Settlements
Remedial Admin. Orders	19 Orders	
Administrative and judicial actions		100 actions
Orphan Share Offers at all eligible work settlement negotiations much obliged	100% Settlements	30 Settlements

Baseline: In FY97 approximately 70% of new remedial work at NPL sites (excluding Federal facilities) was initiated by private parties.

Superfund Prospective Purchaser Agreements

In 2000 Continue to make formerly contaminated parcels of land available for residential, commercial, and industrial reuse by addressing liability concerns through the issuance of comfort letters and prospective purchaser agreements.

In 1999 Continue to make formerly contaminated parcels of land available for residential, commercial, and industrial reuse by addressing liability concerns through the issuance of comfort letters and prospective purchaser agreements.

Performance Measures	FY 1999	FY 2000
Eval. liability concerns - Prospective Purchaser Agreement requests assessed	100 Percent	100 Percent

Baseline: No Performance Baseline Information is available.

Superfund Federal Facilities Compliance

In 2000 Ensure compliance with Federal facility statutes and CERCLA Agreements and ensure completion of current NPL CERCLA IAGs.

Performance Measures	FY 1999	FY 2000
Fed. Facilities CERCLA Negotiations		4 Negotiations
Fed. Facilities Current NPL IAGs		6 NPL IAGs

Baseline: No Performance Baseline Information is available.

Brownfields Site Assessment Grants

In 2000 EPA will fund Brownfields site assessments in 50 more communities, thus reaching 350 communities by the end of 2000.

In 1999 EPA will fund Brownfields site assessments in 100 more communities, thus reaching 300 communities by the end of 1999.

Performance Measures	FY 1999	FY 2000
Cooperative agreements for site assessment.	100 agreements	50 agreements

Baseline: EPA signed a cumulative of 227 agreements for site assessments in 1998.

Brownfields Supplemental Site Assessments, Revolving Loan Funds, Showcase Communities, and Job Training Pilots

In 2000 Sign agreements for 50 supplemental brownfields site assessments, sign agreements with 70 communities to capitalize revolving loan funds, and support 16 existing brownfields showcase communities and 10 job training pilots.

In 1999 Support 16 showcase communities, and sign agreements with 63 communities to capitalize revolving loan funds.

Performance Measures	FY 1999	FY 2000
Showcase communities.	16 communities	16 communities

Cooperative agreements to capitalize revolving loan funds.	63 agreements	70 agreements
Job training pilots.		10 pilots
Supplemental site assessment agreements.		50 agreements

Baseline: EPA signed 23 agreements for capitalization of revolving loan funds in 1997. 16 showcase communities were announced in 1998.

Research

Scientifically Defensible Decisions for Site Cleanup

In 2000 Enhance scientifically-defensible decisions for site cleanup (cu) by providing targeted research & tech. support.

In 2005 Develop and Evaluate Risk Management Options for Remediation of Sites, including Brownfields, Contaminated by Metals, PAHs, NAPLs and Chlorinated Solvents

In 2002 Evaluate Applicability of Natural Attenuation and Risk-based Management Goals to Clean up of Contaminated Sites

In 2001 Demonstrate and verify the performance of 18 innovative technologies by 2001, emphasizing remediation and characterization of groundwater and soils.

In 1999 Develop Risk Assessment Methods, Models, Factors and Databases that Describe Key Exposure Parameters Human Activity patterns, and Dose-response Toxicity Relationships

Performance Measures	**FY 1999**	**FY 2000**
Environmental Research Brief on permeable reactive barrier of ground water contaminated with chromium and chlorinated solvents	30-SEP-1999	
Using data from the Exposure Factors Handbook, develop peer-reviewed statistical distributions for selected exposure factors.	30-SEP-1999	
Final report and draft journal article comparing the most common analytical methods for VOC in soils will allow waste site mgrs. to select the most appr. methods to char. contamination at waste sites.		09/30/2000 report
Technical Resource Document for Monitored Natural Attenuation in Sediments		1 document
Summary Report of Case Studies of Natural Attenuation of MTBE, a fuel additive, at Geographically Diverse Locations		1 report
Progress report on Field Demonstration of Chemically-Enhanced Subsurface Dense, Non-Aqueous Phase Liquid Extraction Technologies		09/30/2000 report

Superfund Innovative Technology Evaluation (SITE) Program Report to Congress.	1 report
A report summarizing the key research findings methods, models, and factors relating to evaluating the risks from the dermal route of exposure.	1 report
Develop eco-toxicity soil screening values for the 20 most common Superfund soil contaminants for plants, invertebrate microbes, birds, and mammals.	09/30/2000 values
Delivery of the Annual SITE Program Report to Congress	30-SEP-1999

Baseline: EPA research will focus on the need to: improve characterization of contamination by VOCs and NAPLs; improve risk assessments for the dermal route of exposure and for ecological receptors; and improve and evaluate, including via SITE demonstrations, cleanup and natural attenuation processes. In addition, the SITE report to Congress will document the completion of the required six field evaluation projects and the maintenance of a 60 percent or greater technology deployment rate.

Verification and Validation of Performance Measures

The Office of Underground Storage Tanks (OUST) uses the following processes to verify and validate the performance measures data.

Designated State agencies submit semi-annual progress reports to the EPA regional offices, who review, verify and then forward the data to the OUST Headquarters. OUST Headquarters staff examine the data and resolve any discrepancies with the regional offices. The data are displayed on a region by region basis, which allows regional staff to verify their data. OUST does not maintain a national database.

The performance results are also used in OUST's Regional Strategic Overview (RSO) Process to assess the status of State progress in implementing the program. This process is based on strategic discussions that the program has with the states, regarding how to continue to improve states' performance. In the mid-year and end of year state evaluations, the Program discusses with states their efforts to update and validate their data, and to make continual improvements in their performance. EPA relies on its state partners to provide our measurement data which have been used by the UST/LUST program for 10 years.

CERCLIS is the official database used by the Agency to help track and store Superfund national site information. The Agency is taking steps to ensure that all Superfund accountability data are rigorously validated. The database is used to track, store, and report national accomplishment information. It has defined the various roles and responsibilities of key individuals who are responsible for development, operation and maintenance of CERCLIS. The headquarters sponsor of the data is responsible for (1) identifying the data elements needed, (2) defining the data elements, and (3) informing the appropriate people that the information needs to be collected and loaded into CERCLIS. The regional person who owns and enters the data (e.g., Superfund remedial project

manager) is responsible for reviewing, verifying, and validating site data in CERCLIS. The Information Management Center (IMC), under the EPA's Office of Emergency and Remedial Response (OERR), responsibility is to ensure: (1) there is a data element with an accurate definition for all data; (2) the data element is accessible to searches and can be retrieved for reports; (3) the source for the data is referenced in the system; (4) the data is accurately entered or converted into the system; (5) data from other sources is considered draft until it has been checked against its source data, and is found acceptable; and (6) data integrity is maintained in all system applications and reports.

To assure data accuracy and control, the following administrative controls are in place: (1) Superfund/Oil Implementation Manual (SPIM) -- This is the program management manual which details what data must be reported; (2) Report Specifications -- Report specifications are published for each report detailing how reported data are calculated; (3) Coding Guide -- It contains technical instructions to data users such as *regional IMCs,* program personnel, report owners and data input personnel; (4) Quality Assurance (QA) Unit Testing --Unit testing is an extensive QA check made by the report programmer to assure that its product is producing accurate data that conforms to the current specification; (5) QA Third Party Testing -- Third party testing is an extensive test made by an independent QA tester to assure that the report produces data in conformance with the report specifications; (6) Regional CERCLIS Data Entry Internal Control Plan -- The data entry internal control plan includes: (a) regional policies and procedures for entering data into CERCLIS; (b) a review process to ensure that all Superfund accomplishments are supported by source documentation; (c) delegation of authorities for approval of data input into CERCLIS; and (d) procedures to ensure that reported accomplishments meet accomplishment definitions ; and (7) a historial lockout feature has been added to CERCLIS so that changes in past fiscal year data: (a) can only be changed by approved and designated personnel, and (b) are logged to a change-log report.

Two audits, one by the Office Inspector General (OIG) and the other by Government Accounting Office (GAO), were done to assess the validity of the data in CERCLIS. The OIG audit report "Superfund Construction Completion reporting", No. E1SGF7-05-0102- 8100030, was performed to verify the accuracy of the information that the Agency was providing to Congress and the public regarding the construction completion statistic. The OIG concluded that the Agency "has good management controls to ensure the accuracy of the information that is reported," and "Congress and the public can rely upon the information EPA provides regarding construction completions." The GAO's report "Superfund: Information on the Status of Sites", GAO/RCED-98-241, also sought to review the accuracy of the information in CERCLIS on sites' cleanup progress. GAO tested the accuracy of data in the CERCLIS system for a random sample of NPL sites. On the basis of GAO's sample results, GAO "estimates that the cleanup status of NPL sites reported by the Superfund database is accurate for 95% of the sites."

In 2000, the Agency will continue its efforts begun in 1999 to improve the Superfund program's technical information by incorporating more site remedy selection, risk, removal response, and community involvement information in CERCLIS. Also, it will continue its efforts to share information among the Federal, state and tribal programs. The additional information will further

enhance the Agency's efforts to efficiently identify, evaluate and remediate Superfund hazardous waste sites.

RCRA data verification procedures ensure that the data collected at the field or facility level are not corrupted or confused before they are presented, aggregated, and analyzed at the Federal level. Environmental monitoring data will meet standard Quality Assurance/Quality Control (QA/QC) procedures for the RCRA program, as documented in the Office of Solid Waste Quality Assurance Management Plan and the Guidebook for QA/QC Procedure for Submission of Data for the LDR Program. These procedures, in part, define requirements for sampling and analysis to assure data quality. Another common method of verification involves examination of data collected and evaluating the relationship of those data to other data collected under similar circumstances.

The Resource Conservation Recovery Information System (RCRIS) is the national database which supports EPA's RCRA program. RCRIS contains information on entities (generically referred to as "handlers") engaged in hazardous waste generation and management activities regulated under the portion of RCRA that provides for regulation of hazardous waste. RCRIS has several different modules, including a Corrective Action Module which tracks the status of facilities requiring correction action and also the two environmental indicators related to corrective action. In 1999, the Agency will have finalized its baseline and development of its national guidance for evaluating and documenting environmental indicators. The Corrective Action Program is also considering Headquarters include spot checks of Regional and State EI determinations during the annual Beginning of the Year process.

While some problems in the accuracy of RCRIS data have been found in the past, significant improvements in quality have been made over the last two years. The importance of RCRIS data has been recognized, and the quality of RCRIS data has improved, due to the Headquarters office pulling and using the RCRIS data in reports that are issued to the Regions and states. Charts illustrating the comparative progress between Regions, and between states within each Region, have been constructed and shared with the Regions and states. These charts will be placed on a web site, that will be available to the public, in the near future.

RCRIS controls include maintaining a high degree of consistency in data elements over time as well as data screen edits to help ensure that key data is entered for all facilities. States and Regions, who create the databases, manage data quality control. RCRIS has a suite of user and system documentation which describes the overall administration of the data collection and management activities. Training on use of the systems is provided on a regular basis, usually annually depending on the nature of system changes and user needs.

The RCRA program is currently evaluating its future information management needs and systems through a joint initiative with the states called WIN/Informed. This project covers the activities and information currently supported by both the RCRIS and BRS data systems. Analysis under WIN/Informed includes the identification of the data elements needed to support the implementation and management of the RCRA program; development of common, agreed upon

national definitions; identification of programmatic process improvements; and tracking burden reduction. The design and construction of new systems will be based on the results of each area of analysis, and will be flexible to accommodate future needs. The WIN/Informed project is scheduled to be completed by the end of the calendar year 2002.

In order to validate the Brownfields performance measure data, the Outreach and Special Projects Staff utilize data input and verification of the Brownfields Management System (BMS) and the CERCLIS 3 system. The BMS is used to evaluate management, environmental, and economically-related results such as jobs generated and acres assessed and cleaned up. BMS uses data gathered from Brownfield pilots' quarterly reports and from the Regions. The CERCLIS 3 system records Regional accomplishments on Brownfields Assessments. Verification relies on reviews by Regional staff responsible for pilot cooperative agreements or Brownfields cooperative agreements and contracts.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution

control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

State LUST programs are key to achieving the objectives and long-term strategic goal. EPA relies on states agencies to implement the LUST program, including overseeing cleanups by responsible parties and responding to emergency LUST releases. LUST Cooperative Agreements are made directly to the states to assist them in implementing their oversight and programmatic role.

The Superfund response/cleanup program coordinates with many other Federal and state agencies in accomplishing its mission. Many of these agencies perform essential services in areas where the Agency does not possess the specialized expertise. Currently, the Agency has active interagency agreements with the Agency for Toxic Substances and Disease Registry, the National Institute for Environmental Health Services, the Department of Interior, the Department of Justice, the National Oceanic and Atmospheric Administration, the Federal Emergency Management Agency, the Occupational Safety and Health Administration, and the United States Coast Guard.

The services these agencies provide include conducting public health assessments at Superfund sites, maintaining toxicology databases for chemicals found at Superfund sites, providing health education to health care providers, local and national health organizations and state and local health departments; funding to colleges and universities for basic research which focuses on assessing the impacts of chemical mixtures on humans; supporting response preparedness and management activities to the National Response Team, Regional Response Teams, On-Scene

Coordinators and Remedial Project Managers, outreach to states, Indian tribes and Federal natural resource trustee officials on natural resource damage assessments; providing scientific support for response operations through Coastal Resource Coordinators in EPA's coastal Regional offices and coordination between Federal and state natural resource trustee agencies; supporting the Superfund program in the management and coordination of training programs for local officials through the Emergency Management Institute and the National Fire Academy, and supporting the National Response System by providing expertise in emergency preparedness and administrative support to the Regional Response Teams and National Response Team; conducting compliance assistance visits to review site safety and health plans and programs and developing guidelines and procedures in the composition of manuals for assessing safety and health at hazardous waste sites; responding to actual or potential releases of hazardous substances involving the coastal zone, including the Great Lakes and designated inland river ports; and litigating and settling cleanup agreements and cost recovery cases and seeking civil penalties.

The United States Army Corp of Engineers and the Bureau of Reclamation provide management and support for design and construction management at Superfund sites which contribute to the direct cleanup at many sites. These Federal partners implement most high-cost Fund-financed remedial actions, provide on-site technical expertise, and ensure that project management is consistent between Fund and PRP financed projects.

The Agency also works in partnership with states and tribal governments to strengthen state and tribal hazardous waste programs and improve the efficiency and effectiveness of the nation's overall hazardous waste response capability. EPA assists the states in developing their CERCLA implementation programs through infrastructure support, financial and technical assistance , and training. Partnerships with states increase the number os site cleanups, improve the timeliness of responses, and make land available for economic redevelopment sooner, while allowing for more direct local involvement in the cleanup process. EPA is working to enhance the role of states and tribes in the implementation of the Superfund program by encouraging their participation in all aspects of the Federal Superfund program, from site assessment through remedial design and construction. Twenty pilot projects are underway to enhance the role of states and tribes in Superfund.

Executive Order 12580 delegates certain authorities for implementing Superfund to other Federal agencies. These responsibilities are carried out in close consultation and coordination with EPA. EPA works with these agencies to ensure compliance with environmental laws and regulations, and in partnership with the states to provide effective and efficient oversight of Federal cleanup programs. EPA also provides technical and program assistance, training and outreach for Federal facilities; works with other state and tribal regulators and Federal agencies to develop cleanup priorities and milestones; facilitates appropriate transfer and leasing of excess Federal properties; and works with tribal nations to enhance their technical capabilities.

The Agency maintains a close relationship with state agencies that are authorized to implement the RCRA Corrective Action program. States are required to achieve the same level of

Federal standards as the Agency, including the annual performance goals of human exposures and groundwater releases controlled. As part of the state grant process, Regional Offices negotiate with the state agencies annualized goals that the state agencies should achieve with the grant funds. Examples of items that Regional Offices may negotiate with state agencies include the number of facilities that are investigated, studied, stabilized, or have corrective action measures initiated. The Agency will continue our partnership effort with states by sponsoring a national program meeting to discuss a variety of corrective action and other RCRA topics. The agency will continue to provide state agencies with guidance on implementing the corrective action program. Also the Agency will develop Brownfield guidance that will facilitate redevelopment efforts at RCRA sites.

The Brownfields National Partnership represents a significant investment in brownfields communities including more than 100 commitments from more than 20 Federal agencies. Federal resources include additional brownfields pilots from EPA; redevelopment funds from the Department of Housing and Urban Development and the Economic Development Agency; and job training efforts from the Department of Labor, the Department of Health and Human Services, the Department of Education, and the Veterans Agency. These funds will help cleanup and redevelop nearly 5,000 properties.

The centerpiece of the Brownfields National Partnership is the funding of 16 Brownfields Showcase Communities. EPA and other Federal agencies provide active support to brownfields activities across the country. The Agency's commitment to the project is awarding additional assessment and demonstration pilots and funding Intergovernmental Personnel Act (IPA) staff in each of the 16 communities. In addition, 24 community finalists received funding and technical support from the Agency.

The Brownfields program also relies on partnership building with local government, State, and non-government groups to leverage Federal funding with private sector funding. As part of the brownfields initiative, EPA will continue to provide outreach, curriculum development, job training, and technical assistance to community residents through cooperative agreements to community-based organizations, community colleges, universities, and private sector non-profit groups. The Agency also works with cities, states, Federally recognized Indian Tribes, community representatives, and other stakeholders to implement the many commitments. Successful brownfields redevelopment is proof that economic development and environmental protection go hand in hand.

The Brownfields program has demonstrated that cleaning up abandoned or under-used contaminated land can have significant payoffs. Building on the pilot program, EPA will continue to partner with other Federal, state, local, and private sector efforts to restore contaminated property to economic reuse. The Agency will also provide information and tools and develop model practices and policies to be used by local governments, developers, and transportation officials in their pursuit to redevelop brownfield properties.

EPA coordinated the 2000-2005 BRAC workload projections with the Department of Defense, Office of the Secretary of Defense (for Environmental Security); and each of the environmental program directorates in the Air Force, Army and Navy. Workload discussions were held in January-February 1998 to access outyear requirements and closing and realigning military installations included under the BRAC account. A letter of projected need was sent to the Office of Secretary of Defense for Environmental Security in May 1998 declaring EPA's FY 2000 needs, a letter of general approval was received from DoD by in July, 1998 for FY 2000 and beyond. EPA and DoD continually evaluate workyear needs and requirements, from budget formulation through development of operating year plans.

Research

The Agency spends substantial effort in coordinating with other agencies to conduct risk management and exposure research. These activities include work with the Department of Defense (DOD) in their Strategic Environmental Research and Development Program (SERDP) and the Environmental Security Technology Certification Program (ESTCP) programs, as well as sediments activity with the Waterways Experiment Station (WES). Other groups include the Department of Energy (DOE) and the Office of Science and Technology and the Integrated Treatment Remediation Demonstration (ITRD) Program. Collaborative field and laboratory research with DoD, DOE, and DOI to improve characterization and risk management options for dealing with subsurface contamination is also conducted. Collaboration with external organization allows the Agency the needed flexibility in dealing with complex waste/site characterization and remediation problems.

The Agency works with The National Institute of Environmental Health Sciences (NIEHS) to advance fundamental Superfund research. NIEHS manages a large basic research program directed at Superfund issues. The program is mandated in CERCLA (Section 209), which establishes a "basic university research and education program" in NIEHS, and further reinforced in Superfund Amendments and Reauthorization Act (SARA) (Title III, Section 311), where the intent of Congress is clarified, indicating that the program "may include" the following: epidemiologic and ecologic studies, advanced techniques for detection, assessment and evaluation of effects on human health of hazardous substances; methods to assess the risk to human health presented by hazardous substances; and methods and technologies to detect hazardous substances in the environment and basic biological, chemical, and physical methods to reduce the amount and toxicity of hazardous substances.

Statutory Authorities

- Solid Waste Disposal Act as amended by Hazardous and Solid Waste Amendments of 1984 to the Resource Conservation and Recovery Act of 1976

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986

- Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)
- Oil Pollution Act 33 U.S.C.A.
- Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act (Public Law 102-579 as amended by Public Law 104-201) 40 CFR 194: Criteria for the Certification and Recertification of the WIPP's Compliance with the Disposal Regulations (1996): Certification Decision (1998).
- Energy Policy Act of 1992, Public Law 102-486 and Administrative Procedures Act, 5 U.S.C. 551-559, 701-706.
- Atomic Energy Act of 1954, as amended, 42 USC 2011 et seq. (1970) and Reorganization Plan No. 3 of 1970
- Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 (an amendment to the Atomic Energy Act), 42 USC 7901 et seq (1978)
- Safe Drinking Water Act of 1974: National Primary Interim Drinking Water Regulations (1976), MCL
- The Defense Base Closure and Realignment Act of 1990, Section 2905 (a) (1) (E) (10 U.S.C. 2687 Note).

Environmental Protection Agency

2000 Annual Performance Plan and Congressional Justification

Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response

Objective # 2: Prevent , Reduce and Respond to Releases, Spills, Accidents or Emergencies

By 2005, over 282,000 facilities will be managed according to the practices that prevent releases to the environment, and EPA and its partners will have the capabilities to successfully respond to all known emergencies to reduce the risk to human health and the environment.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Prevent , Reduce and Respond to Releases, Spills, Accidents or Emergencies	**$180,814.4**	**$164,772.4**	**$179,585.4**	**$14,813.0**
Environmental Program & Management	$111,190.9	$93,966.8	$106,110.4	$12,143.6
Science & Technology	$9,229.4	$8,797.6	$9,449.0	$651.4
State and Tribal Assistance Grants	$36,126.6	$38,038.4	$39,438.4	$1,400.0
Oil Spill Response	$15,818.2	$13,496.9	$14,114.9	$618.0
Hazardous Substance Superfund	$8,449.3	$10,472.7	$10,472.7	$0.0
Total Workyears:	869.1	861.4	888.7	27.3

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
RCRA Permitting	$17,384.4	$15,388.6	$16,773.0
RCRA State Grants	$25,581.9	$27,493.7	$27,493.7

Waste Combustion	$8,002.6	$7,346.7	$7,297.7
Accident Safety/Prevention	$1,010.0	$0.0	$0.0
Risk Management Plans	$11,870.9	$7,258.3	$11,804.6
Federal Preparedness	$8,036.8	$9,560.2	$9,560.2
Community Right to Know (Title III)	$5,351.0	$4,683.5	$5,099.4
Underground Storage Tanks (UST)	$6,701.3	$6,077.9	$6,345.3
UST State Grants	$10,544.7	$10,544.7	$11,944.7
Oil Spills Preparedness, Prevention and Response	$14,183.1	$11,988.0	$12,437.5
Hazardous Waste Research	$7,051.1	$6,619.3	$7,249.6
Project XL	$110.3	$112.6	$114.3
Common Sense Initiative	$0.0	$130.0	$95.5
Civil Enforcement	$1,270.7	$1,234.0	$1,334.7
Compliance Assistance and Centers	$0.0	$274.8	$342.7

FY 2000 Request

Underground Storage Tank Program

This objective includes $6,345,300 in the EPM account and $11,944,700 in the STAG account for the Underground Storage Tank (UST) program. The goal of this program is to prevent, detect, and correct leaks from USTs containing petroleum and hazardous substances. The objectives are to stimulate development and implementation of a comprehensive regulatory program with standards at the state and local level that are at least as stringent as the Federal standards; to improve implementation and enforcement performance; and to provide ongoing technical information, assistance, research and training. These objectives directly support the Agency's guiding principle of promoting partnerships by building strong regional, state, local and tribal UST programs.

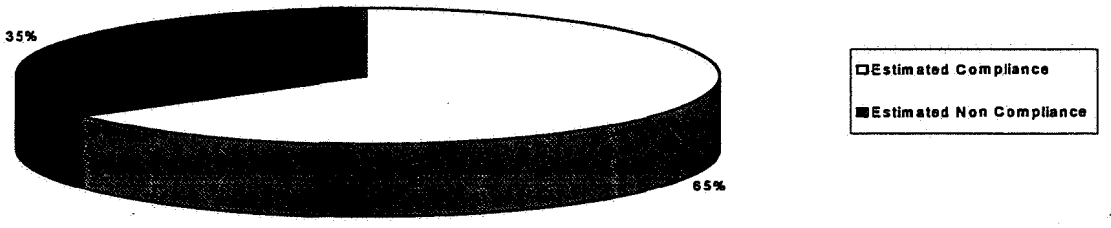
States have the primary responsibility for ensuring that UST facilities (except those on Indian lands) are brought into compliance. EPA's primary role is to provide technical and financial support to State UST programs. Over the next several years, the Agency's highest priorities are to promote and enforce compliance with regulatory requirements aimed at preventing and detecting UST releases and to approve additional States to operate their own UST/LUST programs in lieu of the federal program. As of September, 1998, 26 States, the District of Columbia, and Puerto Rico have State program approval. EPA anticipates that by 2000, 30 states will have obtained program approval.

By promoting and enforcing UST compliance, EPA expects the number of USTs in compliance to increase. Consequently, the Agency will focus on providing technical and financial support to State UST programs to help them promote regulatory compliance. Financial support will be provided through UST State grants. EPA and States will work together to promote and enforce compliance with the 1998 deadline. EPA funding will support state UST inspections and enforcement by providing technical materials and training programs to help State inspectors assess compliance with requirements for leak detection, corrosion protection, spill containment, and overfill prevention. EPA funding will also support state-EPA assessments of the validity of third-party evaluations of leak detection methods and state development and start-up of third party service provider programs to inspect tanks on states' behalf. EPA will also assist states in overcoming barriers to EPA approval of State programs and in developing formal applications for EPA approval.

EPA has the primary responsibility for implementation of the UST program on Indian lands. This responsibility requires EPA Regional Offices to educate owners and operators about the UST requirements, conduct inspection and enforcement activities, and maintain a database of information on USTs located on Indian lands. Demonstration grants under RCRA Section 8001, as well as non-demonstration grants under RCRA Section 2007, will continue to help Tribes develop the capability to administer UST programs.

December 1998 was the regulatory deadline for upgrading, replacing, or closing USTs that are not protected against corrosion, spills, and overfills. The Agency estimates that approximately 65% or more of USTs were in compliance by December 1998, and that by 2000, approximately 90% of USTs will be in compliance with the December 1998 requirements. By 2005, EPA anticipates that approximately 99% of USTs -- encompassing virtually all remaining USTs regulated under RCRA Subtitle I -- will be in compliance with the December 1998 requirements. In 2000, the Agency will begin an evaluation of EPA's technical requirements for UST systems to understand how well they are working and how they might be further improved.

ESTIMATED COMPLIANCE RATE WITH 1998 REGULATORY REQUIREMENTS FOR UPGRADING, REPLACING OR CLOSING UNDERGROUND STORAGE TANKS (as of December 1998)



Chemical Emergency Preparedness and Prevention

This objective also includes $16,904,000 in the EPM account for Chemical Emergency Preparedness and Prevention. Chemical safety is vitally important to all Americans. Every day, incidents involving hazardous materials threaten the health and safety of people in states, cities, and towns across the country. From 1995 to 1997 EPA recorded 16,000 releases of hazardous substances resulting in 53 deaths and 2,258 injuries. A 1996 analysis estimated that more than 400 releases of extremely toxic and flammable chemicals resulted in two dozen fatalities, 1,000 injuries, thousands of evacuations, and more than $1 billion in damages. Manufacturers produce these chemicals in communities and they transport them through cities and towns in rail cars, trucks, and pipelines.

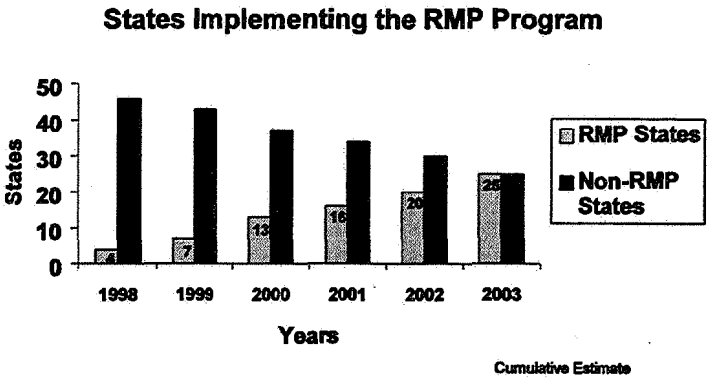
In 2000, federal, state, and local agencies, as well as the public, will have unprecedented access to information on the presence of chemicals in every community and the potential hazards those chemicals present. Section 112(r) of the Clean Air Act (CAA) requires some 66,000 facilities to develop comprehensive Risk Management Plans (RMPs) and submit these plans to EPA, state agencies, and Local Emergency Planning Committees (LEPCs).

Each RMP will identify and assess the hazards posed by on-site chemicals, provide a five-year facility accident history, and outline an accident prevention program and an emergency response plan. However, only about half of those facilities required to submit RMPs are expected to do so by the statutory deadline of June 1999. Many facilities which fail to meet that deadline will be small businesses. A program priority during 2000 will be to increase compliance with the RMP reporting requirement to the point that 75 percent of those facilities required to report will have done so by the end of the year. This will be done by providing technical assistance, outreach, and training to those facilities that are unable to meet the June 1999 deadline.

EPA will continue to place as a high priority in 2000 the delegation of authority to implement and manage the RMP program to more states. Individual states are best suited to implement the program because they are closer to the facilities that must report and they know the communities that are at risk. They also have an important stake in preventing accidents that would endanger their citizens and damage their economy. EPA's strategy is to emphasize flexibility in how states are authorized to receive delegation and to provide a combination of grant assistance, technical support, training, and other outreach services to help them enact necessary laws, establish funding, and develop the capabilities needed to review and audit RMPs. EPA's goal is to delegate the RMP program authority to 13 states by the end of 2000. This milestone marks the halfway point toward our goal of having 25 states manage RMP programs by the end of 2003.

The CAA mandates an RMP program for every state. In those states that have not yet accepted delegation, EPA Regional offices will manage their RMP programs, per the Clean Air Act. A major activity of EPA Regions and states with delegated authority during 2000 will be to ensure the effectiveness of the program through an audit process. Depending upon the threat posed by a facility, auditors may elect to conduct an in-house technical review of the select RMPs to check for completeness, verify accuracy of selected RMPs in on-site visits, or conduct comprehensive on-site

RMP audits to determine the appropriateness and quality of the risk management program. While implementing an audit program is mandated under the law, it is also essential to ensuring that more facilities conduct their operations in a safe and responsible manner. EPA's goal in the year 2000 is to complete audits for 300 RMP-covered facilities. This is about one percent of the facilities expected to comply with the June 1999 deadline. In 2000, the Agency requests $11,804,600 for activities within the RMP program.



A vital role of EPA is to help communities carry out their role in implementing accident prevention programs. Local Emergency Planning Committees (LEPCs - which were established under the Emergency Planning and Community Right to Know Act (EPCRA)) serve as the focal point for discussions on reducing chemical risks at the local level. Under the RMP program, LEPCs take information on how facilities are reducing the risk of accidents and integrate it into their emergency plans and community right-to-know programs. In 2000, EPA will support LEPC efforts by providing tools, technical assistance and guidance to better enable them to use the risk information. The Agency will also continue an initiative begun in 1999 to improve and enhance emergency preparedness and prevention in Tribal communities. The Agency requests $5,099,400 for preparedness and prevention activities under the EPCRA program.

Funding of the independent Chemical Safety Board (CSB) has placed new responsibilities on the Agency with regard to chemical safety and accident prevention. The same Clean Air Act provisions that established the CSB authorize EPA to respond to the Board's recommendations and provide support for its activities. The Agency is authorized to conduct activities in three areas: 1) responding to Board recommendations that result from investigations. EPA anticipates that each CSB investigation will lead to several recommendations which may require program adjustments and modifications; 2) gathering information at the site of accidental releases to understand the source and nature of the release and to support decision-making on CSB recommendations; and 3) taking prevention actions and providing outreach to industry, government and the public to enhance application of chemical safety measures. EPA expects to complete a memorandum of understanding with the Board in 1999 that will clarify our roles and working relationship.

Oil Program

This objective includes $12,437,500 for Oil Spill Response, Prevention, and Preparedness. The goal of the Oil Program, which is authorized by the Clean Water Act (CWA) and has been in effect for over twenty years, is to protect public health and the environment from hazards associated with a discharge or substantial threat of a discharge of oil or hazardous substances into navigable waters, adjoining shorelines, and exclusive economic zones of the United States. The program was strengthened by the Oil Pollution Act of 1990 (OPA) which was passed in response to increasing frequency and severity of accidental oil discharges into the environment, such as the Ashland Tank Collapse and the Exxon-Valdez spill. Each year more than 20,000 oil spills occur, well over half of them within the inland zone over which EPA has jurisdiction. On average, one spill of greater than 100,000 gallons occurs every month from a total of 450,000 regulated oil storage facilities and the entire transportation network. Oil spills contaminate drinking water supplies; cause fires and explosions; kill fish, birds, and other wildlife; destroy habitats and ecosystems; and impact the food chain. There are also serious economic consequences of oil spills because of their impact on commercial and recreational uses of water resources.

The Oil Spill Program uses its resources to implement a comprehensive approach to integrate prevention, preparedness, and response as mandated and authorized in the Clean Water Act, Section 311, and the Oil Pollution Act (OPA) of 1990. Under the CWA and OPA, EPA protects inland waterways through oil spill prevention, preparedness, response, and enforcement activities associated with non-transportation-related oil storage facilities. These facilities, which range from hospitals and apartment complexes storing heating oil to large tank farms, include any oil storage facility with a single aboveground storage tank larger than 660 gallons, total aboveground storage capacity greater than 1,320 gallons, or underground storage greater than 42,000 gallons.

The Oil Program establishes requirements to prevent and prepare for spills at oil storage facilities subject to its regulations, and respond to all spills to inland waterways. EPA's regulatory framework includes the Oil and Hazardous Substances National Contingency Plan (NCP) (40 CFR Part 300), the Oil Pollution Prevention regulation or Spill Prevention, Control and Countermeasure (SPCC) regulation, (40 CFR Part 112), and the Facility Response Plan (FRP) regulation.

All regulated oil storage facilities must prepare SPCC plans. In 2000, 360 additional facilities will be in compliance with SPCC provisions. In addition, certain high-risk oil storage facilities must prepare FRPs to identify and ensure the availability of resources to respond to a worst case discharge, establish communications, identify an individual with authority to implement removal actions, and describe training and testing drills at the facility. In the event of a spill, the NCP is the Nation's blueprint for the Federal response to releases of oil and hazardous substances. In 1999 and 2000, EPA will review only a small number of FRPs triggered by any large at spill, or a spill a particularly high risk facility that warrants attention.

The OPA also requires area committees (comprised of state, local and Federal officials) to develop Area Contingency Plans (ACPs). These plans detail the responsibilities of those parties involved in planning the response process, describe unique geographical features of the area covered,

and identify available response equipment and its location. In 2000, 360 additional facilities will be in compliance with SPCC provisions.

Current Oil Program prevention efforts focus on continued implementation of SPCC regulations. Preparedness efforts focus on periodic review of FRPs and on development of ACPs. Response efforts include monitoring or responding to all spills within the inland waterways. Over the past three years (1996-1998), EPA has received and evaluated approximately 35,000 oil spill notifications, served as lead responders at approximately 275 oil spills, and shared response responsibility with another party at approximately 475 responses.

Resource Conservation and Recovery Program

This objective also includes $71,294,000 in the EPM account and $27,493,700 in the STAG account to implement the Resource Conservation and Recovery Act (RCRA). The Agency's RCRA program accounts for about 13,900 of the facilities addressed by this objective. The RCRA program reduces the risk of human exposures to hazardous, industrial non-hazardous, and municipal solid wastes. Every year, municipalities and industries generate approximately 208 million tons of municipal solid waste, 270 million tons of industrial hazardous waste (including waste waters), and more than 7.6 billion tons of industrial non-hazardous waste. A combination of regulations, permits and voluntary standards and programs ensure safe management of the various wastes. Without the RCRA program, new Superfund sites will result from mismanagement of these wastes, threatening communities near waste management facilities. In 2000 the focus of the RCRA program will be on reducing risk, tailoring management practices by identifying degrees of risk in regulatory standards, and on creating efficiencies through streamlining procedures and waste management procedures and systems.

The main vehicle for hazardous waste program implementation is the issuance of RCRA hazardous waste permits. The permitting program reduces the risk of exposures to dangerous hazardous wastes by establishing a "cradle-to-grave" waste management framework. This framework regulates the handling, transport, treatment, storage, and disposal of hazardous waste, ensuring that communities are not exposed to hazards through improper management. Significant progress has been made in ensuring that hazardous waste management facilities have appropriate controls in place to minimize the threat of exposure to hazardous substances. To date, 47 of 50 states, Guam, and the District of Columbia are authorized to issue permits. The Agency and the states have now permitted almost all operating landfills and land disposal sites, as well as most commercial incinerators. Permits for storage and treatment facilities as well as post-closure of facilities comprise the largest remaining workload.

In 2000, the Agency will continue its efforts to streamline the permitting processes for implementors and for the regulated community. In 2000 the RCRA program will begin implementation of the standardized permit rule, finalized in 2000, which will simplify the permitting process for lower-risk treatment and storage facilities. Other improvements include a streamlined permit renewal process, which will provide real relief to states which face a large workload over the

next several years in this area. The Agency is working to reduce the substantial burdens of the hazardous waste manifest system. The RCRA program is developing a rule to be proposed in 2000, with the intent of (1) streamlining and standardizing the form; (2) moving toward automated means of tracking waste; and (3) examining possible exemptions. The Agency is also examining all paperwork encumbrances on its regulated communities with the goal of reducing the total burden hours by 40%. These projects will offer efficiencies to industry, and to state and federal implementors alike. The Agency expects that the streamlined permits projects will result in a corresponding increase in the pace of permitting. The Agency's Project XL pilots are real world tests of innovative strategies designed to achieve cleaner and cheaper environmental results than conventional regulatory and policy approaches would achieve. About 60% of the current Project XL applications involve RCRA requirements and it is expected to remain at that level for future projects.

In 2000, the RCRA program will engage in multimedia efforts on joint RCRA/CAA permitting as part of the implementation of the Phase I combustion rule. Special needs during this transition period will include modifying and reissuing RCRA permits currently existing to incorporate appropriate provisions, as well as monitoring trial burns and site-specific testing and risk assessments. During this implementation period, the Agency will certainly be called upon to address potential community concerns associated with facilities being permitted , as well as the testing and permitting process. Outreach efforts will be critical in ensuring that those concerns are adequately and appropriately addressed and that communities are informed.

In 2000, Regional Offices will continue to provide technical assistance to states that are authorized to implement the RCRA program. Assistance to states will include specialized training in the permitting program, regulatory interpretation, and program guidance. In those states that are not authorized to conduct permitting activities, the Regions will implement the permitting program. Significant efforts will be made to incorporate effective permit streamlining principals in both authorized and non-authorized programs. Special emphasis will be placed on interim status facilities and permit renewals. Regional offices will continue to work with both authorized and non-authorized states to implement the standardized permit rule. Also, Regional offices will work with authorized states to meet GPRA annual performance goals and measures.

The centerpiece of the Agency's efforts to better calibrate risk and regulatory standards is the Hazardous Waste Identification Rule (HWIR). This proposal, under development in 1999, will identify lower-risk waste currently regulated under Federal hazardous waste requirements (Subtitle C) that could safely be regulated under state non-hazardous waste regulatory programs. Under this proposal, generators of listed hazardous wastes that meet the standards would no longer be subject to the hazardous waste management system and thus generators would have a reduced management burden for lower risk wastes. In 2000, the HWIR-Waste re-proposal will be published for public comment and the Agency will review public comments and incorporate any changes into the proposed rule for finalizing by 2001. This rulemaking also involves the development of risk assessment tools that will have other uses within the waste management program.

Through its RCRA hazardous waste identification program the Agency identifies those wastes which pose sufficient risk to human health and the environment to warrant regulation under the RCRA hazardous waste management framework. One critical aspect of the RCRA program is protecting groundwater. Improved test methods to better evaluate waste leaching potential are needed for assessing whether a waste should be classified as hazardous (either brought into the system, or allowed out in a delisting), how effective a treatment is, and whether land disposal is an appropriate method for managing particular wastes. The Toxic Constituent Leaching Procedure (TCLP) in the Toxicity Characteristic (TC) regulation is the Agency's method for determining the level of toxicity of the leachate that results from the disposal of wastes in a municipal landfill. Recent challenges to some uses of the TCLP test have led the Agency to begin a review of the test and its applications. Better understanding of basic leaching phenomena and the development of improved methods and procedures to evaluate leaching may improve testing protocols and leaching models, and reduce barriers to the use of innovative waste treatment processes. Over the next several years, the Agency will undertake a comprehensive review of the TCLP and other leach testing protocols and their application to different wastes and waste management conditions. In 1999, initial work will include a public meeting, in 1999, of scientists and stakeholders from the states, industry, academia, and the environmental community, and continued support of ongoing research on fundamental leaching phenomena. In 2000 development of alternative candidate waste leaching tests and procedural development of new improved models will take place, if warranted, based on a review of the scientific research. Research will also be initiated to address any critical gaps in scientific knowledge of basic waste leaching incidents identified by the review of tests and the scientific experts at the public meeting. In 2001, the Agency may be able to begin peer review and validation testing, both in the laboratory and in the field, for the most promising approaches to waste leaching evaluation. Validation of leach testing approaches is necessary to establish both the precision and the accuracy of candidate approaches.

The ongoing Air Characteristics Study will be completed by 2000, addressing the question whether some industrial wastes should be classified as hazardous because of risks posed by their air emissions. Preliminary results indicate that there could be air pathway risk from aerated wastewater treatment tanks and from windborne particulate solid materials containing lead from waste piles in landfills. However, the Agency does not have adequate data on the concentrations or the occurrence of these constituents to evaluate the true hazard. In 2000, as part of the Agency's Air Toxics Initiative, the RCRA program will explore the need for regulatory changes to focus on these risks from wastewater treatment tanks, surface impoundments, and landfills. The RCRA program will investigate possible options for risk reduction.

In 1999 and 2000, the Agency's RCRA waste identification program will address potential risks through listing determinations on wastes generated during the production of paints, as well as dyes and pigments. Other listing efforts include the development of a proposal for wastewaters from the production of chlorinated aliphatics.

The Hazardous Waste Minimization and Combustion Strategy outlines the Agency's plans to ensure that hazardous waste combustion in incinerators and boilers and industrial furnaces (BIFs)

is safe and reliable. The existing rules do not address the risks posed by indirect exposure (through the food chain, primarily) to the dioxins, furans and toxic metals emitted by these facilities. Dioxins and furans are known carcinogens, and may also cause endocrine disruption. Lead and mercury are particularly toxic to children. These toxic substances all accumulate in the environment, leading to potential long-term health impacts. Rulemakings designed to reduce the emissions of hazardous air pollutants will improve the quality of life, as well as limit the number of people and areas exposed to releases from hazardous waste combustion facilities. To reduce the burden on the Agency and the regulated community, the Agency has combined its efforts and is developing these rules under both the CAA and the RCRA.

The Phase I combustion rule will be finalized in 1999 and addresses revised standards for hazardous waste incinerators and cement and lightweight aggregate kilns that burn hazardous waste. The Maximum Achievable Control Technology (MACT) rule will mean an air permit for hazardous waste combustion facilities using streamlined procedures for industry and state implementors. The Phase II rule will deal with revised standards for industrial boilers and other types of industrial furnaces that burn hazardous waste. After the final Phase I rule is issued, implementation efforts in 1999 and 2000 will include the issuance of one or more guidance documents on technical and permitting issues. Further in 2000, the Agency will initiate development of the Phase II rule. Also in 2000, the Agency will conduct additional stack testing to better assess continuous emission monitors for particulate matter at incinerators, cement kilns, and lightweight aggregate kilns that burn hazardous waste. This effort will support site-specific decision making by permit writers and help evaluate public demands for this type of monitoring.

Other efforts to improve the Agency's understanding of risk include implementation of the Land Disposal Program Flexibility Act of 1996. In 2000, the Agency will proceed with surveys and sampling to provide data for the statutorily mandated five-year surface impoundment study, which will improve our understanding of risk, exposure and potential ecosystem stressors associated with waste waters and surface impoundments. An estimated 97% of non-hazardous industrial wastes (i.e., 7.4 billion tons) are managed in surface impoundments, and the five-year study will provide information on the risks of this large category of waste. The study will quantify the probability of human health and ecological effects attributable to exposure from hazardous constituents managed in industrial surface impoundments. In 1999, the Agency will begin implementation of the risk assessment survey and development of a model to estimate risk. In 2000 the Agency will begin compiling and verifying responses to the risk assessment survey and begin collecting publicly available data on the composition of wastes in surface impoundments.

The Agency is also working to reduce risks - both known and unknown - from industrial non-hazardous waste, also known as Industrial D waste. Manufacturing facilities generate and dispose of 7.6 billion tons of industrial non-hazardous waste on-site each year. In 2000, the RCRA program will work toward completing the Industrial D Guidance and working with states and industry to implement voluntary guidelines for industrial non-hazardous waste management. The voluntary guidelines, which will be issued in draft in 1999 and finalized in 2000, will address a range of issues including groundwater contamination, air emissions, and alternatives to waste disposal.

States and tribal governments are solely responsible for regulating management of these wastes; the RCRA program has developed the guidelines in full partnership with the states and other stakeholders. The recommendations in the guidelines are comprehensive and detailed and yet incorporate substantial flexibility for a broad range of different waste streams which pose varying degrees of risks. Outreach and training efforts scheduled for 2001 will be necessary to ensure effective implementation of the guidance, which will also include simplified, workbook-style information on ways to estimate risk of leachate or air emissions without expensive site-specific modeling. The Agency will work with states, other Federal Agencies, and industry to promote safe handling of wastes from mining, oil and gas production and utilities. In 1999, the Fossil Fuel Report to Congress will be completed and work will begin on a regulatory determination. In 2000, the Agency will provide grant funding to the Interstate Oil and Gas Compact Commission (IOGCC) to conduct state program reviews open to all stakeholders. The primary impetus of the state review process will focus on whether states have effective programs in place to protect human health and the environment.

Although municipal solid waste (MSW) landfill regulatory programs are implemented by the states, it is the Agency's responsibility to establish minimum national standards with which all facilities must comply. In addition, the Agency must review and approve state MSW landfill permit programs. Without proper siting, design, operation, closure, and post-closure care, MSW disposal facilities can endanger public health and the environment. In fact, a number of Superfund sites are former municipal landfills. In 2000, states will continue to implement the modifications to the Subtitle D National Criteria. These modifications are designed for increasing the flexibility of operating small MSW landfills, resulting in lower management costs for lower risk situations while still protecting human health and the environment. The federal framework for states' municipal landfill management programs will seek the uniform application of minimal safe management standards to help ensure that sufficient controls are in place to protect public health and the environment, regardless of the facility's location.

Waste management is one of the significant environmental issues facing tribes across the country. Open dumps are of particular concern to tribal leaders and is the area for which tribes most frequently request technical assistance from the Agency. In 2000, the Agency will enhance its partnership with the Indian Health Service (IHS) and Bureau of Indian Affairs (BIA) to address the issue of open dumps. The Agency's plan is to work with BIA and IHS to develop a comprehensive strategy to address the landfill compliance issues. EPA, together with other Federal agencies, will assess risk to human health and the environment and also will provide on site technical assistance during the closing of dumps. In addition, EPA will play the much needed role of liaison between the federal agency team and the members of the communities adjacent to the sites. In 2000, the Agency will facilitate work with tribes that have hazardous waste issues to help build their capacity to effectively manage hazardous waste. Improving waste management is also inextricably integrated with the tribes' number one environmental and public health priority - clean drinking water and the concomitant necessity to protect groundwater resources - especially in areas where water treatment may not be available.

In order to address information management across the waste program, the Agency launched the Waste Information Needs (WIN/Informed) Initiative. This multi-year comprehensive review and design of the RCRA information systems is being conducted as a partnership between EPA and the states and seeks to reduce the reporting burden of data providers by streamlining current national reporting requirements, coordinating RCRA information system standards with other EPA data systems, improving the utility of the information that is collected, and continuing to promote electronic reporting whenever feasible. By 2000, the project will have analyzed the information needed to identify the universe of hazardous waste handlers and have begun analyzing the information needed to support the monitoring of waste activities at handlers (e.g. generation, movement and management - the areas currently supported by the Biennial Reporting System). Design and construction of new systems will begin based on these analyses.

A total of $10,060,200 is requested for Federal response planning and coordination activities. EPA supports a highly effective national emergency preparedness and response capability. Under the National Response Team (NRT)/Regional Response Team mechanism and Federal Response Plan, the Federal government helps states and communities address major incidents that are beyond their capabilities. EPA chairs the NRT, which integrates activities of all Federal partners to prevent, prepare for and respond to hazardous releases and emergencies. A key priority under the Federal preparedness program is to protect public health and the environment from terrorist threats. Under this program, EPA participates with other Federal agencies to implement a number of national security and counter-terrorism requirements. They include:

1) Continuity of Operations (COOP) Program. This effort, a 2000 Presidential priority, requires EPA to ensure that essential Agency operations continue in the event of an emergency. As such, in 2000 the Agency will improve its capabilities to perform these vital functions; e.g., deliver training, conduct exercises, and refine contingency plans.

2) Critical Infrastructure Protection. Presidential Decision Directive (PDD) #63, requires EPA (and other Federal agencies) to strengthen Agency and stakeholder defenses against assaults on critical infrastructures, including cyber systems. EPA has the lead responsibility for coordinating plans and activities with the water supply sector. In the year 2000, we will focus efforts on implementing industry and EPA plans to ensure identified vulnerabilities are adequately addressed.

3) Counter-terrorism Emergency Preparedness. As directed under PDDs #39 and #62, EPA participates in the crisis and consequence management phases of terrorist incident response exercises; prevents and prepares for deliberate release situations; and coordinates efforts with other federal agencies to ensure that counter-terrorism activities are integrated with other state and local emergency preparedness and response programs (such as State Emergency Response Commissions, LEPCs and the National Response System).

In 2000, EPA's counter-terrorism program will continue to focus on helping stakeholders to prepare for and respond to nuclear, biological and chemical acts of terrorism. EPA will ensure

that response personnel are trained to respond to terrorist events. We will also work with our Federal partners to train federal, state and local planners to understand the connections between the National Response System and the National Domestic Preparedness Program for terrorist events. Our activities will be conducted as part of the Federal government's initiative to ensure that State and local emergency officials are adequately trained. The Agency's goal in the year 2000 is to complete training programs in an additional 19 of the 120 communities deemed most vulnerable to terrorist attacks.

Under the National Contingency Plan and the Federal Radiological Emergency Response Plan, EPA assists the regions, states and other Federal agencies in responding to radiological emergencies; offers field monitoring expertise, mobile radio analysis, and dose assessment; and develops Protective Action Guidance for use by state/local authorities. EPA also performs radiological lab analyses, which provide data to the public on dose levels and potential risks. EPA maintains and will make enhancements to the Environmental Radiation Ambient Monitoring System which is comprised of 260 monitoring stations that sample drinking and ground water, air and, milk samples to detect levels of radiation.

Research

Research conducted in this objective supports the Agency's Office of Solid Waste (OSW). Research will focus on: 1) combustion; 2) multimedia science in support of the HWIR; and 3) waste technology research related to waste derived products, stability of new waste forms, and recycling. Research is needed to provide the technical basis to determine risks and set operating monitoring and controls for individual combustion facilities. Potential for exposure to humans and ecosystems is high since there are numerous generators of hazardous wastes in every community, ranging in size from dry cleaners and brake shops to major chemical industrial complexes.

Through the development of new and improved methods and models to assess exposure and effects, research will provide the fundamental science and modeling backbone needed to conduct truly multimedia, multipathway exposure modeling and risk assessment. This research is in direct support of the regulatory reform efforts under HWIR and is related to the development of national "exit levels" (levels below which a waste or waste stream is excluded from regulation under RCRA Subtitle C) based on sound scientific data and models. HWIR has been proposed to provide administrative and economic relief to the regulated community by developing a risk-based approach expected to exclude many low-risk wastes and waste streams from regulatory control under Subtitle C of the RCRA. This research is intended to develop a systems approach to modeling and data management for the purpose of facilitating the consistent and scientifically credible assessment of multimedia-based human and ecological exposure to chemical stressors at various geographic scales, including waste sites and small watersheds.

Present exposure modeling techniques do not adequately account for many contaminant speciation processes that impact the fate of pollutants in natural systems. It is necessary to reduce the uncertainty associated with exposure assessment model predictions by providing improved

process level data and models for quantifying pollutant interactions in a variety of natural systems. The research also provides consultation on sampling/sample design related to compliance with proposed "exit levels" in support of the proposed HWIR. The major outcome for 2000 will be the completion of a prototype integrated, multimedia, multichemical, multipathway ecosystem and human health cumulative exposure/risk assessment model.

Additional research will involve indirect pathway risk assessment. The purpose of this research is to evaluate the risk posed by combustion facilities on human and ecological receptors. Indirect pathway risk assessment research will focus on development, validation, and refinement of a methodology that estimates exposures from combustion facilities via indirect or non-inhalation exposure pathways. The methodology was developed to provide a set of procedures for the estimation of exposures resulting from emitted pollutants that have been transferred from the atmosphere to environmental media and biota. For 2000, emphasis in this area will be refining the methodology and developing an expert system software package.

In the risk management area, the current principal focus is on hazardous waste combustion. This area addresses incinerators and industrial systems burning wastes. It studies the reduction of emissions by system design and operation changes, as well as through the use of add-on controls. Emissions from waste combustion facilities have remained a public concern, and a number of uncertainties remain about the risks posed by these facilities. This area requires further research to reduce uncertainties related to waste combustion and provide protection to the public and the environment.

In 2000, characterization of dioxin and furan emissions from industrial boilers will continue and approaches to reducing these emissions will be assessed. Work will continue to identify surrogates for organic products of incomplete combustion (PICS) that can be used in permitting and monitoring combustion unit performance. Work on mercury emissions characterization and control will also continue. Manual methods for speciating mercury emissions streams will be evaluated in order to improve characterization of streams in the combustion unit and at the stack emissions point. Collaborative work on mercury continuous emissions monitors (CEMS) will continue with the Department of Energy (DOE). Improved approaches to mercury control through either combustion unit modification, sorpbent addition, and/or add-on-control, will be evaluated.

Waste management research will be conducted to improve ways to manage both solid and hazardous wastes. This includes development and/or evaluation of more cost-effective waste treatment, containment and recycling processes, and technical guidance, etc. on their design and implementation. Research activities will include evaluation of RCRA landfill engineering and design issues, and evaluation of improved containment systems for hazardous and solid waste landfills.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$125,200) This increases technical assistance to tribes since EPA has the responsibility for implementing the UST/LUST program on Indian lands.

- (+$4,504,400) increases resources for technical assistance grants to promote State implementation of the RMP program. These funds will put the Agency on track to have 25 states manage an RMP program by the end of 2003.

- (+$454,800) increases funding to improve emergency preparedness for chemical accidents on tribal lands.

- (+$1,773,800 +9.5 FTE) This increase in RCRA tribal program will improve both the Headquarters and Regions ability to provide assistance to tribes to continue and implement integrated waste management plans, to further identify waste management priorities and build waste management capacity on tribal lands, and increase support in the management of tribal grants and contracts. In addition, this increase would promote liaison capability with other Federal agencies in addressing the issue of open dumps on tribal lands.

- (+$500,000) This increase in the RCRA hazardous wastes identification program, proposed for the Agency's Air Toxics Multi-media initiative, will evaluate air pathway risks to human health and the environment from wastewater treatment tanks, surface impoundments, and landfills.

- (+$1,000,000) This increase in the RCRA land disposal program will permit the Agency to conduct critical surveys and sampling to provide data for the statutorily mandated five-year surface impoundment study, which will improve our understanding of risk, exposure and potential ecosystem stressors associated with waste waters and surface impoundments.

- (+$1,285,600) This increase in the RCRA permitting program will allow the Agency to implement the standardized permit rule, which will simplify the permitting process for lower-risk treatment and storage facilities and propose a new rule to reduce the substantial burdens of the hazardous waste manifest system. This increase affects permitting activities in the Gulf of Mexico, along the Mexican Border and further enhance state and local capacity building efforts. In addition, these changes will offer efficiencies to industry and regulators with an expected corresponding increase in the pace of permitting. The increase will provide transition support for the multi-media efforts on joint RCRA/CAA permitting as part of the Phase I combustion rule implementation.

- (+$500,000) This increase in RCRA risk analysis program will support a review of the Toxic Constituent Leaching Procedure (TCLP) and other leach testing protocols and their applicability to various wastes and waste management conditions at land disposal sites.

- (+$400,000) This increase in RCRA industrial D program will provide grant funding to the Interstate Oil and Gas Compact Commission (IOGCC) to conduct state program peer reviews open to all stakeholders and support the completion of Industrial D Guidance.

- (+$500,000) This increase in RCRA Waste Information Needs program will complete waste activity monitoring analysis and recommend revisions to the current database system. Design and construction of new database systems will begin based on these analyses.

- (+$411,300) This increase in the RCRA hazardous waste combustion program will support the issuance of one or more guidance documents on technical and permitting issues and initiate development of the Phase II rule.

- (-$162,100) This reduction from in UST State Program Approval (SPA) support is being made because of the moderate success states have had in achieving SPA.

- (-$177,600) This reduction in support for developing UST partnerships is a result of being able to fund this work primarily with FTE resources.

- (-$400,000) Due to Congressional Add-ons received during the appropriations process, but not part of the 2000 President's Request.

- ($420,300) This redirection will be used for compliance assistance used ensure more owners and operators are in compliance with the UST requirements and to help conduct an evaluation of UST systems.

Superfund

- (+342.7). Reflects an increase to Non Civil Enforcement HQ Oil Pollution Act..

STAG

- (+$1,400,000) For additional state UST grants to Indian tribes to assist them in developing the capability to administer and implement the UST program.

OIL

- ($304,200) This is a redirection to SPCC compliance support and Contingency Planning activities. The funds are redirected from Facility Response Plan reviews to meet higher Agency priorities.

Research

- (+$1,071,200 and 12.4 workyears S&T) This increase represents resources transferred from Goal 5 Objective 1, contaminated sites research, to active waste management facilities research. In 2000, the Agency will expand its research on the characterization and prevention of emissions from waste combustion to more rapidly address such topics as dioxins and furans emissions from industrials boilers and waste combustion mercury emissions. Additional Hazardous Waste Identification Rule (HWIR) research will be conducted.

- (-$816,640 and -1.6 work years S&T) Grant resources in support of active waste management facilities research will be eliminated in this Objective in 2000, as a result of the conclusion of resources targeted at active waste management facilities research in 1999.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

UST Compliance

In 2000 90% of USTs will be in compliance with the December 22, 1998, requirements, which improves upon the estimated 65 percent as of the December 22, 1998 deadline.

Performance Measures	FY 1999	FY 2000
Percentage of USTs in compliance with the 1998 deadline requirement.		90 percent

Baseline: An estimated 65% of USTs were in compliance at the time of the December 22, 1998 deadline.

RMP Requirements

In 2000 75% of facilities will be in compliance with the RMP submission requirements, 6 States (for a cumulative total of 13) will be implementing the RMP program, and 300 audits will be completed on RMP plans to determine completeness and accuracy.

In 1999 Complete electronic systems for collecting and establishing baseline data on 33,000 RMP facilities. Additionally, 3 States (for a cumulative total of 7) will be implementing the Risk Management Plan program, and 70 local emergency planning committees will have integrated prevention programs.

Performance Measures	FY 1999	FY 2000
Percentage of facilities in compliance with RMP requirements.		75 percent
RMP audits completed.		300 audits
Number of states implementing the RMP program	3 states	6 states
Number of LEPCs implementing the Clean Air Act 112 (r) chemical RMP- prevention programs	70 LEPCs	

Baseline: This is a new activity and the baseline is being established.

SPCC Compliance

In 2000 400 additional facilities will be in compliance with the Spilll Prevention, Control and Countermeasure (SPCC) provisions of the oil pollution prevention regulations (for a cumulative of 890 facilities since 1997).

In 1999 190 additional facilities will be in compliance with spill prevention, control and countermeasure (SPCC) provisions of the oil pollution regulations (for a cumulative total of 490 additional facilities since 1997).

Performance Measures	FY 1999	FY 2000
Facilities in SPCC compliance.	190 facilities	400 facilities

Baseline: More than 300 facilities were in compliance in 1998.

Response to Oil Spills

In 2000 Respond to or monitor all significant oil spills in the inland zone. EPA typically responds to 70 oil spills and monitors 130 oil spill cleanups per year.

In 1999 Respond to or monitor all significant oil spills in the inland zone. EPA typically responds to 70 oil spills and monitors 130 oil spill cleanups per year.

Performance Measures	FY 1999	FY 2000
Oil spills responded to by EPA.	70 spills	70 spills
Oil spills monitored by EPA.	130 spills	130 spills

Baseline: EPA typically responds to 70 oil spills and monitors 130 oil spill cleanups per year.

OPA Enforcement

In 2000 Facilities will be managed so as to prevent releases into the environment.

In 1999 Facilities will be managed so as to prevent releases into the environment.

Performance Measures	FY 1999	FY 2000
OPA Case Referrals & Admin. Enforce. Actions	30 Actions	30 Actions

Baseline: No Baseline Performance Information is available.

RCRA Permitting Standards and Compliance

In 2000 146 more hazardous waste management facilities will have approved controls in place to prevent dangerous releases to air, soil, and groundwater, for a total of 65 percent of 3,380 facilities.

In 1999 122 hazardous waste management facilities (for a cumulative total of 61% of 3,380 RCRA facilities) will have permits or other approved controls in place.

Performance Measures	FY 1999	FY 2000
Promulgate final streamlined permitting standards		09/30/2000
RCRA hazardous waste management facilities with permits or other approved controls in place.	122 facilities	146 facilities

Baseline: EPA identified hazardous waste management facilities as of 1997. The baseline will be finalized in 1999.

Hazardous Waste Combustion

In 2000 Initiate development of the Phase 2 rule for reducing hazardous waste combustion facility emissions of dioxins, furans, and particulate matter under RCRA.

In 1999 Promulgate the Phase 1 rule for reducing hazardous waste combustion facility emissions of dioxins, furans, and particulate matter under RCRA.

Performance Measures	FY 1999	FY 2000
Complete industry scoping studies and issue report.		09/30/2000
Complete initial analysis of existing EPA databases solicit industry comment.		09/30/2000
Promulgate Phase 1 of Waste Combustion Rule	09/30/1999 rule mak	

Baseline: Promulgation of the Phase 1 rule for reducing hazardous emissions of dioxins, furans, and particulate matter under RCRA is anticipated in 1999.

Non-Hazardous Industrial Waste

In 2000 Issue final guidance for guidance on management of RCRA-regulated nonhazardous industrial waste.

In 1999 Issue draft guidance on management of RCRA-regulated nonhazardous industrial waste.

Performance Measures	FY 1999	FY 2000
Issue final guidance for RCRA Industrial D guidance.		09/30/2000
Issue draft RCRA Industrial D guidance	09/30/1999	

Baseline: The baseline will be established as a result of EPA's outreach and training.

Municipal Solid Waste

In 2000 74% (141 for a cumulative total of 2,600 out of 3,536) of existing RCRA municipal solid waste facilities in states will have approved controls in place to prevent dangerous releases to air, soil, groundwater, and surface water.

In 1999 70% (125 for a cumulative total of 2,475 out of 3,536) of existing RCRA municipal solid waste facilities in states will have approved controls in place to prevent dangerous releases to air, soil, groundwater, and surface water.

Performance Measures	FY 1999	FY 2000
Percent of municipal solid waste landfills (MSWLFs) with approved controls.	70 percent	74 percent

Baseline: The universe was obtained in the 1996 MSWLF survey. EPA is currently negotiating with states to determine a means of data collection and verification.

Anti-Terrorism

In 2000 Provide anti-terrorism training to 19 communities.

In 1999 Provide anti-terrorism training to 30 communities.

Performance Measures	FY 1999	FY 2000
Number of communities receiving anti-terrorism training	30 communities	19 communities

Baseline: This is a new activity and the baseline is being established.

Research

Scientifically Defensible Decisions for Active Management of Wastes

In 2000 Enhance scientifically defensible decisions for active management of wastes, including combustion, by providing targeted research and technical support

Performance Measures	FY 1999	FY 2000
Develop provisional toxicity values for 10 - 20 waste constituents that do not have values describing their dose-response toxicological properties.		09/30/2000 values
Provide journal article on factors that control Hg speciation in incinerators		1 article

Baseline: 1)Refines and expands scientific basis of HWIR by add toxicity values and refining multimedia, multipath exposure and risk modeling software; 2) initiates research into non-combustion treatment and recycling of prior wastes; 3)improve understanding of Hg formation in combustion processes in order to minimize Hg contamination of wastes. Development of "formal" baseline info for EPA research is currently underway.

Prototype Model for Assessing Cumulative Exposure - Integrated Risk Assessment

In 1999 Complete prototype model for assessing cumulative exposure-risk assessment integrating the environmental impact of multiple chemicals through multiple media and pathways.

Performance Measures	**FY 1999**	**FY 2000**
HWIR Human and Ecosystems Site (Generic) Exposure-Risk Assessment Screening Model, peer reviewed and applied to HWIR listed chemical exit levels	30-SEP-1999	
Beta version for comprehensive modeling system.	09/30/1999 system	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures

The Office of Underground Storage Tanks (OUST) uses the following processes to verify and validate the performance measures data. Designated state agencies submitted semi-annual progress reports to the EPA regional offices, who review, verify and then forward the data to the OUST Headquarters office. OUST Headquarters staff examine the data and resolve any discrepancies with the regional offices. The data are displayed on a region by region basis, which allows regional staff to verify that their data are the same as Headquarter's. However, OUST does not maintain a national database.

The performance results are also used in OUST's Regional Strategic Overview (RSO) Process to assess the status of State progress in implementing the program. This process is based on strategic discussions that Headquarters has with the Regions and the Regions have with the States, regarding how to continue to improve States' performance. In the mid-year and end of year state evaluations, the Regions discuss with States their efforts to update and validate their data, and to make continual improvements in their performance. EPA relies on its state partners to provide our measurement data which have been used by the UST/LUST program for 10 years.

The Chemical Emergency Preparedness and Prevention program uses the following processes and data bases to collect and validate performance data. Facilities will be required to submit information on the chemical risks in their facilities in 1999. This information will be placed in a database that will be accessible to Federal, state, and local officials, as well as the public with safeguards for sensitive information. The information will be verified through Regional and state audits and reports. LEPCs will be contacted periodically to verify risk reduced in their community.

The Emergency Release Notification System (ERNS) database will be used to confirm releases reported in RMPs.

States and LEPCs will be surveyed to determine the status of their chemical emergency preparedness and prevention programs, including the steps taken to integrate counter-terrorism planning. A Federal Emergency Management Agency (FEMA) database will be monitored to determine if all hazard plans include a counter-terrorism appendix. A database will track the status of RMP state delegated programs. Regions and headquarters will routinely enter information on the status of state RMP implementation plans, and Regions will ensure quality of the data through quarterly reviews of the states and random checks of LEPCs.

The CERCLIS database developed for the Superfund program is also used to help track and store the Oil Spill Program performance data. Entry of Oil Spill Program data into CERCLIS began in 1993. A complete description of the CERCLIS database is located under Goal 5, Objective 1.

Environmental monitoring data (such as measures of combustion facility emissions) will meet standard quality assurance/quality control (QA/QC) procedures for the RCRA program, as documented in the Office of Solid Waste Quality Assurance Management Plan and the Guidebook for QA/QC Procedures for Submission of Data for the Land Disposal Restrictions Program.

The majority of data for the RCRA information system (RCRIS) and the Biennial Reporting System (BRS), originates with and is received from the states. The system architectures provide states with the ability to use software other than the national software managed by EPA for their data management activities, provided that they supply the mandatory data to EPA in the required quality and format. The Agency consolidates data from the states which is then used to construct the national databases used for program oversight and public information.

The national RCRA software provides a range of functions to ensure data quality. Both systems employ on-line data validation checks (e.g., range limits, mandatory data entry for required elements before saving of a record) to assure data type integrity as well as batch edits (performed when data is extracted and consolidated) to enforce program rules requiring associated consistency across data components for which on-line edits are impractical or inappropriate. Beyond the system-enforced data quality controls, states and regions who implement the program perform data validation reviews to ensure that the data properly inventories the essential program activities and is programmatically correct. During periodic program reviews, EPA headquarters also confirms the timeliness and accuracy of key data elements which support national program status reporting. Training on use of the systems is provided on a regular basis, usually annually, depending on the nature of system changes and user needs.

Non-hazardous waste management is delegated to the states. Federal guidance is provided, but no actual federal program implementation exists. Individual states collect and verify data on waste management practices for Industrial D and municipal wastes in accordance with local needs. The Agency receives aggregate data more indirectly than in the case of hazardous waste, through

reports, studies, or statistical sampling rather than a national data system. To measure progress, the Agency must rely on the ability and willingness of state regulatory programs to share information in these areas. "Approved controls in place" means compliance with the requirements of federal regulations, Agency approved state permit program, or other system of prior approval and conditions. For 2000, continued emphasis will be placed on approving State programs that will lead to all MSW disposal facilities having approved controls in place.

Progress under RCRA Permitting is recorded in activity event codes in RCRIS which are reviewed at least annually during the Beginning of the Year Plan process. While some problems in the accuracy of RCRIS data have been found in the past, significant improvements in quality have been made over the past few years. The importance of RCRIS data has been recognized, and the quality of RCRIS data is improving. Charts illustrating the comparative progress between Regions, and between States are shared with the Regions and States.

The RCRA program is currently evaluating its future information management needs and systems through a joint initiative with the states called WIN/INFORMED. This project covers the activities and information currently supported by both the RCRIS and BRS data systems. Analysis under WIN/INFORMED includes the identification of the data elements needed to support the implementation and management of the RCRA program; development of common, agreed upon national definitions; identification of programmatic process improvements; and tracking burden reduction. The design and construction of new systems will be based on the results of each area of analysis, and will be flexible to accommodate future needs. The WIN/INFORMED project is scheduled to be completed by the end of the calendar year 2002.

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Most performance measures are verifiable through quantitative means. For those measures that are output-oriented, actual outputs or products can be objectively verified. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to the validation and verification strategies is the performance of both peer and quality assurance reviews.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality

management system provides for identification of environmental programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality

management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

State UST programs are key to achieving the objectives and long-term strategic goal. EPA relies on states agencies to implement the UST program, including developing core program capabilities and promoting and enforcing compliance with the UST requirements.

Because many agencies at all levels of government have authority to regulate and implement aspects of hazardous materials safety programs, coordination is essential for the success of EPA initiatives. For chemical accident preparedness and prevention programs, inter-agency coordination remains a critical factor in accomplishing the goals of the Risk Management and EPCRA programs. EPA works in partnership with states and local governments and other organizations to promote actions to reduce risk. EPA also provide technical assistance and tools to states and LEPCs to better utilize the information on chemical hazards and risks available to them. In addition, through the rule making process, EPA works closely with our Federal partners (OSHA, DOT) and with states to ensure compatibility with existing accident preparedness and prevention initiatives. Close coordination and a cooperative working relationship is also required to effectively meet EPA responsibilities to respond and provide support to the Chemical Safety Board.

The focal point for our Federal preparedness efforts is EPA's role in the National Response System, which is responsible for coordinating chemical emergency preparedness and response at the federal, state and local levels. Within this structure, EPA chairs the multi-agency National and Regional Response Teams that oversee national, regional, and area spill contingency planning. In addition, the Agency plays a leadership role in crisis management and counter-terrorism requiring participation on a number of inter-agency workgroups. EPA also works with the United States Coast Guard work to coordinate with other Federal authorities to implement the National Preparedness for Response Program (PREP).

The Oil Spill Program is multi-dimensional, integrating prevention, preparedness, and response activities to address oil spills that create significant environmental and economic impacts. These activities include implementing the Spill Prevention, Control, and Countermeasures (SPCC)

program; evaluating, improving, and providing periodic review of facility response plans (FRPs) and developing, overseeing, and strengthening area contingency plans with other Federal agencies such as the US Fish & Wildlife Service (FWS), National Oceanographic and Atmospheric Administration (NOAA), US Coast Guard (USCG), Federal Emergency Management Agency (FEMA), Department of the Interior (DOI), Department of Transportation (DOT), Department of Energy (DOE), and other Federal agencies and States, as well as with local government authorities. The Department of Justice (DOJ) also provides assistance to agencies with judicial referrals when enforcement against violators becomes necessary.

The Agency maintains a close relationship with state agencies that are authorized to implement the RCRA Permitting, MSW Landfills programs. States are required to achieve the same level of Federal standards as the Agency, including the annual performance goals of controls at hazardous waste facilities and MSW landfills. Regional Offices negotiate with the state agencies annualized goals that the state agencies should achieve with the grant funds. For example, Regional Offices may negotiate with state agencies the number of facilities that are permitted in a year resulting in approved controls in place at facilities. The Agency will continue our partnership effort with state agencies by providing technical assistance and guidance on implementing permitting and MSW Landfill programs.

Regional RCRA tribal teams will partner with the Indian Health Service (IHS) and the Bureau of Indian Affairs (BIA) for the open dump initiative. In states where partnerships with these federal agencies have not been well established, the Regional offices will establish strong workgroups comprised of members from each agency. The workgroup representatives from each Federal agency will coordinate tasks based on the field of expertise of each agency which will allow for efficient completion of the initiative without overlapping efforts.

Research is being conducted by the Department of Energy (DOE) for mixed waste management issues. EPA and the National Institute of Environmental Health Sciences (NIEHS) are jointly funding chemical mixtures research, which is of value to EPA program offices and outside agencies.

Research

Research is being conducted by DOE for mixed waste management issues. EPA and the National Institute of Environmental Health Sciences (NIEHS) are jointly funding chemical mixtures research, which is of value to EPA program offices and outside agencies. HWIR model development is being conducted in cooperation with DOE also.

Statutory Authorities

Subtitle I of the Hazardous and Solid Waste Amendments of 1984 to the Solid Waste Disposal Act. The regulated substances are liquid petroleum products and substances defined as hazardous under

the Comprehensive Environmental Response, Compensation, and Liability At of 1980, as amended under the Resource Conservation and Recovery Act of 1976.

Clean Air Act

Title III (Emergency Planning and Community Right-to-Know Act) of CERCLA, as amended by Superfund Amendments and Reauthorization Act (SARA) of 1986.

Clean Water Act (CWA), Section 311.

Oil Pollution Act (OPA), 33 U.S.C. 2701-2761.

Solid Waste Disposal Act as amended by Hazardous and Solid Waste Amendments of 1984 to the Resource Conservation and Recovery Act of 1976

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986

Waste Isolation Pilot Plant (WIPP) Land Withdrawal Act (Public Law 102-579 as amended by Public Law 104-201) 40 CFR 194: Criteria for the Certification and Recertification of the WIPP's Compliance with the Disposal Regulations (1996): Certification Decision (1998).

Nuclear Waste Policy Act of 1982 Public Law 97-425.

Energy Policy Act of 1992, Public Law 102-486 and Administrative Procedures Act, 5 U.S.C. 551-559, 701-706.

Atomic Energy Act of 1954 as amended, 42 U.S.C. 2011 et seq. (1970), and Reorganization Plan #3 of 1970.

Uranium Mill Tailings Radiation Control Act (UMTRCA) as amended.

Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1998.

Title XIV of the National Defense Authorization Act of 1996 (Nunn-Lugar II).

Section 6981, Research, demonstration, training, and other activities, of RCRA specifically authorizes the Administrator to perform research on waste management and waste combustion issues. The Agency must evaluate and permit many combustion facilities in a relatively short time. EPA is also mandated under The Clean Air Act Amendments to develop MACT regulations and to evaluate and reduce the risks from combustion facilities.

Goal 6: Global and Cross-Border

Goal 6: Reduction of Global and Cross-Border Environmental Risks VI-1
Reduce Transboundary Threats: Shared North American Ecosystems VI-7
Climate Change VI-19
Stratospheric Ozone Depletion VI-39
Protect Public Health and Ecosystems From Persistent Toxics VI-45
Achieve Cleaner and More Cost-Effective Practices VI-55

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risks

Strategic Goal: The United States will lead other Nation's in successful, multilateral efforts to reduce significant risks to human health and ecosystems from climate change, stratospheric ozone depletion, and other hazards of environmental concern.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduction of Global and Cross-border Environmental Risks	**$398,286.4**	**$229,366.9**	**$407,414.2**	**$178,047.3**
Reduce Transboundary Threats: Shared North American Ecosystems	$120,392.3	$71,025.9	$119,987.5	$48,961.6
Climate Change	$232,960.4	$127,968.9	$242,765.0	$114,796.1
Stratospheric Ozone Depletion	$26,914.3	$17,033.8	$27,046.5	$10,012.7
Protect Public Health and Ecosystems From Persistent Toxics	$6,883.2	$4,125.8	$6,943.1	$2,817.3
Achieve Cleaner and More Cost-Effective Practices	$11,136.2	$9,212.5	$10,672.1	$1,459.6
Total Workyears:	530.2	522.4	519.9	-2.5

Background and Context

Air, water, and waste pollution crossing our boarders with Mexico and Canada can imperil the health, environment and well-being of people in the United States. Thus, international cooperation is critical to achieving EPA's mission.

Depletion of the stratospheric ozone layer increases the amount of the sun's ultraviolet radiation reaching the earth's surface. Climate change, pollution of the oceans and irreversible loss of species and habitats worldwide undermine the resource base critical to our well-being and quality of life and deprive us of commercially valuable and potentially life-saving genetic materials. EPA's continued leadership is necessary to build the international cooperation and technical capacity that are essential to prevent harm to the global environment and ecosystems that we share with other nations. A coordinated international response is needed to confront the climate change threat, depletion of the stratospheric ozone layer, transboundary circulation of toxics, and other environmental issues significant to the interests of the United States.

Means and Strategy

Pollutants are oblivious to geographic and political boundaries, and their propensity to migrate threatens human health and the environment, demanding coordinated international action. The United States addresses global environmental problems, such as climate change and stratospheric ozone depletion, through bilateral and multilateral consultations and agreements. Other problems are not global but cross borders, such as between the US and Mexico, and between the US and Canada. In the Great Lakes, and in our marine and Arctic environments, EPA uses a geographic approach to direct environmental action.

EPA will use a variety of approaches to prevent harm to the global environment and ecosystems including: 1) forming bilateral and multilateral environmental agreements, environmental foreign policy initiatives, and regional and global negotiations; 2) cooperating with other countries to ensure that domestic and international environmental laws, policies, and priorities are recognized and implemented; 3) working with other federal agencies, states, business, and environmental groups to promote the flow of environmentally sustainable technologies and services worldwide; facilitating cooperative research and development programs; and international technical assistance, training and information exchange; and 4) and promoting public/private partnership programs to reduce greenhouse gas emissions.

Greenhouse gases, for example, are produced by burning coal, oil, and natural gas to heat our homes, power our cars, and illuminate our cities. Deforestation and land clearing also contribute to the production of greenhouse gases. These gases may have several environmental effects: raising atmospheric and ocean temperatures, ultimately changing weather patterns; increasing evaporation, drying soil and increasing drought; increasing precipitation and its intensity, causing floods; increasing incidences of heat waves; and raising sea levels.

Possible adverse consequences for human health include: increasing numbers of deaths associated with heat waves; increasing incidence of allergic disorders; and increasing diseases that thrive in warmer climates, such as malaria, yellow fever, dengue fever, encephalitis, and cholera. Since the early 1990s, EPA has been building partnerships with businesses in all sectors of the economy in order to meet the 1990 Framework Convention on Climate Change (FCCC) objective to stabilize greenhouse gases emissions at 1990 levels. EPA also plays a major role in the President's Climate Change Technology Initiative (CCTI), launched in October, 1997, and included in the 1999 Budget.

Research

EPA's research and assessment activities will evaluate the potential consequences of global change and climate variability in the United States. These assessments will focus on evaluating the impacts of global change on human health, ecosystems, and economic systems at regional, state, and local scales. Among the impacts the agency will examine are the spread of vector-borne and water-borne disease, changes in landscape cover and the migration of plant and animal species, and changes in farm productivity and food distribution. These research and assessment activities are an integral part of the U.S. National Assessment Process of the U.S. Global Change Research Program.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Reduce Transboundary Threats: Shared North American Ecosystems

By: 2000 — 9 additional water/wastewater projects along the Mexican border will be certified for design-construction for a cumulative total of 34 projects.

By: 2000 — Assess and report on the state of key Great Lakes ecosystem components, report current status and trend information to Great Lakes environmental managers, and coordinate measurement of SOLEC environmental indicators applicable to the entire Great Lakes Basin.

Objective 02: Climate Change

By: 2000 — Assess the consequences of global change and climate variability at a regional scale.

By: 2000 — Greenhouse gas emissions will be reduced from projected levels by more than 50 million metric ton carbon equivalent per year through EPA partnerships with businesses, schools, State and local governments, and other organizations. Reduction level will increase 10 million metric tons over 1999.

By: 2000 — Reduce energy consumption from projected levels by more than 60 billion kilowatt hours, resulting in over $8 billion in energy savings to consumers and businesses that participate in EPA's climate change programs. Increase of 15 billion kilowatt hours & $5 million in annual energy savings over 1999.

By: 2000 — Demonstrate technology for a 70 mpg mid-size family sedan that has low emissions and is safe, practical, and affordable.

Objective 03: Stratospheric Ozone Depletion

By: 2000 — Restrict domestic consumption of class II HCFCs below 208,400 metric tonnes (MTs) and restrict domestic exempted production and import of newly produced class I CFCs and halons below 130,000 MTs.

Objective 04: Protect Public Health and Ecosystems From Persistent Toxics

By: 2000 — Successfully conclude international negotiations on a global convention on Persistent Organic Pollutants (POPs) reaching agreement on POPs selection criteria, technical assistance, and risk management commitments on specified POPs.

Objective 05: Achieve Cleaner and More Cost-Effective Practices

By: 2000 Deliver 30 international training modules; implement 6 technical assistance/ technology dissemination projects; implement 5 cooperative policy development project; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers.

Highlights

EPA's continued leadership is necessary to build the international cooperation and technical capacity that are essential to prevent harm to the global environment and ecosystems that we share with other nations. In 2000, EPA will use a variety of approaches to prevent harm to the global environment and ecosystems.

Recognizing that no single country can resolve the problem of global climate change, EPA will help facilitate the international cooperation necessary to achieve the stabilization of greenhouse gas concentrations. The 1992 Framework Convention on Climate Change (FCCC) set the objective of stabilizing greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system. On the domestic side, EPA will encourage voluntary partnerships, provide technical assistance and promote State and local efforts to achieve future green house gas emission reductions. Administration-wide, the programs launched in the 1993 Climate Change Action Plan have the potential to reduce U.S. greenhouse gas emissions by over 160 million metric tons of carbon equivalent (MMTCE) annually by the year 2010.

The Agency will contribute to the science underpinning U.S. policy, including the assessment of consequences of climate change and climate variability. Particular attention will be paid to the potential beneficial and detrimental consequences of climate variability and change for human health, ecosystems, and economic systems at the regional, state and local levels. EPA will play a major part in peer-reviewed economic and policy analyses that serve U.S. policy-makers and international negotiators.

To protect the earth's stratospheric ozone layer, EPA will continue to regulate ozone-depleting compounds and foster the development and use of alternative chemicals in the U.S. and abroad. The United States response to the harmful effects of stratospheric ozone depletion is its commitment to honor the Montreal Protocol by phasing out domestic production of ozone-depleting substances (ODSs). EPA's role stems from the Protocol and Title VI of the Clean Air Act Amendments of 1990. EPA helps other countries find suitable alternatives to ODSs , informs the public about the dangers of overexposure to UV radiation, and uses pollution prevention strategies to require the recycling of ODSs and hydroflourocarbons.

Reduced risks from toxics, especially persistent organic pollutants and selected metals that circulate in the environment at global and regional scales, will be achieved by working with the Department of State and other countries to control the production and use or phaseout of targeted chemicals. EPA is also working to reach agreement on import and export requirements applicable to certain chemicals, an expansion of pollutant release and transfer registers and the harmonization

of chemical testing, assessment and labeling procedures. The goal of international harmonization of test guidelines is to reduce the burden on chemical companies of repeated testing in satisfying the regulatory requirements of different jurisdictions both within the United States and internationally. Harmonization also expands the universe of toxic chemicals for which needed testing information is available, and fosters efficiency in international information exchange and mutual international acceptance of chemical test data. For test guideline harmonization, EPA will continue to cooperate closely with other Federal agencies and the Organization for Economic Cooperation and Development (OECD) in harmonizing testing guidelines.

Internationally, the Agency will oversee the implementation of the of the global POPs convention and continue our efforts in reducing the use of leaded gasoline globally. Working with Canada, we are moving to reduce sulphur dioxide and nitrogen oxide emissions that cause acid rain, and protect shared ecosystems along our northern border. EPA will assess and report on the state of Key Great Lakes ecosystem components, provide current status and trend information and coordinate measurement of environmental indicators applicable to the entire Great Lakes Basin. Through open lake and nearshore sediments monitoring, and the joint Great Lakes National Program Office (GLNPO) Canadian integrated atmospheric deposition network reports will be issued on, or developed for, the 15 GLNPO "Monitoring Indices."

The U.S. is working with other OECD member countries to implement the International Screening Information Data Set (SIDS) program, a voluntary international cooperative testing program started in 1990. The program's focus is on developing base-level test information (including data on basic chemistry, environmental fate, environmental effects and health effects) for international high production volume chemicals. SIDS data will be used to screen chemicals and to set priorities for further testing and/or assessment. The Agency will review testing needs for 50 SIDS chemicals in 2000.

To reduce environmental and human health risks along the U.S./Mexico Border, EPA is working with the border states and Mexico in a multi-media approach targeted at air and water quality and hazardous waste management and disposal. Nine working groups will address key issues working closely with state and local agencies on both sides of the border. EPA will also support the financing and construction of wastewater treatment and solid waste facilities.

The Agency will focus attention on concern for children exposure to environmental tobacco smoke. The focus of the Agency's international program is to improve the protection of children's health from environmental threats by: prioritizing the research needs identified, seeking to allocate research among countries and international organizations, agreeing on timelines, and developing international reporting mechanisms. In addition, EPA is focusing on those Sub-Saharan Africa countries and specific sectors (i.e., refineries, mining companies, and stockpilers of agricultural chemicals) in those countries which are major contributors to globally circulating chemical/toxic risks, focusing on pesticides, mercury and lead.

Research

Research and assessment activities will examine the potential consequences of climate change for human health and ecosystems in three regions in the United States: the Mid-Atlantic, the Gulf of Mexico, and the Great Lakes regions. EPA will assess the possibility of changes in disease patterns due to changing climate, the impact of heat stress on populations, especially the elderly and children, and the socioeconomic consequences of extreme weather events, such as hurricanes, floods, and droughts. Researchers will also analyze the impact of climate change and variation on the ability of ecosystems to provide services that many of us rely on but often take for granted, such as water filtration and air purification. The outcome of these assessments will help inform decision making regarding strategies to address possible changes and variations in climate.

External Factors

The success of EPA's programs and activities under Goal 6 will depend on active participation by other nations: both developed and developing countries. Reduction of air, water, and waste problems along the U.S. border with Mexico will require continued commitment by national, regional and local environmental officials in that country. Similarly, EPA's efforts to reduce global and regional threats to oceans and the atmosphere will require active cooperation of other countries. Health and environmental benefits resulting from the multi-billion dollar investment by U.S. companies to reduce emissions of stratospheric ozone depleting compounds could be completely undone by unabated emissions of these chemicals in other countries. Fortunately, the Montreal Protocol on Substances that Deplete the Ozone Layer has secured the participation of most countries, including major producers and consumers of these chemicals.

While many factors outside of EPA or U.S. control determine a nation's willingness to participate in international environmental protection efforts (e.g., economic or political considerations within the country), EPA's international policy and technical exchange programs can play an important role in convincing particular nations of both the need and feasibility of participating. Other factors affecting EPA's programs under Goal 6 include continued Congressional and public support; cooperation with other Federal agencies, such as the State Department and the U.S. Agency for International Development; and collaboration with state and local groups, business and industry groups, and environmental organizations.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-Border Environmental Risks

Objective # 1: Reduce Transboundary Threats: Shared North American Ecosystems

By 2005, reduce transboundary threats to human health and shared ecosystems in North America, including marine and Arctic environments, consistent with our bilateral and multilateral treaty obligations in these areas, as well as our trust responsibility to tribes.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Reduce Transboundary Threats: Shared North American Ecosystems	**$120,392.3**	**$71,025.9**	**$119,987.5**	**$48,961.6**
Environmental Program & Management	$20,392.3	$21,025.9	$19,987.5	($1,038.4)
State and Tribal Assistance Grants	$100,000.0	$50,000.0	$100,000.0	$50,000.0
Total Workyears:	$83.0	$81.8	$81.8	$0.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Great Lakes National Program Office (CWAP)	$13,314.6	$14,614.6	$13,367.5
Water Infrastructure:Mexico Border	$100,000.0	$50,000.0	$100,000.0
U.S. - Mexico Border	$4,707.2	$10,642.8	$5,056.3
Partnership with Industrial and Other Countries	$1,642.0	$784.0	$816.1

FY 2000 Request

EPA's activities under this objective address transboundary environmental threats along the U.S. border areas, in shared North American ecosystems, as well as in the Great Lakes. Activities

focus on the U.S.-Mexico Border, the U.S.-Canada Border, the Great Lakes Program, and marine and Arctic environments.

U.S.-Mexico Border

Along the 2,000 mile U.S.-Mexico border, communities live side-by-side, sharing the benefits of rapid economic growth and the subsequent environmental problems. Today, there are more than 11 million border residents, a population that has doubled in the last 15 years. The effects of urban and industrial growth has contributed to the problems of inadequate environmental infrastructure. EPA's Mexico border area programs are designed to (1) improve air quality, (2) provide wastewater and drinking water services to under served communities, (3) manage chemical accidents, (4) support pollution prevention programs that will, over the long term, reduce the adverse health and environmental effects of pollutants, and (5) reduce and effectively manage hazardous and solid wastes. EPA's base programs will continue efforts in establishing air monitoring networks and completing emissions inventories in non-attainment areas. These are basic activities that must be done prior to developing strategies for improving air quality. The completion of joint chemical accident contingency plans in border sister cities will further reduce the risk to human health and ecosystems due to chemical spills. Working with sister cities and the Government of Mexico will greatly enhance the governments of the U.S.' and Mexico's ability to expand the use of tracking systems for hazardous waste shipments across the US-Mexico border, thus enabling more efficient and accurate tracking of waste, and providing a tool for enforcement of waste disposal regulations, decreasing the risk of exposure due to noncompliance.

A significant portion of residents along the U.S.-Mexico border area are without adequate basic services such as potable water and wastewater treatment and the problem has become progressively worse in the last few decades due to expanding urbanization. Identified wastewater infrastructure needs along the U. S./Mexico border are estimated to be $2.8 billion. The Agency has established a goal of 34 high priority projects to have been certified for design-construction by the end of 2000. Within this objective, the Agency is requesting $100,000,000 to support these efforts, largely through the Border Environmental Infrastructure Fund (BEIF). The Agency will cooperate with its Mexican counterpart agencies to implement the provisions of the LaPaz Agreement and the Border XXI Framework Document which provide a long term strategy to improve public health and the environment and protect essential natural resources in the border. Nine binational working groups will address key issues working closely with state and local agencies on both sides of the border. EPA will also work closely with the Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADBank), which manages the BEIF, to support the financing and construction of water and wastewater treatment and solid waste facilities. EPA is proposing $1,000,000 for the U.S.-Mexico Foundation for Science in cooperation with the programs, activities and projects of the BECC, NADBank, International Boundary and Water Commission (IBWC) and the Mexican Combustion Nacional de Agua.

Great Lakes

Within this objective, EPA is requesting $13,494,800 and 46.2 total workyears for the Great Lakes National Program Office (GLNPO) and supporting Great Lakes activities. The Great Lakes Basin is home to 33 million people, including more than one-tenth of the population of the United States. It contains some of the world's largest concentrations of industrial capacity and, at the same time, is the largest system of fresh, surface water on earth, containing 20% of the world's supply. The effects of years of urban and industrial growth necessitate efforts to reduce pollution from toxic substances, with an emphasis on persistent, bioaccumulative substances, and to protect and restore vital habitats and biological integrity. The Agency's Great Lakes National Program Office steers and coordinates these efforts through implementation of an ecosystem approach in the Great Lakes among its Federal, state, tribal, and local partners, fully implementing a "community-based" approach. GLNPO and its partners will act consistently with goals of the Great Lakes Five Year Strategy and the Agency's Strategic Plan.

EPA will assess and report on the state of key Great Lakes ecosystem components, make current status and trend information available to Great Lakes environmental managers, and coordinate measurement of environmental indicators applicable to the entire Great Lakes Basin. Through open lake and nearshore sediments monitoring, and the joint GLNPO/Canadian integrated atmospheric deposition network (including air monitoring stations on each Great Lake), reports will be issued on, or developed for, 9 of the proposed 12 GLNPO "Monitoring Indices." The Indices will summarize the prior year's data on select fish contaminants, atmospheric deposition, limnology, biology, and sediments, thus providing state and Federal environmental managers with information for decision-making and providing the public with understandable information about the environmental condition of the Great Lakes. GLNPO will adjust its monitoring program to implement indicators monitoring consistent with the Indices and with indicators identified through the process developed for the biennial State of the Lakes Ecosystem Conference (SOLEC). SOLEC brings together representatives of the public and private sectors to facilitate decision-making based upon sound environmental information. GLNPO will report model predictions for Lake Michigan toxic reduction scenarios from the multi-media initiative for the first-ever intensive monitoring of Lake Michigan air, water, sediments, and biota (the Lake Michigan Mass Balance Study, or "LMMB"), supporting the Great Waters provision of the Clean Air Act and §118 of the Clean Water Act. This will enable the Agency and its partners to determine how to further reduce Great Lakes pollutants and will provide trend and baseline data to support and target remedial efforts and measure environmental progress under Remedial Action Plans and Lakewide Management Plans. EPA will also expand public access to LMMB and other Great Lakes environmental information via the Internet.

EPA will work with Environment Canada and lead domestic partners in implementing the Great Lakes Binational Toxics Strategy, signed in 1997. The Strategy, a ground breaking international toxics reduction effort, targets a common set of persistent, toxic substances for reduction and virtual elimination from the Great Lakes. It focuses on pollution prevention efforts, using voluntary and regulatory tools to achieve reductions, and contains reduction challenges for a targeted set of substances, e.g., mercury, PCBs, dioxins/furans, and certain canceled pesticides. Actions and activities are outlined in the Strategy which states, industry, tribes, non-government organizations and other stakeholders may undertake to achieve these reductions. Each targeted

substance will be addressed at the appropriate phase of an analytical framework which consists of information gathering, analysis of current regulations/initiatives, identification of options and implementing reduction actions. Grants to stakeholders (such as the Great Lakes States, Tribes and environmental groups for mercury or PCB reduction projects) will help to achieve some of the reduction targets. Progress will be documented. Implementation of the Strategy will be coordinated with and augmented through cross-Agency support and activities relating to its 1999 Persistent Bioaccumulative Toxics Initiative.

EPA, with its partners, will continue to address the contaminated sediments polluting the harbors of the 31 U.S. and/or binational Areas of Concern (AOCs) in the Great Lakes. Using expertise from the Congressionally mandated Assessment and Remediation of Contaminated Sediments program, GLNPO uses its Research Vessel (R/V) Mudpuppy and other resources to visit sites and assess sediments, returning as needed for finer scale assessment and remedial design. If a community then chooses to remediate the sediments, GLNPO can conduct a sediment site cleanup demonstration. In 2000, GLNPO will assist communities with assessments and remedial design at 5 AOCs, thus having provided this assistance at 25 AOCs since this program began. Two of the AOCs will be visited for the first time. GLNPO will complete 1sediment cleanup demonstration, bringing the total cleanups to 4 since 1996.

The Agency will support the efforts of States, Tribes, and local communities to protect and restore important habitats identified in the Great Lakes biodiversity report of The Nature Conservancy (TNC) and SOLEC habitat papers. The program emphasizes habitats important for biodiversity and ecological integrity (such as those necessary for endangered and threatened species). Additional projects for ecological enhancement will start in nearshore waters, coastal wetlands, river corridors, and terrestrial lands. The projects will implement measures to protect ecological communities and biodiversity or take steps to restore ecological functions and processes.

EPA, Regions, States, and local communities will strategically target reductions of critical pollutants through Remedial Action Plans for Areas of Concern and through Lakewide Management Plans for Lakes Ontario, Michigan, Superior, and Erie. The Agency will continue to meet specific requirements for reporting to Congress and the International Joint Commission regarding progress under the Great Lakes Water Quality Agreement.

Marine and Polar Environments

Within this objective, the Agency is requesting $524,600 for international activities protecting our most northern borders and marine environments. The focus of the base program is the protection of those resources in the marine and polar environments that are important to the United States and other countries. More specifically, the programs will reduce environmental damages associated with tributlytin, ballast water discharges, and ocean dumping. In addition, on-going efforts to address land-based sources of marine pollution in the Wider Caribbean should result in improvements in regional water quality and marine habitats that include economic benefits to significant commercial interests in the Region. Finally, our involvement in multilateral negotiations is critical to maintain needed flexibility in domestic rulemaking and other environmental policy mechanisms.

The 2000 performance goals address activities relating to long-term achievement of the objective. The first pertains to the conclusion of negotiations on a regional agreement addressing land-based marine pollution; the second concerns different global negotiations underway through the International Maritime Organization. The combination of these goals represent incremental components in seeking to prevent significant degradation of the marine and polar environments over the long-term. Completion of the regional protocol on land-based marine pollution will provide the first instrument in the Wider Caribbean for establishing international norms for specific contaminants and effluents. Achievement of our goals in negotiations underway at the International Maritime Organization will enhance the effectiveness of existing domestic environmental controls and reduce pollution of U.S. waters resulting from international shipping.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$52,900) to reflect a payroll cost of living adjustment and regional travel increase for the Great Lakes National Program Office.

- (+$159,000) to reflect a payroll cost of living increase and a modest increase to support activities associated with hazardous waste disposal along the US- Mexican border.

- The 2000 Request is $1,300,000 below the 1999 Enacted budget level due to Congressional earmarks received during the appropriations process but not part of the 2000 President's Request.

STAG

- (+$50,000,000) to the Mexico Border Infrastructure Program. This reflects the Administration's commitment for funding infrastructure needs along the U.S./Mexican Border.

Annual Performance Goals and Performance Measures

Air Monitoring Networks

In 2000	Complete air monitoring networks for 3 of the 7 non-attainment areas along the US/Mexican border.
In 1999	Complete emissions inventories for 5 of the 7 non-attainment areas along the US/Mexican border.

Performance Measures	FY 1999	FY 2000
Number of non-attainment areas along the border with emission inventories	5 inventories	
Number of non-attainment areas along the border with air monitoring networks		3 areas

Baseline: Seven non-attainment areas along the Mexico border.

U.S.-Mexico Border Water/Wastewater Infrastructure

In 2000 9 additional water/wastewater projects along the Mexican border will be certified for design-construction for a cumulative total of 34 projects.

In 1999 1 additional water/wastewater projects along the Mexican border will be certified for design-construction.

Performance Measures	FY 1999	FY 2000
Projects certified for design-construction along the Mexican Border	1 Projects	
Additional water/wastewater projects along the Mexican border certified for design/construction.		9 Projects

Baseline: As of June 1998, a cumulative total of 24 Mexican border projects were either certified for design/construction or had received grants or IAGs.

Great Lakes: Ecosystem Assessment

In 2000 Assess and report on the state of key Great Lakes ecosystem components, report current status and trend information to Great Lakes environmental managers, and coordinate measurement of SOLEC environmental indicators applicable to the entire Great Lakes Basin.

In 1999 Assess and report on the state of Great Lakes ecosystem components, make current status and trend information available to Great Lakes environmental managers, and coordinate measurement of SOLEC environmental indicators applicable to entire Great Lakes Basin.

Performance Measures	FY 1999	FY 2000
Develop protocols for 5 of a proposed 15 GLNPO Monitoring Indexes, summarizing the prior year's data on select fish contaminants, atmospheric dep., limnology, biology, & sediments.	5 Protocols	
Model predictions for Lake Michigan for toxics reduction scenarios.		5 Predictions
Reports on 9 of the proposed 12 GLNPO Monitoring Indexes, summarizing the prior year's data on select fish contaminants, atmospheric deposition, limnology, biology, and sediments.		9 Indexes

Baseline: Although GLNPO has assessed and reported on Great Lakes conventional pollutants, toxics, air deposition, and ecosystem indicators and components (particularly plankton and fish contaminants) since the 1970's and 1980's, that data has not previously been routinely

Baseline(cont) summarized and reported. In FY2000, the Great Lakes program will establish a baseline using thee FY1999 data; consequently, the current baseline is zero.

Great Lakes: Binational Toxics Strategy

In 2000 Documented reductions or progress which fulfills challenges under the Binational Toxics Strategy (BNS).

In 1999 Documented reductions or progress which fulfills challenges under the Binational Toxics Strategy (BNS).

Performance Measures	FY 1999	FY 2000
Catalog and publicize actions (partnerships or virtual elimination demonstration projects) toward reduction challenges under BNS.	3 Actions	
Great Lakes Projects initiated in support of toxics reduction	11 Projects	
Number of catalogued and publicized actions (partnerships or virtual elimination demonstration projects) initiated toward reduction challenges under BNS.		10 Actions
Completion and documentation of BNS analytical process for each of the Level 1 chemicals. Process includes info. gathering, analysis of reg. gaps, recommendations, & options for reductions		100 % Completion

Baseline: The Canada - U.S. Binational Toxics Strategy (BNS) was signed in 1997. The BNS Implementation Plan was developed and completed in 1998. Pursuant to the BNS challenge goals, three reports (octachlorostyrene, five cancelled pesticides, and alkyl-lead) will be completed by end of 1998. The baseline for actions toward BNS reduction is zero in 1997 (the date at signature of the Canada-U.S. BNS). 3 actions were initiated by FY99 and a cumulative total of 10 will be underway in the year 2000. In 1997, the BNS established challenge goals for mercury, octachlorostyrene, pesticides, alkyl-lead, PCBs, Dioxins, and HCB/B(a)P. At that time, a single report on mercury was substantially complete. Drafts of three reports (octachlorostyrene, pesticides, and alkyl-lead) have since been completed. Reports pertaining to the remaining challenge goals (PCBs, Dioxins, and HCB/BaP) are scheduled for FY2000.

Great Lakes: Contaminated Sediments

In 2000 Support state/community clean-up of contaminated sediments by sediment assessment and characterization(at sites in 1 new AOC, thus having visited 25 of 31 US AOCs) and by sediment cleanup demonstrations.

In 1999 Support state/community clean-up of contaminated sediment by sediment assessment/ characterization(at a site in 1 new AOC, thus having visited 24 of 31 US AOCs) and by sediment cleanup demonstrations

Performance Measures	FY 1999	FY 2000
Great Lakes sediment cleanup demonstrations completed		4 Demonstration
Assessments and characterizations at Great Lakes Areas of Concern	5 Assessments	5 Assessments

Performance Measures(continued)	FY 1999	FY 2000
Cumulative total (out of 5 started since 1996) of sediment cleanup demonstrations completed.	3 Cleanup demos	

Baseline: By 1998, GLNPO has assisted Great Lakes communities in addressing contaminated sediments through assessments and characterizations at 21 Great Lakes Areas of Concern. In 1998, GLNPO completed 1 sediment site cleanup demonstration.

Great Lakes: Habitat Protection

In 2000 Aquatic, wetland, riverine, and terrestrial habitat protection & restoration projects funded by GLNPO will impact an additional 6,000 acres.

In 1999 Habitat protection and restoration proj will begin positive ecological impacts on 23% (cumulative) of the Basin's total land area. Ecolog. enhancements will occur at 5 of the 14 US terrestial biodiversity investment areas. Biodiversity investment areas will be identified for coastal wetlands/aquatic areas.

Performance Measures	FY 1999	FY 2000
Projects and acreage ecologically enhanced in terrestrial biodiversity investment areas	6,000 Projects/Acres	
Aquatic, wetland, riverine, and terrestrial habitat projects funded by GLNPO.		5 Projects
Aquatic, wetland, riverine, and terrestrial habitat acres impacted by GLNPO habitat protection and restoration projects.		6,000 Acres
Set of quantifiable targets for ecological enhancement in aquatic biodiversity investment areas.	1 Set	

Baseline: Baseline for projects: GLNPO funded 20 habitat protection and restoration projects in 1997, bringing the total number of projects funded since 1992 to 109 and the cumulative number of acres impacted to more than 18 million acres. The positive ecological impacts on Great Lakes ecosystem, including the number of projects and acreage, will be assessed in 1999. Baseline for acres: beginning with a baseline of zero projects and acreage in 1992, the Great Lakes National Program Office has since funded 109 projects which, according to grantee reports through 1997, are beginning to have a cumulative positive impact on more than 18 million acres (out of a total of 136 million acres of land and nearshore waters in the Great Lakes ecosystem). "Positive ecological impact" means measures are implemented to protect ecological communities and biodiversity or steps are taken to restore ecological functions and processes.

Marine and Polar Environments

In 1999 Complete construction of prototype for transportable containment system for spent & damaged nuclear fuel from decommissioned Russian submarines;start

In 2000 Complete testing and certification of a prototype 40 ton spent nuclear fuel storage cask for use in NW Russia that meets international guidelines and internal Russian Federation standards.

Performance Measures	FY 1999	FY 2000
Complete construction of cask containment system prototype	9/30/99/Report	
A prototype spent nuclear fuel storage cask is certified for use in Russia by Russian Federation Nuclear and Environmental Authorities.		9/30/2000 Certification

Baseline: Development of two spent nuclear fuel casks.

Verification and Validation of Performance Measures

Data on the effective functioning of the Mexico Border Infrastructure Program are collected via quarterly reports from EPA Regions 6 and 9.

Performance measures for the Great Lakes program are derived from open lake measurements taken by GLNPO and from annual programmatic analysis of activities pursuant to the Great Lakes Water Quality Agreement, the Binational Toxics Strategy, and the GLNPO programs for information management, sediments, and habitat. Individual projects which generate data are required to comply with the Agency's standards for quality assurance and control. LMMB project data is entered into the Great Lakes Environmental Monitoring Database (GLENDA). A QA/QC tracking system is in place to ensure that QA/QC requirements are part of all applicable GLNPO projects. GLNPO uses its annual planning process as a check on indirect performance measures such as improved planning, coordination and communication. The GLNPO performance measures are written into Great Lakes State Environmental Performance Partnership Agreements as commitments. GLNPO provides the states with assessments of progress against those commitments. Under the GLNPO structure, each of the GLNPO programs conducts an end of year review of its progress regarding identified measures and activities, draws conclusions, and makes recommendations to management regarding the subsequent year's activities and measures. Management ultimately determines what the activities and measures will be for the succeeding year.

Coordination with Other Agencies

Mexican Border - BECC, NADBank, IBWC

Over the last several years, US EPA has continued to work with the US and Mexican Sections of the International Boundary and Water Commission to further our efforts to improve water and wastewater services to communities within 100 km of the US - Mexico Border. Recently, the IBWC and US EPA have been involved in joint efforts to plan, design and construct six water and wastewater facilities in the Border region.

The Governments of Mexico and the United States agreed, in November 1993, on arrangements to assist communities on both sides of the border in coordinating and carrying out environmental infrastructure projects. The new agreement furthers the goals of the North American Free Trade Agreement and the North American Agreement on Environmental Cooperation.

To this purpose, the governments established two international institutions: 1. Border Environment Cooperation Commission (BECC), with headquarters in Ciudad Juarez, Chihuahua, México, to assist local communities and other sponsors in developing and implementing environmental infrastructure projects, and to certify projects for North American Development Bank financing; and 2. North American Development Bank (NADBank), with headquarters in San Antonio, Texas, capitalized in equal shares by the United States and Mexico, with an authorized capital of $3,000 million dollars, to provide new financing to supplement existing sources of funds and foster the expanded participation of private capital. Currently, US EPA has placed $170 million of its Border grant funds (Border Environmental Infrastructure Fund, BEIF) with the NADBank.

Great Lakes

Pursuant to the mandate in Section 118 of the Clean Water Act to "coordinate action of the Agency with the actions of other Federal agencies and State and local authorities...," GLNPO is engaged in extensive coordination efforts with State, Tribal, and other Federal agencies, as well as with our counterparts in Canada. In 1991, EPA joined States and Federal agencies that have stewardship responsibilities for the Lakes in developing a shared five year strategy. In addition to the eight Great Lakes States, partners to the plan include the Army Corps of Engineers (Corps), the Coast Guard, the Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA), and the Natural Resources Conservation Service (NRCS). The strategy joins environmental protection agencies with natural resource agencies in pursuit of common goals. These partners envision updates that will keep the strategy a current, action-forcing document that targets different problems in succession. These same organizations and the Great Lakes Tribes also meet at GLNPO's annual Great Lakes Planning Meeting to plan and prioritize near term activities. GLNPO monitoring involves extensive coordination among these partners, both in terms of running the monitoring program, and in utilizing results from the monitoring to manage environmental programs. GLNPO's sediments program works closely with the States and the Corps regarding dredging issues. Implementation of the Binational Toxics Strategy involves extensive coordination with Great Lakes States. GLNPO works closely with States, Tribes, FWS, and NRCS in addressing habitat issues in the Great Lakes. GLNPO also coordinates with these partners regarding development and implementation of Lakewide Management Plans for each of the Great Lakes and for Remedial Action Plans for the 31 US/binational Areas of Concern.

Statutory Authorities

Clean Water Act
Clean Air Act
Toxic Substances Control Act
Resource Conservation and Recovery Act
Pollution Prevention Act
North American Free Trade Agreement
1997 Canada-U.S. Great Lakes Binational Toxics Strategy
1996 Habitat Agenda
1990 Great Lakes Critical Programs Act
1987 Great Lakes Water Quality Agreement

Goal 8: Sound Science, Improved Understanding of Environmental Risks, and Greater Innovation to Address Environmental Problems VIII-1
Research for Ecosystem Assessment and Restoration VIII-11
Research for Human Health Risk Assessment VIII-23
Emerging Risk Issues VIII-35
Pollution Prevention and New Technology VIII-43
Increase Use of Integrated, Holistic, Partnership Approaches VIII-53
Increase Opportunities for Sector Based Approaches VIII-57
Regional Enhancement of Ability to Quantify Environmental Outcomes VIII-63
Science Advisory Board Peer Review VIII-65
Incorporate Innovative Approaches to Environmental Management VIII-69

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems

Strategic Goal: EPA will develop and apply the best available science for addressing current and future environmental hazards, as well as new approaches toward improving environmental protection.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Sound Science, Improved Understanding of Env. Risk and Greater Innovation to Address Env. Problems	**$322,661.8**	**$346,996.2**	**$321,747.4**	**($25,248.8)**
Research for Ecosystem Assessment and Restoration	$106,489.4	$111,978.7	$118,553.3	$6,574.6
Research for Human Health Risk Assessment	$57,063.6	$50,573.7	$56,229.1	$5,655.4
Research to Detect Emerging Risk Issues	$61,639.2	$56,648.8	$49,806.9	($6,841.9)
Pollution Prevention and New Technology for Environmental Protections	$54,246.4	$77,286.3	$55,801.7	($21,484.6)
Enable Research on Innovative Approaches to Current & Future Env Problems - NOT IN USE	$0.0	$0.0	$0.0	$0.0
Increase Use of Integrated, Holistic, Partnership Approaches	$16,810.5	$16,390.5	$16,663.8	$273.3
Increase Opportunities for Sector Based Approaches	$11,496.8	$21,091.9	$10,018.5	($11,073.4)
Regional Enhancement of Ability to Quantify Environmental Outcomes	$7,995.1	$6,505.5	$7,659.8	$1,154.3
Science Advisory Board Peer Review	$2,586.7	$2,486.7	$2,636.2	$149.5
Incorporate Innovative Approaches to Environmental Management	$4,334.1	$4,034.1	$4,378.1	$344.0
Total Workyears:	1,212.1	1,194.2	1,187.3	-6.9

Background and Context

Science allows us to identify the most important sources of risk to human health and the environment, and thereby guides our priorities, policies, and deployment of resources. Science provides the understanding and technologies needed to detect, abate, and avoid environmental problems.

In the future, environmental problems will be addressed using those features of the current system that have proven effective and by designing and testing fundamentally new tools and approaches that utilize the latest advances in scientific knowledge and technology.

Means and Strategy

EPA has several strategies to strengthen the scientific basis for environmental protection and develop innovations that will allow achievement of our strategic objectives. The Agency has implemented a risk-based research planning process to use risk assessment and risk management as principal priority-setting criteria. EPA conducts annual research program reviews to both evaluate the status and accomplishments of its research and determine strategic planning priorities.

In FY 2000, EPA will continue the Agency's Postdoctoral Initiative, begun in 1998, to enhance our intramural research program. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues. For FY 2000, new post-doctoral candidates will be recruited to: (1) strengthen our ability to meet the scientific challenges of the next several years; (2) bring a fresh scientific perspective and new energy to our highest priority research and development programs by working with experienced ORD Principal Investigators; (3) work in critically important areas such as human exposure modeling in particulate matter and ecological risk assessment; and (4) improve our workforce diversity. Post-doctoral resources are spread throughout the FY 2000 budget.

To better draw upon expertise of the environmental academic community, EPA created the Science to Achieve Results (STAR) Program of peer reviewed, mission-driven extramural grants. The Agency is also working with the National Research Council to identify emerging environmental issues for which we must begin planning the necessary research. EPA's research program will increase the understanding of environmental processes and the capability to assess environmental risks not only to human health, but also to ecosystems.

The emphasis of ecological monitoring research will shift from a Mid-Atlantic integrated assessment of ecosystem health to a Western Pilot demonstration of methods developed in the Mid-Atlantic. In addition, the Coastal Monitoring Initiative beginning in 2000 will fund the first national demonstration of the status and trends monitoring of the health of U.S. estuaries. Knowing the current conditions of these ecosystems, how best to measure those conditions, and what problems exist are important parts of this effort and will provide essential input to the modeling and

assessment elements of the program. Process and modeling research will seek to explain stressors and their effect on an ecosystem, as well as the way in which they cause that effect.

EPA is also committed to developing and verifying innovative methods and models for assessing the susceptibilities of populations to environmental agents, aimed at enhancing current risk assessment and management strategies and guidance. In response to the heightened awareness and concern over children's health risks and the provisions of the new legislation on food safety, EPA established the Children's Health Research Program. In collaboration with the National Institute for Environmental Health Sciences (NIEHS), EPA has established eight university-based research centers to study the unique environmental risks that threaten the health of our children, with research focusing on childhood asthma and developmental disorders. The 2000 research program includes plans to establish one additional center focused on children's health research to conduct basic and applied research in combination with community-based prevention efforts that focus on identifying and preventing environment-related diseases in children. This center will look at non-asthma related research issues including developmental disorders. Agency research efforts for asthma are part of the interagency work under the President's Task Force on Environmental Health Risks and Safety Risks to Children.

The Agency will establish research capability and mechanisms to anticipate and identify environmental or other changes that may portend future risk. A clear vision of future environmental risk will enable EPA to manage strategically for tomorrow and tactically for today. Substantial capability to discern early warnings and patterns of change will be developed through work undertaken on endocrine disruptors. Benefits will include an improved framework for decision-making, increased ability to anticipate and perhaps deter serious environmental risks, and enhanced communication with the public and other stakeholders.

In order to promote decisions which place pollution prevention as the first solution among many, research will focus on the development of methods and decision tools that are more quantitative and easier for stakeholders and decision-makers to use than those currently available. Research on pollution prevention technology and approaches will accelerate the adoption and incorporation of pollution prevention by developing, testing, and demonstrating techniques applicable across economic sectors. This research will test the ability of risk assessors and risk managers to develop tools and methodologies which are meaningful and understandable to the public in terms of the costs and benefits associated with the magnitude of the risk reduction options.

A key element of EPA's strategy for reinvention is testing and adopting innovative policy tools designed to achieve better protection at less cost. The Agency has a number of new tools and approaches that are being tested or implemented in various environmental programs, including: market trading and banking, third party certification of environmental performance, and recognition and incentives for environmental stewardship. In each area, EPA is looking to advance the application of the innovative tool or approach by promoting broader testing and incorporation into our system of environmental protection. For example, EPA's Permit Action Plan outlines a broad strategy for building the next generation of environmental permitting. This strategy will harmonize

requirements across media, and will make permitting more accessible to the public and more flexible for facilities.

Sector strategies complement current EPA activities by allowing the Agency to approach issues more holistically; tailor efforts to the particular characteristics of each sector; identify related groups of stakeholders with interest in a set of issues; link EPA's efforts with those of other agencies; and craft new approaches to environmental protection.

Sustainable industry programs serve as incubators and developers of innovative approaches to environmental policy making, testing alternative regulatory and programmatic approaches through regional projects, and multi-stakeholder processes. The experience gained in working with six industry sectors on the Common Sense Initiative provides the basis for moving forward with sector-based approaches to environmental protection.

Also, President Clinton created Project XL in March 1995 to provide regulated entities and other stakeholders with the opportunity to develop and implement alternative environmental management strategies that achieve superior environmental performance in exchange for regulatory flexibility. Sector-based approaches will offer valuable supplements to traditional environmental policy and may become the predominant means for environmental protection in the 21st century.

Nearly 7,000 businesses, trade association, citizens groups, state and local governments, and universities are volunteering to improve environmental performance in a timely, cost-effective way through an array of EPA partnership programs. Known collectively as Partners for the Environment, these programs complement traditional regulatory approaches to environmental protection.

Partners set practical, meaningful goals to improve and better protect the environment -- from conserving water and energy to reducing hazardous emissions, waste, and pesticide risks. These efforts are good for the environment, make good business sense, and prove that pollution prevention pays.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Research for Ecosystem Assessment and Restoration

By 2000 Report on monitoring findings in the Mid-Atlantic Region as a cost effective means of measuring the condition of these systems.

Objective 02: Research for Human Health Risk Assessment

By 2000 Develop risk assessment guidance and regional assessments concerning risks to children exposed to environmental contaminants.

Objective 03: Research to Detect Emerging Risk Issues

By 2000 Develop tools to identify hazards and formulate strategies to manage risks from exposure to endocrine disrupting chemicals capable of inducing adverse effects in humans and wildlife.

Objective 04: Pollution Prevention and New Technology for Environmental Protections

By 2000 Complete development of one or more computer-based tools which simulate product, process, or system design changes, and complete proof-of-process structure for one or more generic technologies (appl. to >1 env. problem) to prevent or reduce pollution in chemicals and industrial processes.

Objective 06: Increase Use of Integrated, Holistic, Partnership Approaches

Objective 07: Increase Opportunities for Sector Based Approaches

By 2000 All 50 Project XL projects will be implemented.

Objective 08: Regional Enhancement of Ability to Quantify Environmental Outcomes

Objective 09: Science Advisory Board Peer Review

Objective 10: Incorporate Innovative Approaches to Environmental Management

Highlights

Research is an important aspect of the Agency's mission and ensures a strong scientific foundation for the process of identifying public health and environmental issues and the approaches taken to address them. EPA's FY 2000 Annual Plan proposes a robust program which continues to support its commitment to developing and applying the best available science for addressing current and future environmental hazards, as well as new approaches toward improving environmental protection.

Ecosystems Protection Research

Natural ecosystems provide valuable services and resources to the public, such as air and water purification, flood control, raw materials for manufacturing and industrial processes, food, as well as less tangible benefits such as recreation. Many human activities alter or damage ecosystems and their ability to provide these goods and services. In order to balance the growth of human activity and the need to protect the environment, it is important to understand the current condition of ecosystems, what stressors are changing that condition, what are the consequences of those

changes, and what can be done to prevent, mitigate, or adapt to those changes. EPA's ecosystems protection research is organized in four main areas to address these questions: ecological monitoring, modeling, risk assessment, and risk management.

Ecological monitoring research addresses the question, "What is the current condition of the environment, and what stressors are most closely associated with that condition?" To do this, researchers develop indicators, monitoring systems, and designs for measuring the exposures of ecosystems to multiple stressors and the response of ecosystems at local, regional, and national scales. In FY 2000, the Coastal Research Initiative will provide EPA with baseline and trend analyses for important data gaps such as the aquatic health of our nation's estuaries.

Process and Modeling Research addresses the question, "What are the biological, chemical, and physical processes affecting the condition of ecosystems and their response to stressors?" Drawing from information gathered by monitoring efforts, process and modeling research develops a basic understanding of the processes that govern ecosystem function, and the technology to model those processes. This modeling ability allows for predictions of future landscapes, stressor patterns, ambient conditions, and receptor responses. Predicting the impact of changes in conditions allows resource managers to address problems in ways that will more accurately achieve the environmental protection goals they seek.

Risk Assessment Research addresses the question, "What is the relative risk posed to ecosystems by stressors, alone and in combination, now and in the future?" Ecological assessments can link stressors with consequences and evaluate the potential for damage to particular ecosystems. This is a valuable tool for environmental risk managers at local, state, and federal levels, enabling them to link high priority ecosystems with ecosystems at high risk. EPA's research efforts in support of the National Science and Technology Council's Integrated Science for Sustainable Ecosystems Initiative will develop methods and models to integrate socioeconomic analysis with landscape ecology and ecological risk assessment and give EPA, state, and local community-based environmental partners capability to identify the most significant environmental stress and select risk reduction alternatives to improve or sustain biological and chemical water quality in streams, rivers, and estuaries. This program will also develop a capacity to evaluate and measure the success or failure of policies in sustaining or improving ecosystem health.

Risk Management and Restoration Research addresses the question, "What options are available to manage the risk to, or to restore, degraded ecosystems?" Given the rate of development of the man-made environment, present regulatory approaches may not always limit risks to vulnerable ecosystems to tolerable levels. There is a need to develop new, cost-effective prevention, control, and remediation approaches for sources of stressors, and adaptation approaches for ecosystems.

Research to Improve Human Health Risk Assessment

Advances in the state of environmental science have illustrated that new risk assessment methods are needed to investigate complex environmental and human health issues that were not

considered by early environmental legislation. Creating a strong scientific foundation for risk assessment and for subsequent risk management decisions requires research to reduce significant areas of scientific uncertainty. In recent years, a number of national scientific advisory groups have developed specific recommendations to assist in strengthening this foundation. EPA has identified three major areas of uncertainty as the focus for its Human Health Risk Assessment Research Program: 1) human exposure measurements and models; 2) identifying/characterizing hazards and assessing dose response; and 3) characterizing and assessing variation in human exposure and susceptibility to disease. Because substantial uncertainties are associated with these areas, resolution will greatly advance the science of human health risk assessment.

Research on human exposure measurements and models will focus on demonstrating a model to assess, predict, and diagnose the population distribution of multi-media, multi-pathway exposures to major classes of environmental agents. Human exposure measurement research will continue to develop, demonstrate, and evaluate human exposure measurement and surveillance through the National Human Exposure Assessment Survey (NHEXAS) program and the Borders XXI (NAFTA) program. Research to develop multipathway exposure models will continue to develop, demonstrate, and evaluate measurement-based models that represent multi-pathway source-exposure-biomarker-dose relationships and the physical and chemical factors that affect potential and absorbed dose. Research on residential pesticides will continue to focus on methods to significantly improve our understanding of the extent of human exposure to specific pesticides and toxic substances.

Research to identify/characterize hazards and assess dose response addresses both qualitative (hazard identification) and quantitative (dose-response analysis) concerns associated with current risk assessments. This research will focus on providing mechanistically-based data, tools, and approaches for more quantitative and biologically defensible human health risk assessments.

Research to characterize/assess variation in human exposure and susceptibility to disease has strong support from national scientific advisory organizations, the Administration and Congress. EPA is also committed to developing and verifying innovative methods and models for assessing the susceptibilities of populations to environmental agents, aimed at enhancing current risk assessment and management strategies and guidance. In collaboration with the National Institute for Environmental Health Sciences (NIEHS), EPA has established eight university-based research centers to study the unique environmental risks that threaten the health of our children, with research focusing on childhood asthma and developmental disorders. The 2000 research program includes plans to establish one additional center focused on children's health research to conduct basic and applied research in combination with community-based prevention efforts that focus on identifying and preventing environment-related diseases in children. This center will look at non-asthma related research issues including developmental disorders. Agency research efforts for asthma are part of the interagency work under the President's Task Force on Environmental Health Risks and Safety Risks to Children.

Emerging Risks Research

In 2000, research on emerging environmental risk will respond directly to the recommendations of numerous external advisory panels, including the Committee on Research Opportunities and Priorities for EPA under the National Academy for Public Administration, and EPA's Science Advisory Board. Our goal is to establish a clear vision of future environmental risk which will enable EPA to manage strategically for tomorrow and tactically for today. Benefits will include an improved framework for decision-making, increased ability to anticipate and perhaps deter serious environmental risks, and enhanced communication with the public and other stakeholders.

Evidence has been accumulating that humans and domestic and wildlife species have suffered adverse health consequences resulting from exposure to environmental chemicals that interact with the endocrine system, known as endocrine disruptors (EDC). EPA has developed the Endocrine Disruptor Research Strategy for addressing areas of major uncertainty. In 2000, the highest priority areas of the Endocrine Disruptor Research Strategy will be: conducting integrated toxicology and exposure studies in ecological systems or human populations with suspected contamination or exposure; the development of PBPK/BBDR models; the identification of major sources of EDCs entering the environment; and the development of tools for risk management. The program will also continue to investigate the nature and extent to which environmentally relevant exposures to chemicals are producing adverse effects in humans and wildlife species.

We will continue to maintain a strong graduate fellowship program which was initiated in 1995 for the purpose of training the next generation of scientists and engineers. By providing support for masters and doctoral students in environmental sciences and engineering, EPA helps to develop the Nation's environmental and technology base for addressing the environmental concerns in the next century. The Exploratory Grants research program generates new ideas and produces new scientific information by encouraging creativity and innovation in scientific research. Through publication of an annual general solicitation, the program defines general areas in which there exist significant gaps in scientific knowledge and understanding, and allows individual investigators from the academic research community to conceive, define, and propose research projects.

Pollution Prevention and New Technologies

EPA supports pollution prevention as a necessary and logical strategy for dealing with high-risk human health and environmental problems that are addressed by Federal environmental, health, and safety regulations. In order to promote decisions which place pollution prevention as the first solution among many, research must begin to focus on the development of methods and decision tools that are more quantitative and easier for stakeholders and decision makers to use than those currently available. Two areas of research contributing to the achievement of the objective's goals are: 1) the Environmental Technology Verification (ETV) program; and 2) the Mercury Initiative.

ETV was created to substantially accelerate the introduction of new environmental technologies into the domestic marketplace. In 2000, the program will support the development and

implementation of innovative approaches for current and future environmental problems. As a result of the interest in the ETV program abroad, EPA will expand the application of U.S. technologies, verified under ETV, to the international marketplace. ETV will also continue in this effort under its twelve pilots; complete the last year of its 5 year pilot phase (1995-2000); and begin preparation of a report to Congress for 2001. The report will contain a summary of the major outputs of the pilot phase, the costs of verification, the results of verification in moving better technologies into use, and recommendations for procedures to effectively conduct an ongoing program.

Mercury research will focus on the speciation and control of mercury emissions from coal-fired utilities and other combustors, risk management alternatives for non-combustion sources of mercury, and a continuing emphasis on collecting and analyzing data and information on mercury risks and mercury risk communication. Improved techniques for controlling mercury emissions into the environment will allow the Agency to achieve its programmatic and regulatory goals and meet an accelerated time table for reducing mercury releases.

Increased Community-Based Approaches

In 2000, EPA will continue to strengthen local partnerships to address serious environmental risks to human health or ecosystems. Regional Geographic Initiatives (RGI) are an approach EPA Regional offices use to partner with states, local governments, private organizations, and others. The work targets specific environmental problems identified as high risk to human health and ecosystems which are not adequately addressed by other Agency resources.

Increased Facility-and Sector-based Strategies

EPA's strategy for reinvention is testing and adopting innovative policy tools designed to achieve better protection at less cost. The Agency has a number of new tools and approaches that are being tested or implemented in various environmental programs, including: market trading and banking, third party certification of environmental performance, and recognition and incentives for environmental stewardship.

Sector strategies complement current EPA activities by allowing the Agency to approach issues more holistically; tailor efforts to the particular characteristics of each sector; identify related groups of stakeholders with interest in a set of issues; link EPA's efforts with those of other agencies; and craft new approaches to environmental protection. Sustainable industry programs serve as incubators and developers of innovative approaches to environmental policy making, testing alternative regulatory and programmatic approaches through regional projects, and multi-stakeholder processes. Sector-based approaches will offer valuable supplements to traditional environmental policy and may become the predominant means for environmental protection in the 21st century.

Science Advisory Board Peer Reviews

The Agency plans to support the activities of the Science Advisory Board (SAB) which provides independent expert advice to Congress, the Administrator, and the Agency on scientific and

engineering issues that serve as the underpinnings for Agency regulatory decision making. Each year, the Administrator and EPA program offices nominate numerous issues to the SAB for peer review. The SAB selects several of these issues for review each year, culminating in reports that help the Agency make better use of science in its decision-making process. The issues that are not selected for review can be nominated again the following year. The SAB's broad, objective review of important scientific and technical issues promotes sound science within the Agency's scientific and technical programs. The use of the SAB for peer reviews supports the Agency-wide peer review evaluation efforts, in response to GAO findings in 1997.

External Factors

Sound science is predicated on the desire of the Agency to make human health and environmental decisions based on sound scientific data and information. It challenges the Agency to apply the best available science and technical analysis when addressing health and environmental problems that adversely impact the United States. Such a challenge moves the Agency to a more integrated, efficient, and effective approach of reducing risks to both human health and the environment. As long as sound science is a central tenet for actions taken by the Agency, then external factors will have a minimal impact on the goal.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems

Objective # 1: Research for Ecosystem Assessment and Restoration

By 2008, provide the scientific understanding to measure, model, maintain, or restore, at multiple scales, the integrity and sustainability of ecosystems now and in the future.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Research for Ecosystem Assessment and Restoration	**$106,489.4**	**$111,978.7**	**$118,553.3**	**$6,574.6**
Science & Technology	$105,521.0	$111,978.7	$118,112.7	$6,134.0
Hazardous Substance Superfund	$968.4	$0.0	$440.6	$440.6
Total Workyears:	402.3	400.8	456.4	55.6

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Clean Water Action Plan - Related Research	$0.0	$1,406.0	$4,689.3
Coastal Environmental Monitoring	$0.0	$0.0	$6,549.0
Endocrine Disruptor Research	$0.0	$0.0	$927.7
Environmental Monitoring and Assessment Program, EMAP	$36,261.5	$33,255.0	$33,955.0

FY 2000 Request

Natural ecosystems provide valuable services and resources to the public, such as air and water purification, flood control, raw materials for manufacturing and industrial processes, food, as well as less tangible benefits such as recreation. Many human activities alter or damage ecosystems and their ability to provide these goods and services. In order to balance the growth of human activity and the need to protect the environment, it is important to understand the current condition of ecosystems, what stressors are changing that condition, what are the consequences of those changes, and what can be done to prevent, mitigate, or adapt to those changes. EPA's ecosystems protection research is organized in four main areas to address these questions.

Ecological Monitoring Research

Ecological monitoring research addresses the question, "What is the current condition of the environment, and what stressors are most closely associated with that condition?" To do this, researchers develop indicators, monitoring systems, and designs for measuring the exposures of ecosystems to multiple stressors and the response of ecosystems at local, regional, and national scales.

Highlights of EPA's monitoring research include The Environmental Monitoring & Assessment Program (EMAP) and the new Coastal Monitoring Initiative. EMAP develops the science of monitoring that is required to implement the Committee on Environment and Natural Resources (CENR) National Monitoring Framework, and to develop EPA's capability to measure trends in environmental health, especially the health of freshwater and marine ecosystems. EMAP is the only research program specifically seeking to overcome the data gaps for measuring aquatic ecosystem health. Efforts under EMAP include the development of survey designs for a Western States Pilot. This pilot will address the scientific gaps in monitoring designs for arid, alpine and grassland watersheds in western regions. The field monitoring phase of the Mid-Atlantic Integrated Assessment (MAIA) has concluded, and this program will shift into an assessment phase. Data gathered in this five-year effort will be assessed by EPA researchers.

The Coastal Research Initiative will provide EPA with baseline and trend analyses for important data gaps such as the aquatic health of our nation's estuaries. This initiative will:

- implement nationwide coastal monitoring technologies developed under EMAP
- work directly with other federal agencies and states and tribes to transfer new monitoring designs to local monitoring programs.

Process and Modeling Research

Process and Modeling Research addresses the question, "What are the biological, chemical, and physical processes affecting the condition of ecosystems and their response to stressors?" Drawing from information gathered by monitoring efforts, process and modeling research develops

a basic understanding of the processes that govern ecosystem function, and the technology to model those processes. This modeling ability allows for predictions of future landscapes, stressor patterns, ambient conditions, and receptor responses. Predicting the impact of changes in conditions allows resource managers to address problems in ways that will more accurately achieve the environmental protection goals they seek.

Current models used to predict the outcome of any individual management option are generally single-media models, involving only a single stressor or pollutant. Models being developed by EPA will be able to incorporate multiple stressors and multiple receptors, and will be linked to landscape models in order to characterize future environments and habitats. This research has one overarching goal: to publicly release models, and the common software framework Multimedia Integrated Modeling System (MIMS), for computation of nutrients, toxics, pesticides, sediments, and pathogen loadings into surface waters for determination of total maximum daily loadings (TMDLs), including alternative management solutions. EPA's monitoring research seeks to identify the criteria of ecosystem integrity and the modeling seeks to provide the models to look at alternative means of meeting those criteria. Thus, the emphasis of the research is related to the needs of the Clean Water Action Plan (CWAP).

High-priority research will include:

- Developing a prototype modeling framework for EPA covering a full range of computing architectures from personal computers to scalable, parallel machines;

- Understanding, quantifying, and modeling key transport and/or transformation processes for nutrients, industrial chemicals, pesticides, metals (with special emphasis on mercury), and pathogens and incorporating these processes into terrestrial and aquatic exposure assessment models;

- Developing stressor/response analyses and techniques to establish cause-and-effect relationships and to improve effects models and the applicability of the exposure models.

Risk Assessment Research

Risk Assessment Research addresses the question, "What is the relative risk posed to ecosystems by stressors, alone and in combination, now and in the future?" Ecological assessments can link stressors with consequences and evaluate the potential for damage to particular ecosystems. This is a valuable tool for environmental risk managers at local, state, and federal levels, enabling them to link high priority ecosystems with ecosystems at high risk. In 1992, EPA published the *Ecological Risk Assessment Framework* as the first statement of principles for ecological risk assessment. In 1998, the *Ecological Risk Assessment Guidelines* were published, which describe methods for conducting the more conventional single-species, chemical-based risk assessments, discussing techniques for assessing risk to ecosystems from multiple stressors and from multiple endpoints.

The goal in this research area will be to continue development of better ecosystem risk assessment methods. Specifically, high-priority areas will include:

- Developing risk assessment guidelines to improve and standardize ecological risk assessments within and outside EPA;

- Conducting ecological risk assessments at real places, on special problems, and for important chemicals;

- Developing new methods to conduct place-based, multiple-stressor assessments.

The focus of research in 2000 will be the development of a broad perspective regional assessment plan that will facilitate the completion of a regional risk assessment.

EPA is increasing its efforts to support the National Science and Technology Council's cross-Agency priority of Integrated Science for Sustainable Ecosystems. EPA's research efforts in this area will develop methods and models to integrate socioeconomic analysis with landscape ecology and ecological risk assessment and give EPA, state, and local community-based environmental partners capability to identify the most significant environmental stress and select risk reduction alternatives to improve or sustain biological and chemical water quality in streams, rivers, and estuaries. This program will also develop a capacity to evaluate and measure the success or failure of policies in sustaining or improving ecosystem health. Measuring the performance of policies in the context of promoting sustainable ecosystems will mean that models of ecosystem health will have to be linked with models of socioeconomic forecasting that drive human demands on our ecosystems in a manner that has never been achieved before.

Risk Management and Restoration Research

Risk Management and Restoration Research addresses the question, "What options are available to manage the risk to, or to restore, degraded ecosystems?" Given the rate of development of the man-made environment, present regulatory approaches may not always limit risks to vulnerable ecosystems to tolerable levels. There is a need to develop new, cost-effective prevention, control, and remediation approaches for sources of stressors, and adaptation approaches for ecosystems. Cost-effective stressor reduction may not always be feasible or practical as a means to reduce risks. Therefore, it is also important to invest in restoration technologies, including protocols and indicators, to diagnose ecosystem restoration needs, evaluate progress toward restoration, and establish ecologically relevant goals and decision support systems for state and community planners in order to facilitate consistent, cost-effective decisions on ecosystem restoration within watersheds.

Risk management research will focus on:

- Developing and verifying improved tools, methodologies, and technologies to improve or maintain ecosystem condition at watershed scales;

- Developing best management technologies to reduce the impact of watershed development on the biological and chemical condition of stream quality;

- Developing techniques to improve decontamination of stream sediments;

- Developing techniques to decrease the risk of degradation through adaptation of the landscape, ecosystems, and species;

- Developing the techniques to restore and rehabilitate ecosystems to achieve local, regional, and national goals.

In 2000, the program will deliver its first review of the existing best management technologies and alternatives to riparian restoration. This will serve as the foundation for determining where EPA can best contribute to further development of alternatives in support of the whole of the ecosystems protection program. Risk management research is being conducted with both 2000 and prior-year funding.

FY 2000 Change from FY 1999 Enacted

S&T

- (+ $5,000,000) These resources will fund the National Science and Technology Council's Integrated Science for Sustainable Ecosystems Initiative (ISEC). ISEC will develop methods and models to integrate socioeconomic analysis with landscape ecology and ecological risk assessment and give EPA, state, and local community-based environmental partners capability to identify the most significant environmental stressor and select risk reduction alternatives to improve or sustain biological and chemical water quality in streams, rivers, and estuaries. This initiative will also develop a capacity to evaluate and measure the success or failure of policies in sustaining or improving ecosystem health. This research will directly support EPA's goal of improving the science and understanding of environmental risk and fostering greater innovation to address environmental problems.

- (+ $6,549,000, +20.0 workyears) These resources will fund the Coastal Initiative beginning in 2000. The 20 workyears are redirected from EMAP Geographic Studies research. This initiative will provide a demonstration of status and trends monitoring of the health of U.S. estuaries. The research will focus on estuarine communities and develop baselines for tracking performance of efforts to control excess nutrients and sediment contamination. The Coastal initiative will work with existing state and tribal monitoring efforts, in coordination with the Office of Water and the Regional Offices, to transfer new monitoring technologies to local programs and to improve the cost effectiveness of monitoring aquatic ecosystem health in our nation's coastal waters.

- (+$650,000) This investment in the mercury initiative will provide for development of better methods for measuring both wet and dry atmospheric deposition of mercury and provide information for source attribution. Researchers will also study the fate and transport of mercury in aquatic and terrestrial ecosystems to better quantify the link between atmospheric mercury deposition and mercury accumulation in fish. Additional research under the mercury initiative is funded in Goal 8, Objective 4.

- (+$2,951,160; +15.4 total workyears) This shift will support the development of models linking sources, transport and transformations of pollutant stressors, along with physical predictive models, to estimate exposures at appropriate temporal and spatial scales. These models will also be linked with landscape models to characterize future environments and habitats, and tie to appropriate suites of biological response models essential to the risk manager. Landscape characterization data will be integrated into the MIMS framework, further enhancing the diagnostic, predictive, and socio-economic capabilities of MIMS. Development of MIMS is benefitting from the experience of researchers from the High Performance Computing Communications Program. Researchers will focus on the development of indicator and biomarker methods for vulnerability of aquatic systems to pesticide exposure.

- (+$1,602,590, +14.1 workyears) This redirection of resources will fund the second phase of a study of 15 suspect Endocrine Disrupting Chemicals (EDCs) conducted on the Neuse River. Phase II will apply developed measurement methods to three additional watersheds: Savannah River, Lower Colorado River, and the Little Miami. In addition, Phase II will look at PBTs (EDC and non EDC) and organo-metallics (e.g., tin, lead, and mercury).

- (+$680,400, +12.6 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (+$1,190,510 +14.9 workyears) This redirection of workyears will support modeling research ecosystems protection program.

- Lessons learned in the Mid Atlantic Integrated Assessment (MAIA) will now be applied in Western States. Resources ($6,000,000 and 3.0 total workyears) in our EMAP geographic studies program have shifted to begin development of survey designs for a Western States Pilot. This pilot will address the scientific gaps in monitoring designs for arid, alpine and grassland watersheds in western regions. The Mid Atlantic Integrated Assessment (MAIA) is shifting to an assessment phase as the five-year data gathering effort has concluded. Data gathered by the MAIA effort will now be assessed by a team of in-house researchers.

- (-$6,532,500) Funding to support the follow the following Congressional earmarks has been eliminated: The National Center for Atlantic/Carribean Reef Research; The Water Environment Research Foundation; Crafton Redlands Plume Research; and, The Center for Estuarine/Coastal Ocean Environmental Research.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Monitoring Findings in the Mid-Atlantic

In 2000 By 2000; Report on monitoring findings in the Mid-Atlantic Region as a cost effective means of measuring the condition of these systems.

In 2001 Complete and evaluate a multi-tiered ecological monitoring system for the Mid-Atlantic region and provide select land cover and aquatic indicators for measuring status and trends.

Performance Measures	FY 1999	FY 2000
Final report and data base on landscape change in the Mid-Atlantic states between the early 1970s and the early 1990s, based on remotely sensed monitoring data, and the consequences for water quality		1 report,database
A final report on the extent and magnitude of fish tissue contamination in small, wadeable streams in the Mid-Atlantic Region as means of identifying high risk areas.		1 final report
Final report on the relationship between macroinvertebrate & periphyton assemblages & chemical & physical stressors to verify the applicability of these biological indicators in the Mid-Atlantic.		1 report
Provide baseline landscape indicators for the Mid-Atlantic Region.	30-SEP-1999	
Reports on benthic and water quality indicators of condition in estuaries.	30-SEP-1999	
Publish Mid-Atlantic region stressor profiles for ozone, acid deposition, pesticides, nitrogen and other stressors.	30-SEP-1999	

Baseline: There is a need to understand current conditions of surf waters and what stressors are closely associated with that condition in order to measure positive or negative changes in those systems, whether in

response to stressors, mitigation., or restoration efforts. Development of "formal" baseline info for EPA research is currently underway.

System, Conceptual Model, and Strategy for Watershed Management Models

In 2000 By 2000: Publish a proposed modeling system, a regionally applicable conceptual model and modeling research strategy for developing watershed management models

Performance Measures	FY 1999	FY 2000
Delivery of a final report on the concept, requirements, costs, and timeline for development of a MIMS that will be the framework for the TMDL and other ecological modeling for protecting ecological resources		1 final report
Peer-reviewed draft TMDL Implementation Protocol/Prototype approach for estimating loadings of sediments to be used by OW, Regions, and States in implementation of CWA S.303		1 protocol
Final report on relationships between wetland extent and land-use patterns with stream water quality and biotic communities in watersheds of the Lake Superior basin.		1 report

Baseline: Performance Baseline: It is necessary to understand the biological, chemical, and physical processes affecting the condition of surface waters and their response to stressors. Development of "formal" baseline information for EPA research is currently underway.

Conceptual Model for Watershed Assessment

In 2000 By 2000, publish a conceptual model for developing watershed assessment techniques that would assist local, regional, and national environmental decision makers in maintaining the ecological integrity of the watershed.

In 1999 Provide ecological risk assessment case studies for two watersheds, final guidelines for reporting ecological risk assessment and ecological risk assessment guidance and support.

Performance Measures	FY 1999	FY 2000
Release of multimedia wildlife exposure assessment model which consists of a computer friendly system to assess and integrate exposures of wildlife to environmental contaminants in soil, water, food, and air.		1 model
Develop expanded guidance for performing an ecological risk assessment; conduct a series of colloquia and a workshop on ecological assessment issues		09/30/2000 guidance
Improve the use of ecological risk assessment by developing specific guidance for implementation via procedures set forth in the EPA Ecological Risk Assessment Guidelines.		09/30/2000

Performance Measures	FY 1999	FY 2000
Final Guidelines for Ecological Risk Assessment	30-SEP-1999	
Report to CENR on use of Ecological Risk Assessment in the Federal Government.	30-SEP-1999	
Development and use of ecological information management system.	30-SEP-1999	

Baseline: Performance Baseline: There is a need to understand the relative risk posed to ecosystems by stressors, alone and in combination. Development of "formal" baseline information for EPA research is currently underway.

Research on Riparian Zone Restoration

In 2000 By 2000, evaluate watershed-scale experiments implemented with federal and state partners (USDA, USGA, and the related states) on the effectiveness of riparian zone restoration as a means to restore aquatic ecosystems within the Mid-Atlantic Region of the US; evaluation will be used to develop protocols.

In 2002 Approaches for Restoring Riparian Zones

In 2004 Develop protocols, information, and tools for stakeholders and decision makers to select ecosystem risk management actions

Performance Measures	FY 1999	FY 2000
Initial data and modeling results from a paired watershed study of hydrogeologic, geochemical, and geomorphic processes determining reparian zone controls on subsurface nitrate transport into Chesapeake Bay.	30-SEP-1999	
By 2000, demonstrate the effects of riparian ecosystem restoration on soil characteristics, trace gas composition, and fate of nitrogen to determine the impact of nutrient fluxes.		09/30/2000 demonstrat

Baseline: There is a need to assess options to manage the risk to or restore degraded ecosystems. Development of "formal" baseline information for EPA research is currently underway.

Stream Monitoring Designs in Western Watershed

In 2000 Develop monitoring designs, including indicators, for streams in western watershed.

Performance Measures	FY 1999	FY 2000
Develop a final work plan for western stream condition monitoring.		09/30/2000

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Coastal Monitoring Designs

In 2000 Develop monitoring designs for National coastal monitoring.

Performance Measures	FY 1999	FY 2000
Draft design for a National coastal monitoring program to assess the biological condition of estuaries		1 draft design
Refined coastal health indicators developed and applied in salt marsh estuaries and near coastal water of the Gulf and South Atlantic.		09/30/2000 indicators

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that

environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

EPA researchers work within the Committee on Environment and Natural Resources (CENR) on EMAP and other ecosystems protection research. The Mid-Atlantic Landscape Atlas was developed in cooperation with NOAA, USFW, the University of Tennessee, and the Oak Ridge National Laboratory.

EPA research into pfisteria and non-pfisteria harmful algal blooms, as well as coastal monitoring research, supports the National Science and Technology Council (NSTC) Sustainable Ecosystems Initiative.

Statutory Authorities:

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
Toxic Substances Control Act
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
Resource Conservation and Recovery Act (RCRA)
The Clean Air Act Amendment
The Safe Drinking Water Act
Pollution Prevention Act (PPA)(42 U.S.C. 13101-13109)
Clean Water Act (CWA) Title I (33 U.S.C. 1251-1271).
Toxic Substances Control Act (TSCA) section 4 and 5 (15 U.S.C. 2603 and 2604).

Provide Sound Science to Improve Understanding of Environmental Risk and Develop and Implement Innovative Approaches for Current and Future Environmental Problems

Objective #2: Research for Human Health Risk Assessment

Provide the scientific basis for responding to a wide range of environmentally-driven human health problems by developing methods, models, and data that have broad applicability.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Research for Human Health Risk Assessment	**$57,063.6**	**$50,573.7**	**$56,229.1**	**$5,655.4**
Environmental Program & Management	$18.8	$18.8	$19.5	$0.7
Science & Technology	$57,001.2	$50,554.9	$55,705.6	$5,150.7
Hazardous Substance Superfund	$43.6	$0.0	$504.0	$504.0
Total Workyears:	235.6	219.1	261.6	42.5

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Endocrine Disruptor Research	$0.0	$0.0	$372.9
Human Health Research	$57,001.2	$50,323.8	$55,705.6

FY 2000 Request

During much of its history, EPA has focused its risk management decisions and regulations on single environmental pathways and individual contaminants. Often, this approach has been mandated by environmental legislation. In recent years, advances in the state of environmental

science have illustrated that new risk assessment methods are needed to investigate complex environmental and human health issues that were not contemplated by early environmental legislation. These advances illustrate the significance of new risk management options for EPA -- replacing, where appropriate, the "one-size-fits-all" approach to risk management with a more population/geographic-specific approach where risk management options can be developed for the general population, specific age groups (e.g., infants and children), or other susceptible subpopulations.

Today, the practice of risk assessment and risk management helps to identify scientific issues that cut across the elements of the risk assessment paradigm (exposure, dose response, effects, risk assessment). Risk assessment plays an essential role in guiding and focusing human exposure and health research in an interactive and iterative process to improve the prevention, mitigation, or management of environmental health risks. Creating a strong scientific foundation for risk assessment and for subsequent risk management decisions requires research to reduce significant areas of scientific uncertainty and to develop the methods, models, and data needed to support EPA's scientific and regulatory programs. EPA has identified three major areas of uncertainty as the focus for its Human Health Risk Assessment Research Program: 1) human exposure measurements and models, 2) identifying/characterizing hazards and assessing dose response, and 3) characterizing and assessing variation in human exposure and susceptibility to disease. Because substantial uncertainties are associated with these areas, resolution will greatly advance the science of human health risk assessment.

Human Exposure Measurements and Models

EPA is committed to demonstrating a model to assess, predict, and diagnose the population distribution of multi-media, multi-pathway exposures to major classes of environmental agents. A number of exposure related activities will be undertaken in achieving this objective. They have been chosen to address substantial uncertainties that exist in human health risk assessment and, thereby, improve the scientific basis for assessing and managing risks. They include: 1) human exposure measurement research, 2) research to develop multipathway exposure models and databases, 3) research on residential pesticides exposure, 4) research on farm family exposures to pesticides, and 5) research to improve risk assessment techniques, data bases, and models. This research seeks to improve the core science in this area and will do so by focusing on multimedia, multipathway exposures to pesticides and other consumer products and major exposure venues, including residential.

Human exposure measurement research will continue to develop, demonstrate, and evaluate human exposure measurement and surveillance through the National Human Exposure Assessment Survey (NHEXAS) program and the Borders XXI (NAFTA) program. This research will also continue to develop protocols for measuring and communicating the results of exposure and exposure mitigation data at community-to-regional scales.

Research on multipathway exposure models and databases will continue to develop, demonstrate, and evaluate measurement-based models that represent multipathway source-exposure-biomarker-dose relationships and the physical and chemical factors that affect potential and absorbed doses. Research in this area also develops and distributes exposure measurement and activity pattern databases.

Research on residential pesticides exposure will continue to focus on reducing uncertainties in three primary areas: 1) developing and demonstrating monitoring methods and guidelines for dislodgeable residues from lawns and indoor surfaces, 2) developing and demonstrating methods for residential non-dietary ingestion and dermal exposure, and 3) developing multipathway exposure/dose assessment inclusive of pesticides and consumer products. The information developed from application of these methods will significantly improve our understanding of the extent of human exposure to specific pesticides and toxic substances. The Agency will incorporate methods into its battery of testing guidelines under which industry will be required to submit data to the Agency on pesticides regulated under FIFRA and toxic substances regulated under TSCA.

Finally, research to improve risk assessment techniques, data bases, and models will continue to support analysis of existing exposure information developed through the NHEXAS and National Health and Nutrition Examination Survey (NHANES) programs, develop exposure scenarios which incorporate research on exposure factors and uncertainty, and refine data on exposure factors (e.g., respiratory rates, childhood dermal exposure/absorption).

Identifying/Characterizing Hazards and Assessing Dose Response

EPA must assess the health risks of environmental exposures in order to make regulatory decisions that safeguard public health. The Agency faces limitations in its ability to assess health risks both qualitatively and quantitatively because of a lack of understanding about the underlying biological, chemical, and physical processes that determine target tissue exposures and effects. Without sufficient knowledge of these processes, uncertainties are introduced into the risk assessment process that allow wide interpretation of what is often limited data. Research associated with this activity addresses both qualitative (hazard identification) and quantitative (dose-response analysis) concerns associated with current risk assessments.

Under this research program, EPA is committed to providing mechanistically-based data, tools and approaches for more quantitative and biologically defensible human health risk assessments. EPA will achieve this objective through sustained research in areas that collectively represent a focused program to reduce significant uncertainties in EPA's ability to identify and characterize health hazards, and then to quantify, model and assess exposure-dose-response relationships.

Research will continue to develop and validate tests for hazard identification and characterization that have a stronger mechanistic foundation with a special emphasis on noncancer end points. Advances in molecular biology and in vitro cell culture techniques will be used to

establish laboratory models for examining selective biological events that may serve as the substrates for specific, adverse health outcomes. Other approaches, such as computational chemistry and structure-activity relationships (SAR), will improve our ability to conduct screening on a large number of agents for which there is little or no health effects information. The computational chemistry and SAR approaches will complement ongoing experimental studies involving hazard identification and mechanisms-of-action for important pollutant classes.

Although benchmark dose and other empirical approaches are seen as improvements over traditional noncancer risk assessment approaches through the use of more of the dose-response data, these approaches do not fully incorporate mechanism-of-action data. The continued development of biologically-based dose-response models is needed to support extrapolation of laboratory data to humans. Research on dose-response models will include elucidating underlying mechanisms of pollutant toxicity and the repair or adaptation of damaged tissues using animal models and human studies. Special attention will be placed on elucidating the role of receptor-mediated events in the expression of toxicity, especially as applied to deriving the dose-response of related toxic chemicals and mixtures. Research will include evaluating the utility of the toxic equivalency factor (TEF) technology to predict biochemical and toxicologic responses for mixtures in animal models. The receptor-mediated approach will also be applied in human studies to delineate the contribution of genetic background and age in the expression of adverse health effects. The research in this area will also shift focus from risks associated with chronic exposures to addressing less-than-life-time exposures, a paradigm that is especially appropriate for many noncancer health effects.

Characterizing and Assessing Variation in Human Exposure and Susceptibility to Disease

EPA is committed to developing and verifying innovative methods and models for assessing the susceptibilities of populations to environmental agents, aimed at enhancing current risk assessment and management strategies and guidance. The research described below is essential to successfully meeting this commitment. A major portion of this research is the Children's Health Research Program.

Children's Health Research Program

Much of the effort under the Children's program is based on the Draft ORD Strategy for Research on Environmental Risks to Children ($17,766.4k and 50.0 workyears), which provides direction for research in age-related exposures, physiology, and biological responses that may result in increased risks, and research in risk reduction methods. This research will result in better EPA risk assessments for children and reduced risks from environmental health threats. In 2000, Children's Health Research will continue providing the data to strengthen Agency risk assessments for children, both in the near and long term. The program will continue to emphasize:

- Development of methods, data, and models to identify hazards and relate exposures to adverse effects in children, making better use of mechanistic, physical, and biological models to account for children's susceptibilities.

- Development of information on childhood exposure pathways and children's biological and physiological characteristics that will provide data for more accurate Agency risk assessments for children.

- Collection and analysis of human data to provide information on distributions of exposure within age groups, factors affecting exposure, and relationships between exposure and effects in populations of children.

- Development of methods to assess, communicate, and reduce risks to children, with a focus on the child's environment.

Environment-related childhood diseases represent an enormous public health problem. For example, asthma, the most common chronic childhood illness, afflicts nearly five million children and is the leading cause of children's emergency room use, hospital admission, and school absences. For 1982 to 1993, the prevalence, morbidity, and age-adjusted mortality rates for asthma increased significantly despite improvements in asthma diagnosis and management and improved understanding of the biology and immunology of the disease. The mortality rate attributed to asthma for children five to fourteen years of age has doubled since 1980. Chronic asthma in children is closely associated with chronic respiratory disease in adulthood and has significant health, societal, and economic impacts.

In a collaborative effort to address environment-related childhood diseases, in 1998, EPA, in cooperation with the National Institute for Environmental Health Sciences (NIEHS), established eight pediatric environmental health centers. These Centers conduct basic and applied research in combination with community-based prevention efforts. Their aim is to better understand the causes of environmentally induced disease among children and to eventually decrease the prevalence of childhood disease. Their efforts are focused on children's respiratory disease, growth and development, children's susceptibility to pesticides, airway disease, childhood asthma and other lung diseases, and developmental effects.

In 2000, the Agency will initiate new research efforts in the following areas of children's health:

- Buy Clean: There is insufficient technical information available that can be used by school systems around the country to make informed decisions on which water-based cleaners pose acceptable risks to children. The Agency will support research to develop test procedures and create market incentives for the manufacture and use of products, including water-based cleaners, that result in improved indoor air quality. This research will provide the technical information to serve as the scientific basis to upgrade guidance to schools.

- Data Collection: Thousands of man-made chemicals have not been tested for human health effects, and of those that have been tested, testing is often incomplete and does not address effects that might be seen in children. In addition, exposure measurements have been made

for only a small fraction of these chemicals, and few exposure studies have focused on children until recently. The Agency will support research to develop data to improve its ability to assess these chemicals by investigating effects on developing organs, tissues and systems, and by developing data on factors contributing to increased susceptibility and exposure in children in order to develop better methods to assess risk where data are incomplete.

- Asthma: There is mounting evidence that environmental pollutants are involved in exacerbating asthma. EPA will conduct research as part of the interagency work under the President's Task Force on Environmental Health Risks and Safety Risks to Children, which will integrate human exposure, epidemiologic and clinical studies and mechanistic lab research (employing animal models of asthma) to further our understanding of the role of environmental pollutants in the induction/exacerbation of pediatric asthma. This effort will include collaboration with other public health agencies, including participation in two unique interdisciplinary studies of two groups of children.

- Endocrine Disrupting Chemicals (EDC): There is evidence that the effects of EDC exposure in children could be different from those experienced by adults. This research will support the development of methods to evalaute hazards that are quantiatively or qualitatively different from those observed in adults in immature organisms exposed to EDCs. Efforts will ensure that state-of-the-art science is incorporated into regulatory test methods and guidelines across program offices, and facilitate completion of an international assessment of endocrine disrupting chemicals, as well as international harmonization of test guidelines.

- Centers: A new center will be established to focus on basic and applied research on children's health, in combination with community-based prevention efforts that focus on identifying and preventing environment-related diseases in children. This center will look at non-asthma related research issues, including developmental disorders.

The new improved data, methods, models, and guidance resulting from efforts under the Human Health Research Program will support more effective Agency implementation of a variety of legislative mandates, particularly the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Toxic Substance Control Act (TSCA), the Federal Food, Drug, and Cosmetic Act (FFDCA), the Food Quality Protection Act (FQPA) of 1996.

FY 2000 Change from FY 1999 Enacted

The increases to this Objective represent a number of program and resource movements and redirections.

- (+$10,697,400 S&T and +48.8 total workyears). Children's environmental health is among the Administration's highest priorities. In FY 2000, the Children's research effort will be

enhanced through redirections. This enhancement will support research on asthma, endocrine disruptors, data collection/methods development, and a "Buy Clean" effort, all focusing on environmental risks to children. The investment will also support the establishment of a new university-based research center focusing on pediatric environmental health. These enhanced efforts will improve our understanding of the unique susceptibilities children face when exposed to environmental hazards and further our efforts to address the most serious environmental health hazards threatening children. They are supported, in part, through internal redirections from the National Health and Nutrition Examination Survey (NHANES), which will be nearing completion in 2000, and a realignment of general population/subpopulation exposure surveillance, measurements, methods, models, and indicators research to focus on the unique susceptibilities of infants and children.

- (+$270,000 S&T and 5.0 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (-$780,000 S&T). Funding to support the following 1999 Congressional earmark will not be continued in 2000: Environmental Molecular Toxicology Program at the University of Montana.

- (-1,500,000 S&T). Reflects one time cost in FY 1999 associated with the purchase of a waste disposal incinerator required in the new RTP laboratory facility.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures:

Exposures and Effects of Environmental Contaminants, Particularly in Children

In 2000	Develop initial measurements, methods, and models to evaluate exposures and effects of environmental contaminants, particularly in children.
In 1999	Produce First Generation Exposure Models Describing Residential Exposure to Pesticides

Performance Measures	FY 1999	FY 2000
Develop and validate first phase models using mechanistic data to predict toxicity for two noncancer endpoints following less-than-lifetime exposures to environmental contaminants.		2 (min) report
Develop first generation multimedia and multipathway exposure models for infants, children, and the general population.		1 model
First Generation Residential Exposure Models	30-SEP-1999	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Risk Assessment Guidance and Regional Assessments Concerning Risks to Children

In 2000 Develop risk assessment guidance and regional assessments concerning risks to children exposed to environmental contaminants.

Performance Measures	FY 1999	FY 2000
Assess pesticide exposures to children in Washington, Minnesota, and Arizona.		1 assessment
Report on the use of mechanistic data in developmental toxicity risk assesssment.		1 report
Develop exposure factors handbook for children		1 Handbook

Baseline: Examination of the current methodologies and data bases revealed that many assessments are based on methods and data developed for adults. Assessment of data on the circumstances under which children are more susceptible than adults to environmental contaminants and how exposures differ need to be assembled for use in risk assessment, and methodologies specific to children need to be developed for use in routine risk assessment.

Innovative Methods and Models of Population of Susceptibility

In 2008 Develop and verify innovative methods and models for assessing the susceptibilities of populations to environmental agents, aimed at enhancing risk assessment and management strategies and guidelines.

Performance Measures	FY 1999	FY 2000
In 1999 award up to 10 peer reviewed STAR research grants that support studies to quantify the exposure of children to organophosphates, trazines and pyrethroids.	30-SEP-1999	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures:

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies:

EPA's research program collaborates with a number of other Federal agencies involved in research related to the protection of human health:

- EPA is a co-leader in the effort to inventory and coordinate research in children's environmental health and safety across the federal government through the President's Task Force on Environmental Health Risks and Safety Risks to Children, which is co-chaired by the EPA Administrator and the Secretary of Health and Human Services. The Research Subcommittee of the Task Force, co-chaired by representatives of EPA and NIEHS consists of approximately 20 agencies involved in children's health and safety issues. The Research Subcommittee is developing a federal-government-wide inventory of research related to children and a federal research agenda.

- Several Federal agencies sponsor research on variability and susceptibility in risks from exposure to environmental contaminants. The National Institute for Environmental Health Sciences (NIEHS) achieves its mission through a multidisciplinary biomedical research program, prevention and intervention efforts, and communication strategies that encompass training, education, technology transfer, and community outreach. In 1998, in collaboration with NIEHS, EPA established Centers for Children's Environmental Health and Disease Prevention to define the environmental influences on asthma and other respiratory diseases, childhood learning, and growth and development.

- The Agency has worked on interagency task forces with a number of federal agencies, including NIOSH, NIEHS, FDA, and CPSC, in developing health risk assessment guidelines (e.g., Carcinogen Risk Assessment Guidelines, Developmental Toxicity Guidelines, Exposure Assessment Guidelines) and has maintained interagency agreements with NIOSH and NIEHS.

- Historically, EPA has maintained formal research agreements with CDC, NIEHS, NICHD, NIOSH, and FDA for the conduct of regional-scale human exposures studies such as NHEXAS and the U. S. - Mexico Border XXI Studies. Current participants in NHEXAS include federal agencies (CDC, FDA, and NIST), state environmental and health agencies (Arizona, Maryland, Massachusetts, Michigan, Illinois, Indiana, and Minnesota), EPA

Regions (Regions 3, 5, and 9), and academic research institutions. The Director of NIEHS has invited EPA and ORD to participate in developing an expanded federal partnership to plan for future NHEXAS studies. Current federal participants in the Borders XXI Program include the HHS agencies (CDC, FDA, ATSDR), EPA Regions 6 and 9, and State Health and Environmental agencies in Texas, Arizona, New Mexico, and California.

Statutory Authorities:

FIFRA of 1988
FFDCA of 1988
FQPA of 1996
TSCA of 1976
ERDDA of 1981

Provide Sound Science to Improve Understanding of Environmental Risk and Develop and Implement Innovative Approaches for Current and Future Environmental Problems

Objective #3: Emerging Risk Issues

Establish capability and mechanisms within EPA to anticipate and identify environmental or other changes that may portend future risk, integrate futures planning into ongoing programs, and promote coordinated preparation for and response for change.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Research to Detect Emerging Risk Issues	**$61,639.2**	**$56,648.8**	**$49,806.9**	**($6,841.9)**
Environmental Program & Management	$5,760.9	$7,214.4	$7,512.7	$298.3
Science & Technology	$55,843.3	$49,434.4	$42,290.4	($7,144.0)
Hazardous Substance Superfund	$35.0	$0.0	$3.8	$3.8
Total Workyears:	192.3	211.8	137.0	(74.8)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Endocrine Disruptor Research	$13,468.8	$12,230.0	$11,434.7

FY 2000 Request

A clear vision of future environmental risk will enable EPA to manage strategically for tomorrow and tactically for today. Benefits will include an improved framework for decision-making, increased ability to anticipate and perhaps deter serious environmental risks, and enhanced communication with the public and other stakeholders. This objective responds directly to recommendations of numerous external advisory panels that EPA improve its capacity to identify

emerging environmental risks, the respective long-term trends that would shape such environmental risks, and major planning and policy issues related to associated research, monitoring, and intervention. Substantial capability to discern "early warnings" and patterns of change will be developed through work undertaken on endocrine disruptors. This new understanding will help to develop a process for identifying and conveying recommendations concerning potential risks in the future.

The following sections present a more detailed discussion of the 2000 emerging risks research program.

Endocrine Disruptors

Evidence has been accumulating that humans and domestic and wildlife species have suffered adverse health consequences resulting from exposure to environmental chemicals that interact with the endocrine system, known as endocrine disrupting chemicals (EDCs). To date, these problems have primarily been identified in wildlife species with relatively high exposures to specific compounds, including organochlorines such as DDT and its metabolites, PCBs and dioxins, or in domestic animals foraging on plants with high levels of phytoestrogens (Kavlock et. al, 1996). In humans, the consequences of prenatal exposure to diethylstilbestrol (DES) on the reproductive tract of both females and males are well known, and developmental neurological problems have been identified in children exposed to PCBs and/or polychlorodibenzofurans (PCDFs). In addition, there are reports of declines in the quality and quantity of sperm production in humans over the last four decades, and increases in certain cancers that may have an endocrine-related basis (breast, prostate, testicular), leading to speculation about environmental causes.

Despite these reported effects, we know little about their causes and the concentrations of EDCs that would induce effects in various populations. Based upon recognition of the potential scope of the problem, the possibility of serious effects on the health of populations, and the persistence of some endocrine disrupting agents in the environment, research on endocrine disruptors was identified as one of the six high-priority topics highlighted in the ORD Strategic Plan, published in 1997.

Based on the Endocrine Disruptor Research Strategy, in 2000 the program will continue to focus on determining the nature and extent to which environmentally relevant exposures to chemicals are producing adverse effects in humans and wildlife species. More specifically, research will: 1) assess the effects of EDC exposure on neuroendocrine, immunological, and reproductive function in developing and adult animals in support of pharmacokinetic and biologically based dose-response models, with emphasis on animal models of EDC-induced diseases in wildlife and humans; 2) translate results from measurement end points at lower levels of biological organization to impacts on populations and communities through the use of microcosms and mesocosms; 3) enhance ability of existing test methods to evaluate manifestations of endocrine disruption and underlying modes of action; and 4) develop risk assessment methods and characterize risks to humans from exposure to EDCs. A framework will be constructed to identify, characterize and prioritize potential exposure to EDCs and provide a database for preliminary risk characterization.

Graduate Fellowships and Exploratory Grants

A blue ribbon panel of the Science Advisory Board recommended that EPA enhance its environmental education programs for training the next generation of scientists and engineers (Fellowships/Environmental Education). The graduate fellowship program was initiated in 1995 for that purpose as part of the Science to Achieve Results (STAR) program. This competitive, peer-reviewed program is designed to attract some of the brightest and most dedicated students in the Nation to take advanced training in scientific and engineering disciplines relevant to protection of public health and the environment and, ultimately, to careers in environmental science and engineering – not only for EPA, but for states, localities, and industry. Beyond developing young minds for future needs, fellowship studies bring fresh ideas to bear on EPA science issues. Work done under the fellowship program helps resolve uncertainties associated with particular environmental problems and focuses graduate research on priority research areas. In 2000, the Agency expects to support fellowships across multiple disciplines, including the biological and physical sciences, mathematics and computer science, and engineering.

In 2000, the Exploratory Grants research program will generate new ideas and produce new scientific information by encouraging creativity and innovation in scientific research. Through publication of an annual general solicitation, the program defines general areas in which there exist significant gaps in scientific knowledge and understanding, and allows individual investigators from the academic research community to conceive, define, and propose research projects. Topics from a broad variety of areas, such as environmental chemistry and physics, health and ecological effects of pollution can receive attention under the Exploratory Grants program.

Proposals are competitively reviewed by panels of predominantly outside Agency researchers, with only the most scientifically sound proposals ultimately receiving support. The major program outputs are scientific articles published in the peer literature. The scientific information shared through such publications is intended to broaden and enhance scientific knowledge and understanding and to be used as inputs into more targeted, more applied environmental research programs.

FY 2000 Change from FY 1999 Enacted

S&T

- (+$941,400) provides additional resources to support EPA's Environmental Education Program, which is designed to heighten the knowledge base in specific environmental areas as well as attract bright students to careers that serve environmental science.

- (+$162,000 and +3.0 total workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of

highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (-$2,498,000 total) This reduction in EPA's exploratory research grants program is the result of the conclusion of funding for several studies in 1999. This reflects an increased focus on specific, long-term, high priority Agency needs in the Science to Achieve Results (STAR) program.

- (-$4,751,000 and -47.2 workyears) The Agency will discontinue the formal One Atmosphere Research Program. While One Atmosphere will no longer be supported as an individual program, the Agency will continue to pursue research aimed at assessing and preventing health risks from air pollutants present in mixtures, the way people commonly experience them. Such research, when appropriate, will be conducted as components of larger research programs such as the Particulate Matter and Air Toxics Research Program and workyears will be redirected primarily to those programs.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

External Review Draft of AQCD for Carbon Monoxide

In 1999 Complete and submit external review draft of the Air Quality Criteria Document for carbon monoxide.

Performance Measures	FY 1999	FY 2000
Submit carbon monoxide AQCD external review draft to CASAC	30-SEP-99	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Data Models and Risk Management Information for Air Toxics

In 1999 Produce data, models, technical risk management information for air toxics.

Performance Measures	FY 1999	FY 2000
Provide information on integrated technologies which have the capability to control multiple air pol	30-SEP-1999	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Reseach on Endocrine Disrupting Chemicals

In 2000 Develop tools to identify hazards and formulate strategies to manage risks from exposure to endocrine disrupting chemicals capable of inducing adverse effects in humans and wildlife.

In 1999 Initiate Field Exposure Study of Children to 2 EDC's

Performance Measures	FY 1999	FY 2000
Produce workshop report on the EDSTAC screening process for EDCs and determine application of the EDSTAC testing program for chemical hazard and risk assessment.		1 report
Characterization of environmental agents as risk factors in human prostate cancer.		1 characterize
Reports on endocrine and other effects in exposed women and their offspring in a cohort contaminated by PBBs.		2 report
Reports on the molecular mechanisms underlying estrogen receptor functions in ER knockout mice.		2 report
Development and refinement of test methods for use in Tier 1 testing of potential EDCs		2 methods
Development of amphibian assay for use in hazard identification.		1 assay
Protocol for field exposure study of children to 2 EDC's	30-SEP-1999	

Baseline: Health effects and exposure studies are needed to develop the conclusive evidence that humans and ecosystems are at significant risk due to exposure to EDCs. Given these needs, EPA research will provide one or more methods to identify chemicals with the potential to disrupt endocrine systems in humans and/or wildlife.

Verification and Validation of Performance Measures:

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

The broad nature of the EDCs issue necessitates a coordinated effort on both the national and international level. EPA's Office of Research and Development (ORD) has shown extensive leadership at both levels - chairing the Committee on Environmental and Natural Resources (CENR) interagency working group and serving on the IPCS/OECD Steering Group on Endocrine Disruptors.

Under EPA's leadership an inventory of federal research on endocrine disruption has been developed and used to evaluate the current state of the federal effort, identify research gaps and establish priorities, and clarify governmental roles and responsibilities. To date, nearly 400 projects have been identified as being sponsored by the participating 14 agencies. Due to the complex nature of the uncertainties posed by the endocrine disruptor hypothesis, the overlapping concerns of federal agencies, and the resource constraints on the federal budget, close coordination and cooperation among federal agencies are essential to the resolution of critical research questions. While the CENR provides the umbrella for this coordination, individual agencies are responsible for development of their own independent research plans. Therefore, an important component of ORD's Research Strategy on Endocrine Disruptors is to communicate with other federal organizations on EPA's goals, priorities, and projected accomplishments.

In conjunction with the CENR effort, a companion effort to inventory research has been conducted in Europe and efforts are currently underway under the auspices of the World Health Organization's International Programme on Chemical Safety and the Organization of Economic and Cooperative Development (OECD) to assemble an international inventory and assessment of the endocrine disruptor issue. Once again, ORD is demonstrating leadership in helping establish the international inventory.

Statutory Authorities:

Clean Air Act (CAA) and amendments
Environmental Research, Development and Demonstration Act (ERDDA)
Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
Toxic Substances Control Act (TSCA)
Food Quality Protection Act (FQPA) of 1996
Safe Drinking Water Act (SDWA) and amendments

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Sound Science, Improved Understanding of Environmental Risks, and Greater Innovation to Address Environmental Problems

Objective # 4: Pollution Prevention and New Technology

By 2006, develop and verify improved tools, methodologies, and technologies for modeling, measuring, characterizing, preventing, controlling, and cleaning up contaminants associated with high priority human health and environmental problems.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Pollution Prevention and New Technology for Environmental Protections	**$54,246.4**	**$77,286.3**	**$55,801.7**	**($21,484.6)**
Environmental Program & Management	$374.2	$857.0	$386.6	($470.4)
Science & Technology	$52,515.6	$76,429.3	$54,101.9	($22,327.4)
Hazardous Substance Superfund	$1,356.6	$0.0	$1,313.2	$1,313.2
Total Workyears:	197.4	196.0	185.7	(10.3)

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Common Sense Initiative	$870.6	$867.0	$621.8
Advanced Measurement Initiative (AMI)	$4,000.2	$0.0	$0.0
Environmental Technology Verification (ETV)	$7,884.0	$6,990.5	$7,749.5

FY 2000 Request

EPA supports pollution prevention (P2) as a necessary and logical strategy for dealing with high-risk human health and environmental problems that are addressed by Federal environmental, health, and safety regulations. In order to promote decisions which place pollution prevention as the first solution among many, research must begin to focus on the development of methods and decision tools that are more quantitative and easier for stakeholders and decision-makers to use than those currently available. Several areas of research contributing to the achievement of the objective's annual performance goals are: 1) P2 tools, methods and approaches; 2) environmental technology verification (ETV); and 3) environmental engineering economics (E3).

Research will accelerate the adoption and incorporation of pollution prevention by developing, testing, and demonstrating techniques applicable across economic sectors, especially those involving chemical science and engineering or characterized by high toxic release inventory (TRI) releases or low regulatory compliance. EPA will develop and pursue a program to link, and if appropriate, integrate risk assessment methodologies and pollution prevention tools to improve decision-making on important human health and environmental problems. This research will test the ability of risk assessors and risk managers to develop tools and methodologies which are meaningful and understandable to the public in terms of the costs and benefits associated with the magnitude of the risk reduction options. Together, these tools will provide a more robust and reliable means of making decisions on the most effective ways to reduce human health and environmental risks.

Additional efforts will focus on improving the theories and developing the methodologies which will result in tools that provide quantitative information for selecting preferred pollution prevention options. Risk management research will target a number of economic sectors in concert with EPA's Program Offices and Regions, where research and development is needed on P2 technology and approaches. The types of research to be conducted include: 1) assessing and evaluating alternatives to volatile organic compounds (VOCs) in solvents and coatings; 2) improving process controls to reduce wastes; 3) examining and developing green chemistry and green engineering approaches to prevent pollution; and 4) research and development of P2 technology under the Small Business Innovative Research Program (SBIR).

Pollution prevention efforts are also being devoted to mercury research. According to the Mercury Study Report to Congress, the chemical as a pollutant continues to be detrimental to human health and the environment. In 2000, research will be initiated to reduce human exposure to methylmercury, a known toxin to both the developing and adult nervous systems. Also, a study will begin to assess age-related differences in tissue distribution of methylmercury. Outcomes expected from this work include reduction of mercury releases into the environment, with subsequent reduction in mercury levels in blood and hair of humans.

Additional mercury research will focus on the speciation and control of mercury emissions from coal-fired utilities and other combustors, risk management alternatives for non-combustion sources of mercury, and a continuing emphasis on collecting and analyzing data and information on

mercury risks and mercury risk communication. Improved techniques for controlling mercury emissions into the environment will allow the Agency to achieve its programmatic and regulatory goals and meet an accelerated time table for reducing mercury releases.

Under the PBT initiative, work will continue on persistent bioaccumulative toxics (PBTs) to aid in preventing, minimizing, and, when possible, eliminating PBTs which are harmful to both human health and the environment. This initiative is a collaborative effort among Agency Program Offices. In 2000, research will continue to analyze PBT test methodologies and methodology harmonization, which supports the Agency over the long term.

With broad support from industry and other Federal partners, the Environmental Technology Verification (ETV) will continue to verify the environmental performance characteristics of technologies in all media (e.g., industrial pollution prevention, recycling and waste treatment; advanced air, water, and field monitoring technologies; air pollution control and greenhouse gas reduction technologies; drinking water, eco-system, and waste water systems) under its twelve pilots. The program will complete the last year of its five year pilot phase (1995-2000) and begin preparation of a report to Congress to be delivered in 2001. The report will contain a summary of the major outputs of the pilot phase, the costs of verification, the results of verification in moving better technologies into use, and recommendations for procedures to effectively conduct an ongoing program.

During 2000, ETV will continue to operate its extensive stakeholder input process, now including 15 committees with over 700 members; finalize and publish no less than 50 generic technology protocols and quality assurance plans; complete technology verifications in all pilots (approximately 35, bringing the program total to 85); continue its outreach efforts to industry, states, and local governments through partnership projects, publications, conferences and the maintenance of an extensive web site; and as a result of the interest in the ETV program abroad, EPA will expand the application of U.S. technologies verified under ETV, to the international marketplace.

Environmental engineering economics (E3) continues to be a growing facet of the pollution prevention approach. Research is needed to identify and test new industrial manufacturing and processing technology capable of enhancing productivity without sacrificing long-term resource viability. Environmental engineering economics, including cost-effectiveness analysis, not only has the potential to promote pollution prevention, but is also essential to guide our investments in technology options and improve regulatory impact analysis capabilities. Estimation of the costs of reducing adverse environmental effects, while generally thought to be straightforward, is as challenging as estimation of the benefits.

Cost assessment and E3 research will assist in focusing EPA's in-house pollution prevention research activities on the most cost-effective alternatives. Planned program activities include: 1) cost-estimating support to a variety of in-house research projects, including pollution prevention projects; 2) development of a series of "critical review" journal articles identifying and assessing methodologies, models, and information sources available to support cost estimating and cost-effectiveness determinations for a variety of risk management areas; and 3) development of

guidelines for the collection, evaluation, and reporting of cost data for technology evaluated/verified by EPA.

FY 2000 Change from FY 1999 Enacted

S&T

- (+$3,445,000 and +7.0 workyears) This increase represents a significant Agency investment in mercury research aimed at reducing mercury releases to the environment. The Agency will focus on the speciation and control of mercury emissions from coal-fired utilities and other combustors, risk management alternatives for non-combustion sources of mercury, and a continuing emphasis on collecting and analyzing data and information on mercury risks and mercury risk communication.

- (+$610,000) ETV currently operates 12 pilots that are in various stages of the verification process. This increase will allow newer pilots, which are currently in the organizational phase, to move forward in the verification process and verify more technologies. It will also increase the number of technologies verified under all operational ETV pilots.

- (+$183,600 and +3.4 total workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

- (-$2,328,550 and -12.5 work years) Resources will be redirected in 2000 to focus on our multimedia integrated modeling systems (MIMS) development research under Goal 8, Objective 1. This redirection results from the delivery of our MODELS-3 research project in 1999, as well as the discontinuation of various technical support functions.

- (-$14,820,000) Funding to support the following 1999 Congressional earmarks will not be continued in 2000: Mine Waste Technology and Heavy Metal Water Program; Urban Waste Management Research Center - University of New Orleans-; Technology Transfer Center; University of Maryland Center for Environmental Research, Education, and Training; Resources to support the Integrated Public/Private Energy and Environment Consortium; Institute for Environmental and Industrial Science; Old Dominion University Tributyltin Research Efforts on Ship Bottoms; Texas Regional Institute for Environmental Studies; Small Business Pollution Prevention Center

- (-$4,180,600) This reduction relates to the change in resource set-aside for the Small Business Innovative Research (SBIR) program from its 1999 level. Final funding level need

for the SBIR program in FY2000 will be determined based upon Congressional appropriation action and fully funded during the operating plan process.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Annual Performance Goals and Performance Measures

Computer-Based Tools and Proof-of-Process Structure

In 2000 Complete development of one or more computer-based tools which simulate product, process, or system design changes, and complete proof-of-process structure for one or more generic technologies (appl. to >1 env. problem) to prevent or reduce pollution in chemicals and industrial processes.

In 2001 In FY 2001, provide a generic clean oxidation technology for the synthesis of organic chemicals.

Performance Measures	FY 1999	FY 2000
Complete dev. of the PARIS II Software, a tool to design env. benign solvents, & complete dev. & integration of WAR Algorithm, v 1.0, into a commercially available chemical process simulator		09/30/2000 software
Complete BETA testing of decision support tool for life cycle analysis of municipal solid waste management options.		09/30/2000 tool

Baseline: Currently, the software tools which are available to assist users in finding environmentally benign replacement solvents utilize primitive decision criteria, and as such are limited solving problems involving single chemical solvents. Current software is unable to utilize detailed information regarding the underlying chemical properties of solvents and is unable to assist users in finding replacements for custom designed solvents which consist of complex chemical mixtures.

Decision Support Tools and Methods

In 2000 Provide decision-support tools and methods which can be applied to determine the value and costs of solutions to environmental problems, and develop partnerships to assist in the application of these tools and methods to community-based environmental programs.

In 1999 Provide a Full Range of Multimedia Decision-Support Tools to Regional, State, Tribal, and Community Decision-Makers

Performance Measures	FY 1999	FY 2000
Complete prototype decision support software for alternative municipal solid waste management options.	30-SEP-1999	
Provide an upgraded & enhanced Solvents Alternatives Guide (SAGE) software (expert) to incl. cost algorithms, giving it cost projection capability to complement its process selection capability		09/30/2000 software

Baseline: Performance Baseline: There is an inadequate level of decision-support tools and methods to estimate monetary and non-monetary impacts of environmental problems. Development of "formal" baseline information for EPA research is currently underway.

Mercury Research

In 2000 Initiate a research program to address the most pressing issues related to the prevention, control, and elimination of mercury as a human heath and environmental problem.

Performance Measures	FY 1999	FY 2000
Provide a mercury research plan to act as guide in the execution of an ORD-based mercury research program.		1 plan

Baseline: The capture of mercury from coal-fired utility boiler flue gas, which now typically ranges from 0 to 30 percent, is dependant upon mercury speciation. By 2000, EPA will have completed bench- and pilot-scale research to determine whether cost-effective control methods can be developed that result in more than an 80 percent capture of mercury.

Improved Engineering Cost Assessment Models

In 2004 Provide improved engineering cost assessment models for air, water, waste management and control, remediation, ecosystem restoration, and pollution prevention technologies

Performance Measures	FY 1999	FY 2000
Evaluate one new membrane material for its ability to recover VOC from low concentration, high flow streams.	30-SEP-1999	
Use new data on actual costs to develop improved algorithms for estimating the costs of controlling nitrogen oxides, sulfur dioxide and particulate matter from utilities.	30-SEP-1999	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Environmental Technology Verification (ETV)

By 2000 Use of Pilot Program to Verify Environmental Technologies

In 1999 Use of Pilot Program to Verify Environmental Technologies

Performance Measures	FY 1999	FY 2000
Provide verification data on 50 or more technologies.	30-SEP-1999	
Complete test protocols for all 12 ETV pilots will be available.		30-SEP-00

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Fine Particulate Model

In 1999 Improve Computational Efficiency of Fine Particulate Model by 25%.

Performance Measures	FY 1999	FY 2000
Complete parallel algorithms for aerosol dynamics.	30-SEP-1999	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Data, Models and Technical Information

In 1999 Produce data, models and technical information which can be used by other research; federal, state, and local government official; and private industry to quantify indoor air pollution.

Performance Measures	FY 1999	FY 2000
Complete a new emissions model which can be used to predict indoor emissions of volatile organic compounds from solvent based paints and coatings based on formulation data.	30-SEP-1999	

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures:

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The

BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

Pollution prevention is a relatively new field compared to other areas of environmental research, and many unknowns in knowledge impede the widespread adoption of preventive risk management. Limited progress has been made in organizing the concepts and ideals of pollution prevention into a state of practice that is relevant and scientifically meaningful. In the private sector, pollution prevention research has slowed for reasons that include reluctance to employ potentially expensive technology without short-term economic payoffs, lack of regulatory motivation, and reduction in government funding of less polluting pre-competitive technology. These circumstances leave EPA in a unique position to focus Federal pollution prevention investments because: (1) it is

the only Federal research organization with the broad mission to ensure that pollution prevention provides maximum human health and environmental protection, and (2) it has direct links to the regulatory and compliance offices of EPA to ensure focus on the highest priority problems. The Environmental Technology Verification (ETV) program is designed to facilitate the verification and use of innovative, cost effective environmental technologies through partnerships with private sector companies, non-profits, other Federal agencies (such as DOE), universities and states, including California EPA.

Statutory Authority:

Clean Air Act
The Safe Drinking Water Act
The Clean Water Act
The Toxic Substances Control Act
The Federal Insecticide, Fungicide, and Rodenticide Act
The Resources Conservation and Recovery Act
Superfund Amendments Reauthorization Act
Clean Air Act Amendments of 1990
Pollution Prevention Act of 1990

Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems

Objective # 6: Increase Use of Integrated, Holistic, Partnership Approaches

By 2005, EPA will increase the number of places using integrated, holistic, partnership approaches, such as community-based environmental protection (CBEP), and quantify their tangible and sustainable environmental results in places where EPA is directly involved.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Increase Use of Integrated, Holistic, Partnership Approaches	**$16,810.5**	**$16,390.5**	**$16,663.8**	**$273.3**
Environmental Program & Management	$16,810.5	$16,390.5	$16,663.8	$273.3
Total Workyears:	36.7	18.7	9.7	(9.0)

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Sustainable Development Challenge Grants *	$0.0	$4,701.8	$4,714.8
Regional Geographic Program	$12,045.0	$8,070.6	$11,780.5

* The Sustainable Development Challenge Grants program was transferred from Goal 1, Objective 1 and Goal 2, Objective 3 in 1999.

FY 2000 Request

Regional Geographic Initiatives (RGI) program works with local communities and other partners to apply state-of-the-art, multi-media approaches to their unique human and environmental risks.

The RGI program provides flexibility for the EPA Regional offices to partner with communities at the state, local, and private levels to collaboratively achieve environmental results. The projects address geographic environmental problems that have proven to be high risk to human health and ecosystems. The RGI program is different from other traditional EPA programs in that RGI addresses community based environmental risk holistically (multi-media). This program uses comparative environmental risk assessments to implement unique and creative multi-media solutions and promotes state-of-the-art environmental management. RGI is EPA's role model transitioning from a single-media to a multi-media focus, based on consensus-building, science and risk.

The Sustainable Development Challenge Grants program is a nationally competitive grants program. The grants act as seed money to leverage public and private investment in innovative, locally-developed solutions to serious environmental problems. Successful projects integrate environmental protection, economic vitality, and community well being and must meet stringent criteria related to innovation, replicability, long-term sustainability, community commitment, and measurable results. This program was transferred from Goal 1, Objective 1 and Goal 2, Objective 3 in 1999.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$3,096,900) Reflects restoration of RGI activities that were cut in 1999, as well as payroll adjustments.
- (-$800,000) Resources are not provided for Congressional earmarks for Environmental Research Projects ($500,000), Fairmount Water Works Interpretive Center ($200,000), and the Miami-Dade county Department of Education Program ($100,000).

Annual Performance Goals and Performance Measures

Regional Geographic Initiative

In 2000 Submit annual Regional Geographic Initiative Report which documents and assesses the progress, accomplishments, and effectiveness of completed Regional Geographic Initiatives.

Performance Measures	FY 1999	FY 2000
Annual Regional Geographic Initiative Report	1 report	1 report

Baseline: 1 report in 1999

Statutory Authorities:

Section 103(b)(3) of the Clean Air Act
Section 104(b)(3) of the Clean Air Act
Section 1442(c)(3) of the Safe Drinking Act
Section 10 of the Toxic Substances Control Act
Section 8001 of the Resource Conservation and Recovery Act
Section 20 of the Federal Insecticide, Fungicide, and Rodenticide Act
Multi-media

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems

Objective # 7: Increase Opportunities for Sector Based Approaches

By 2005, test innovative facility- and sector-based strategies to achieve improved environmental protection, and make successful approaches broadly available.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Increase Opportunities for Sector Based Approaches	**$11,496.8**	**$21,091.9**	**$10,018.5**	**($11,073.4)**
Environmental Program & Management	$11,461.8	$20,156.9	$9,983.5	($10,173.4)
Science & Technology	$0.0	$900.0	$0.0	($900.0)
Hazardous Substance Superfund	$35.0	$35.0	$35.0	$0.0
Total Workyears:	100.7	100.7	89.8	(10.9)

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Project XL	$3,359.9	$3,359.9	$3,454.4
Common Sense Initiative	$3,812.5	$3,812.5	$2,133.7

FY 2000 Request

Project XL was created in March 1995 as part of President Clinton's and Vice President Gore's *Reinventing Environmental Regulations*. Under this initiative, projects will provide regulated entities and other stakeholders with the opportunity to develop and implement alternative

environmental management strategies that achieve superior environmental performance in lieu of otherwise applicable rules and regulations. This objective supports sector-based environmental management as part of the Agency's commitment to pursue common sense approaches. The Common Sense Initiative (CSI) has been the centerpiece of a new generation of environmental protection and has led to the integration of a sector-based approach within the Agency. EPA's sustainable industry programs provide a strong foundation for the CSI and other programs similar in orientation and direction.

EPA has made significant progress in reinventing its programs in recent years. It continues to be critical for EPA to lead efforts to reform the environmental regulatory system to achieve better results at less cost, without sacrificing public health or environmental protection. The Office of Reinvention consolidated the full range of Agency reinvention efforts within one office. It oversees Agency-wide initiatives such as CSI and Project XL. The office has primary responsibility for meeting the commitments in the March 1995 *Reinvention Environmental Regulation* report issued by President Clinton and Vice President Gore. The office is available to assist regulated entities in seeking innovative and flexible new ways to meet strong environmental standards, and will cooperate with the Center for Environmental Information and Statistics to meet the Agency's burden reduction goals.

In 2000, CSI activities will focus on completing existing projects and implementing actions associated with the CSI Federal Advisory Committee Act (FACA) Council recommendations as it transitions to a broader, more integrated sector-based approach. The CSI FACA Council will become a Committee on Sectors under the National Advisory Council on Environmental Policy and Technology (NACEPT). The Agency will promote the sector based approach to environmental protection by building sector identification into rules, regulations, and policy/guidance documents. It will also include the building of sector search capacity into existing databases, establishment of regional and national sector-specific liaisons, piloting two to four multi-program efforts in high priority sectors with stakeholder input, and establishment of a foundation for future sector work across the Agency.

The Agency will move forward with lessons learned from the highly successful CSI metal finishing sector to pursue innovative approaches to Sector-Based Environmental Protection through the Sustainable Industry Sector Program. This establishes a systematic, "life-span" process for industrial sector-based environmental programs. The process includes the use of established criteria for selecting sectors and a unique methodology for identifying opportunities for "cleaner, cheaper, and smarter" performance in selected industries. Through the Sustainable Industry process, the Agency will continue to work with EPA programs and outside stakeholders to develop incentives, create tools, and remove barriers to improved environmental performance with reduced regulatory burden. The Agency has made good faith commitments to work in partnership with the following sectors to complete successive stages of the Sustainable Industry sector development process, leading to replication of the metal finishing goals model: specialty-batch chemical manufacturing, meat processing, photo processing, tourism and recreation, and metal casting. The cumulative

impact of industries addressed by the Agency is approximately 14% of GDP, 10% of TRI emissions, and 17% of national energy use.

In the process of developing sectoral approaches, EPA has added greatly to the set of tools it uses to effectively and efficiently deliver environmental quality, promote pollution prevention, and increase risk reduction. While EPA continues to rely on standard setting, permitting and enforcement, these traditional tools are now often augmented by compliance assurance, voluntary programs, stakeholder involvement and many new sector based processes and programs designed to ensure quicker or more effective results. Further, many of the emerging environmental issues are simply not subject to or amenable to traditional regulatory approaches (e.g. commuter choices for transportation).

Sector strategies complement current EPA activities by allowing the Agency to approach issues more holistically, with integrated strategies for each industry sector; tailor efforts to the particular characteristics of each sector; identify related groups of stakeholders with interest in a set of issues; link EPA's efforts with those of other agencies; and craft new approaches to environmental protection. Sector strategy groups bring together stakeholders from businesses, environmental groups, all levels of government, and community groups to identify the environmental issues facing a specific industry as a basis for solving environmental problems, which affords EPA the opportunity to examine an industry or sector of the economy holistically. Sustainable industry programs serve as incubators and developers of innovative approaches to environmental policy making, testing alternative regulatory and programmatic approaches through regional projects, and multi-stakeholder processes. Sustainable industry approaches will offer valuable supplements to traditional environmental policy and may become the predominant means for environmental protection in the 21st century.

The Agency will continue to take a leadership role in addressing issues that affect broad sectors of the economy, such as natural resources, transportation, energy, development and smart growth, and the services industry. The Agency will continue to promote positive change in sectors that affect regional growth and economic development through the development of analytic tools and collaborative networks, particularly the Smart Growth Network. These tools and the Network assist local governments in understanding the environmental implications of their economic development decisions by providing opportunities to share information on the latest trends in smart construction, to learn about innovative financing for land infill, to access tools to evaluate competing development options, and to pilot money-saving investments which reap economic and environmental benefits.

FY 2000 Change from FY 1999 Enacted

<u>EPM</u>

- (+$110,600, -5.0 FTE) Reflects a redirection from CSI activities to sector based environmental protection.

- (-$1,851,300 and -5.9 workyears) Resources for Common Sense Initiative (CSI) metal finishing sector activities are decreased from 1999 as the CSI council transitions to National Advisory Council on Environmental Policy and Technology (NACEPT) committee and the sector based approach is integrated into Agency programs. These resources will assist the CSI subcommittees to complete specific projects, implement their recommendations and establish a future for sector based work.

- The 2000 Request is $9,725,000 below the 1999 Enacted level due to Congressional earmarks for support of livestock waste studies and environmental technology initiatives, which will not be sustained in the FY 2000 President's Request.

Annual Performance Goals and Performance Measures

Increase Sector Programs

In 2000 Promote and implement sector wide environmental strategies through the metal finishing programs and expand other industry sector programs that will lead to better environmental performance with greater economic efficiency.

In 1999 Promote and implement sector-wide environmental strategies that achieve better environmental performance with greater economic efficiency.

Performance Measures	FY 1999	FY 2000
Increase Smart Growth Network	50 Percent	
Implementation of National Metal Finishing Strategic Goals Program	350 companies	425 companies

Baseline: The baselines for performance are 1998 levels of participation: 250 companies, 15 states and 5 manufacturing industry sector programs in various stages of development; 300 network members and 2500 individuals/organizations receiving information.

Reduce Emissions, Water Use, Energy Use

In 2000 Implement sector-wide environmental strategies that will lead to reduced priority emissions, TRI emissions, water use, energy use and VOC emissions as well as non-point source pollution and nitrogen fertilizer use among participating firms.

In 1999 Participating companies will affect reduced priority emissions, reduced non-point source pollution, and reduced nitrogen fertilizer use.

Performance Measures	FY 1999	FY 2000
Reduced emissions	35 Percent	30 Percent

Baseline: 35 percent reduction in emissions.

Project XL

In 2000	All 50 Project XL projects will be implemented.
In 1999	By 1999, a total of 50 Project XL projects will be in development or implementation, an increase of 23 over 1998.

Performance Measures	FY 1999	FY 2000
Number of Project XL projects in implementation	50 projects	50 projects

Baseline: In 1998, the Agency had 27 XL projects in development or implementation (cumulative number). In 1999, it is anticipated that a total of 50 XL projects agreements will be in the development or implementation phases. All 50 projects will be in implementation in 2000.

Verification and Validation of Performance Measures

The Office of Reinvention will maintain records on the number of Project XL project agreements that have been completed, as well as the number of projects that are in implementation.

Performance targets for the National Metal Finishing Strategic Goals Program will be verified by milestones of program implementation (number of participating facilities, establishment of state goals programs, etc) and by data from the various tracking and bench marking systems. These systems are being set up to quantitatively measure facility progress toward the resource utilization and environmental protection goals in the program, burden reduction goals for facilities and other stakeholders, and completion of Action Plan commitments for all stakeholders. The Goals Program will be the first national sector program to be able to measure and verify progress toward performance goals. The success of all other sector-based and Sustainable Industry Program activities will be verified by the implementation of sector-specific policies, projects, and programmatic changes; the growing support of opinion leaders and other stakeholders; and performance measurement efforts that will demonstrate the effectiveness of this program in achieving cleaner, cheaper, and smarter environmental performance in selected sectors.

Statutory Authorities:

National Environmental Policy Act
The Economy Act of 1932
TSCA sections 4, 5, and 6 (15 U.S.C. 2603, 2604, and 2605)
PPA (42 U.S.C. 13101-13109)
CWA
CAA
RCRA

Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems

Objective # 8: Regional Enhancement of Ability to Quantify Environmental Outcomes

By 2005, Regions will have demonstrated capability to assess environmental conditions in their Region, compare the relative risk of health and ecological problems, and assess the environmental effectiveness of management action in priority geographic areas.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Regional Enhancement of Ability to Quantify Environmental Outcomes	**$7,995.1**	**$6,505.5**	**$7,659.8**	**$1,154.3**
Environmental Program & Management	$4,613.7	$3,407.6	$4,371.6	$964.0
Hazardous Substance Superfund	$3,381.4	$3,097.9	$3,288.2	$190.3
Total Workyears:	4.6	4.6	4.6	0.0

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Regional Science and Technology	$7,995.1	$6,021.0	$7,659.8

FY 2000 Request

The major activities within this objective are supplying field, analytical, technical, and data management support to base program needs; developing and sharing new source sampling and analytical approaches; and converting environmental data into useful decision-making information.

The Regional Science and Technology program functions are involved with monitoring environmental data, responding to environmental emergencies, sample collection, transport, laboratory analysis, and data review and evaluation. Scientific and technical services provided will include: improved state-of-the-art sampling, analysis and assessment methods; establishing networks with private, state, and academic institutions; ecosystem and pollutant modeling capabilities; as well as field investigations, quality assurance, and Geographic Information Systems.

FY 2000 Change from FY 1999 Enacted

MULTI-APPROPRIATION

- (+$964,000 EPM, +$190,300 SF) Increases will be used to fund peer review and increased analytical support for PM 2.5 monitoring.

Annual Performance Goals and Performance Measures

Regional Scientific Equipment

In 2000 Upgrade regional scientific equipment.

Performance Measures	FY 1999	FY 2000
Scientific equipment upgraded	100% inv & assess	100% inv & assess

Baseline: End of fiscal year inventory determines necessary equipment upgrades.

Verification and Validation of Performance Measures:

An end of fiscal year inventory will be conducted which will identify equipment which requires replacement.

Statutory Authorities:

Multi-media

Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems

Objective # 9: Science Advisory Board Peer Review

Conduct peer reviews and provide guidance on the science underlying Agency decisions.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Science Advisory Board Peer Review	**$2,586.7**	**$2,486.7**	**$2,636.2**	**$149.5**
Environmental Program & Management	$2,586.7	$2,486.7	$2,636.2	$149.5
Total Workyears:	22.5	22.5	22.5	0.0

FY 2000 Request

The Science Advisory Board (SAB) provides independent expert advice to Congress, the Administrator, and the Agency on scientific and engineering issues that serve as the underpinnings for Agency regulatory decision making. Congress established the SAB in 1978 and gave it a broad mandate to advise the Agency on technical matters. The SAB's 100 members and more than 300 consultants include scientists, engineers, and other specialists drawn from a broad range of disciplines -- physics, chemistry, biology, mathematics, engineering, ecology, economics, medicine, and other fields. The men and women of the SAB come from a variety of organizations doing scientific work -- academia, industry, and independent laboratories. The variety of backgrounds in this diverse and technically well-qualified group helps to ensure a balanced range of outside views on the Board.

Each year, the Administrator and EPA program offices nominate numerous issues to the SAB for peer review. The SAB selects several of these issues for review each year, culminating in reports that help the Agency make better use of science in its decision-making process. The issues that are not selected for review can be nominated again the following year. The SAB's broad, objective review of important scientific and technical issues promotes sound science within the Agency's scientific and technical programs.

In addition to peer reviews, the SAB is occasionally tasked with conducting major studies (e.g., the 1995 "Beyond the Horizon" report which discusses the importance of employing methods to anticipate environmental risks that might emerge over the next 20 years). The timing of these studies is not predictable. Major studies typically take multiple years to complete, and are extremely resource intensive. For example, in 1996-1998, the SAB conducted the Integrated Risk Project, a major study on ranking relative environmental risks.

During years in which the SAB is not involved in a major study, the Board is able to dedicate more resources to peer reviews and, therefore, complete a larger number of peer review reports.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$149,500) Resource changes reflect increased workforce costs.

Annual Performance Goals and Performance Measures

Science Advisory Board

In 2000	The Science Advisory Board will complete 75% of peer review reports within 4 months.
In 1999	The SAB will complete peer review reports within 4 months

Performance Measures	FY 1999	FY 2000
Report time to completion	50% in 4 mos	75% in 4 mos

Baseline: In 1999, 40% of the SAB's peer review reports will be competed within 4 months of the final peer review meeting.

Coordination with Other Agencies

While it is important for the SAB to interact with the Advisory Committees of other Federal agencies and departments, it has proven difficult to maintain regular interactions. However, the Board interacts with -- informally and through changing interactions -- the City of Columbus SAB and the SABs of the Netherlands and Australia. The chairs of the Board of Scientific Counselors and the Science Advisory Panel attend the SAB Executive Committee (EC) meetings. We have invited the managers of the SABs from the Department of Defense and the Department of Energy to attend our EC and meet periodically with the National Research Council of the National Academy of Sciences.

Statutory Authorities

Federal Advisory Committee Act (5 U.S.C. App.)

Sound Science, Improved Understanding of Environmental Risk, and Greater Innovation to Address Environmental Problems

Objective # 10: Incorporate Innovative Approaches to Environmental Management

Incorporate innovative approaches to environmental management into EPA programs, so that EPA and external partners achieve greater and more cost-effective public health and environmental protection.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Incorporate Innovative Approaches to Environmental Management	**$4,334.1**	**$4,034.1**	**$4,378.1**	**$344.0**
Environmental Program & Management	$4,334.1	$4,034.1	$4,378.1	$344.0
Total Workyears:	20.0	20.0	20.0	0.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Reinvention Programs, Development and Coordination	$4,334.1	$4,334.1	$4,378.1

FY 2000 Request:

In 1998, the Administrator established the Office of Reinvention within the Office of the Administrator, which consolidated the full range of Agency reinvention efforts within one office. The Office of Reinvention serves as an important gateway for stakeholders/customers to interact with EPA on reinvention. The office builds relationships needed to make reinvention successful, brokers participation in reinvention programs inside and outside EPA, and amasses ideas on new approaches to the way EPA does business.

Reinvention is a broad-based, Agency-wide strategy for achieving cleaner, cheaper, smarter results from environmental programs. By rethinking problems and the solutions typically used to solve them, reinvention engages Agency managers and staff in finding better ways of doing business without imposing unnecessary costs and regulatory burdens. EPA has developed a dual strategy for reinventing environmental protection: (1) innovating and streamlining the current regulatory system (e.g., consolidate and simplify regulations and reporting requirements, and streamline permitting), and (2) designing and testing integrative and holistic approaches (e.g., sector and industry based approaches, and community based environmental protection, partnership programs). Through reinvention, EPA is implementing strategies that lead to better protection at less cost, and is moving beyond the single media focus of the past to better address today's environmental challenges.

The Office of Reinvention tracks and measures reinvention progress and ensures that reinvention activities are evaluated. Evaluations look at both what's working and what's not working, focusing on a wide range of criteria, including: meeting goals and objectives, achieving environmental results more efficiently and effectively, better serving customers and stakeholders, improving the management of programs and resources, and fulfilling statutory mandates.

FY 2000 Change from FY 1999 Enacted:

EPM

- (+$344,000): Reflects restoration of reductions taken in 1999, as well as increased workforce costs for the Office of Reinvention.

Annual Performance Goals and Performance Measures

Reinvention Evaluation

In 2000 Evaluate Agency reinvention activities for progress in achieving environmental results more efficiently and effectively, better serving customers and stakeholders, and improving the management of program resources.

Performance Measures	FY 1999	FY 2000
Evaluate major Agency reinvention activities		Major evaluations

Baseline: 1 report in 1999

Regulatory Flexibility

In 1999 Implement proposals to improve regulatory flexibility.

Performance Measures	FY 1999	FY 2000
Number of proposals developed	1 proposals	

Baseline: 1 annual report in 1998

Statutory Authorities:

Multi-media

Goal 9: Credible Deterrent

Goal 9: A Credible Deterrent to Pollution and Greater Compliance with the Law IX-1
Enforcement Tools to Reduce Non-Compliance IX-5
Increase Use of Auditing, Self-Policing Policies IX-25

Environmental Protection Agency

2000 Annual Performance Plan and Congressional Justification

A Credible Deterrent to Pollution and Greater Compliance with the Law

Strategic Goal: EPA will ensure full compliance with the laws intended to protect human health and the environment.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
A Credible Deterrent to Pollution and Greater Compliance with the Law	**$332,733.8**	**$319,390.3**	**$331,335.0**	**$11,944.7**
Enforcement Tools to Reduce Non-Compliance	$283,209.4	$272,965.9	$292,917.6	$19,951.7
Increase Use of Auditing, Self-Policing Policies	$49,524.4	$46,424.4	$38,417.4	($8,007.0)
Total Workyears:	2,559.3	2,554.4	2,540.1	-14.3

Background and Context

Protecting the public and the environment from risks posed by violations of environmental requirements is, and always has been, basic to EPA's mission. Many of America's environmental improvements over the last 25 years are attributable to a strong set of environmental laws and an expectation of compliance with those laws. EPA's strong and aggressive enforcement program has been the centerpiece of efforts to ensure compliance, and has achieved significant improvements in human health and the environment.

Means and Strategies

Many of the environmental improvements in this country during the past three decades can be attributed to a strong set of environmental laws and EPA's aggressive enforcement of them. Due to the breadth and diversity of private, public, and federal facilities regulated by EPA under various statutes, the Agency needs to target its enforcement and compliance assurance activities strategically to address the most significant risks to human health and the environment and to ensure that certain populations do not bear a disproportionate environmental burden. A strong enforcement program identifies noncompliance problems, punishes violators, strives to secure a level economic playing field for law-abiding companies, and deters future violations. EPA's continued enforcement efforts

will be strengthened through the development of measures to assess the impact of enforcement activities and assist in targeting high priority areas.

State, Tribal and local governments bear much of the responsibility for ensuring compliance, and EPA works in partnership with them and other Federal agencies to promote environmental protection. Further, EPA cooperates with other nations to enforce and ensure compliance with international agreements affecting the environment. At the Federal level, EPA addresses its responsibilities under the National Environmental Policy Act (NEPA) by seeking remedies for potentially adverse impacts of major actions taken by EPA and other Federal agencies.

The Agency's enforcement and compliance assurance program uses compliance assistance and incentives tools to enhance voluntary compliance with regulatory requirements and reduce adverse public health and environmental problems. Maximum compliance requires the active efforts of the regulated community to police itself. EPA supports the regulated community by assuring that requirements are clearly understood and by helping industry find cost-effective options to comply through the use of pollution prevention and innovative technology. EPA will continue to explore options for encouraging self-directed audits and disclosure; measuring and evaluating the effectiveness of Agency programs in improving compliance rates; providing information and compliance assistance to the regulated community; and developing innovative approaches to meeting environmental standards through better communication, cooperative approaches and application of new technologies.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Enforcement Tools to Reduce Non-Compliance

By: 2000 Deter and reduce noncompliance and achieve environmental and human health improvements by maintaining a strong, timely and active enforcement presence. EPA will direct enf. actions to maximizing compliance and address environmental and human health problems; 75% of concluded enforcement actions will require environmental or human health improvements, such as pollution reductions and/or physical or management process changes.

By: 2000 Deter non-compliance by maintaining appropriate levels of compliance monitoring activity, particularly in priority areas. In 2000, EPA will conduct 15,700 inspections and investigations, 50% of which are targeted at priority areas

By: 2000 Improve capacity of states, localities and tribes to conduct enforcement and compliance assurance programs. EPA will provide grants, guidance documents, training, classes and seminars, and assist with selected inspections.

By: 2000 Ensure compliance with legal requirements by assuring that hazardous waste exports

from the U.S. are properly handled. Implement U.S. international commitments, and gain enforcement and compliance cooperation with other countries, especially along U.S. borders (Mexico/Canada).

Objective 02: Increase Use of Auditing, Self-Policing Policies

By: 2000 Increase entities self-policing and self-correction of environmental problems through use of EPA incentive policies: small business, small community and audit policies over FY97 levels.

Highlights

Compliance Monitoring and Civil and Criminal Enforcement

EPA will continue to support deterrence and compliance activities by devoting a vast majority of its compliance monitoring resources for on-site inspections including monitoring, sampling and emissions testing. In 2000, the compliance monitoring program will continue the cross-cutting, multi-media initiative begun in 1999 which make full use of the Agency's statutory authorities.

In 2000, the Agency's enforcement initiatives will include support of the Clean Water Action Plan (CWAP) in terms of increased enforcement in priority watersheds and the Children's Health Initiative by supporting air quality enforcement efforts. In 2000, the Agency will provide funding to support a tribal training program to assist tribal regulatory officials in effectively managing compliance and enforcement programs.

Compliance Assistance and Incentives

The Agency will continue to support compliance assistance and incentive tools to enhance voluntary compliance with regulatory requirements and reduce public health problems. In 2000, the Compliance Incentives program will continue to implement the policy on Incentives for Self-Policing as a core element of the enforcement and compliance assurance program. The Compliance Assistance program will continue to provide information and technical assistance to the regulated community to increase its understanding of all statutory or regulatory environmental requirements.

State and Tribal Capacity

In 2000, the Agency's enforcement and compliance assurance program will work with and support state agencies implementing authorized, delegated, or approved environmental programs. The Agency provides grant funding, oversight, training and technical assistance to states and tribes. We are requesting additional funds to develop and implement compliance and enforcement programs on tribal lands. The increase will build upon a base program which assists tribes in

implementing pesticide compliance and enforcement programs on tribal lands where states have no enforcement authority.

External Factors

EPA's enforcement program's ability to meet its annual performance goals may be affected by a number of factors. Projected performance would be impacted by natural catastrophes, such as major floods, or significant chemical spills, that require a redirection of enforcement resources to address immediate environmental threats. Many of the targets are predicated on the assumption that state and tribal partners will continue or increase their levels of enforcement and compliance work. If these assumptions do not come to fruition, EPA's resources may be needed to cover priority areas. In addition, several EPA targets rely on the Department of Justice (DOJ) to accept and execute case loads. The success of EPA's activities hinge on the availability and applicability of technology and information systems. Finally, the regulated community's level of effort to comply with the law will greatly influence EPA's ability to meet its performance goals.

Other factors such as the number of projects subject to scoping requirements initiated by other federal agencies, the number of draft/final documents (Environmental Assessments and Environmental Impact Statements) submitted to EPA for review, streamlining requirements of Transportation Equity Act for the 21st Century (TEA-21), and the responsiveness of other federal agencies to environmental concerns raised by EPA may also impact the Agency's ability to meet its performance goals.

The Agency's ability to address issues under the National Environmental Policy Act (NEPA) may be significantly affected by the number of project proposals submitted to EPA for funding or permits that require NEPA compliance.

Environmental Protection Agency

2000 Annual Performance Plan and Congressional Justification

A Credible Deterrent to Pollution and Greater Compliance with the Law

Objective # 1: Enforcement Tools to Reduce Non-Compliance

Identify and reduce significant non-compliance in high priority program areas, while maintaining a strong enforcement presence in all regulatory program areas.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Enforcement Tools to Reduce Non-Compliance	**$283,209.4**	**$272,965.9**	**$292,917.6**	**$19,951.7**
Environmental Program & Management	$190,770.5	$181,844.0	$200,936.9	$19,092.9
Science & Technology	$8,662.8	$8,583.9	$8,892.9	$309.0
State and Tribal Assistance Grants	$67,079.3	$67,884.4	$68,284.3	$399.9
Hazardous Substance Superfund	$16,696.8	$14,653.6	$14,803.5	$149.9
Total Workyears:	2,074.7	2,078.0	2,192.1	114.1

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Civil Enforcement - CWAP/AFO Related	$0.0	$0.0	$1,462.0
RCRA State Grants	$43,536.9	$43,222.7	$43,227.0
Compliance Monitoring	$65,015.0	$56,838.9	$64,170.3
Civil Enforcement	$86,821.2	$83,090.4	$89,863.6
Criminal Enforcement	$35,412.0	$33,786.5	$35,635.4
Compliance Assistance and Centers	$0.0	$37.2	$0.0

Enforcement Training	$5,085.8	$4,435.8	$5,117.2
State Pesticides Enforcement Grants	$18,392.4	$19,511.4	$19,911.6
State Toxics Enforcement Grants	$5,150.0	$5,150.0	$5,150.0

FY 2000 Request

Protecting the public and the environment from risks posed by violations of environmental requirements is, and always has been, basic to EPA's mission. EPA's strong and aggressive enforcement program has been the centerpiece of efforts to ensure compliance, and has achieved significant improvements in public health and the environment. By identifying and addressing violations of environmental statutes and regulations, the enforcement and compliance assurance program will work toward continuous improvement in compliance with standards, permits and other requirements established by EPA to mitigate and avoid environmental problems and the associated risk.

Given the scope of its responsibilities and the large and diverse universe of private, public, and federal facilities regulated under the various statutes, the Agency also will work to maximize its effectiveness by strategically targeting its enforcement and compliance activities to address the most significant risks to human health and the environment and to address disproportionate burden on certain populations. A strong enforcement and compliance program achieves environmental protection by identifying noncompliance problems, punishing violators and deterring future violations, while ensuring a level economic playing field for law-abiding companies.

State, Tribal and local governments bear much of the responsibility for ensuring compliance, and EPA will work with them and other Federal agencies to promote environmental protection. Further, EPA will cooperate with other nations to enforce and ensure compliance with international agreements affecting the environment. These activities also ensure a level economic playing field in an increasingly global trading system.

In 2000 the Agency's enforcement and compliance assurance program will measure its performance not only in terms of inspections, enforcement actions and similar measures, but also in terms of the human health and environmental outcomes the program produces. This annual plan contains new annual performance goals and measures to show results such as pollutant reductions, returning violators to compliance and behavioral changes resulting from compliance assistance efforts. These newer measures will complement the traditional enforcement measures and portray a more complete picture of the impact of the enforcement and compliance assurance program.

The enforcement and compliance assurance key program areas for this objective follow:

Compliance Monitoring

Compliance Monitoring reviews and evaluates the activities of the regulated community to determine compliance with applicable laws, regulations, permit conditions and settlement agreements and to determine whether conditions presenting imminent and substantial endangerment may exist. The vast majority of EPA's compliance monitoring resources are used by the regions to conduct on-site inspections including monitoring, sampling and emissions testing. Compliance monitoring activities are both media and sector based. The traditional media approach assures monitoring of activities critical to meeting the air, water, pesticides, etc. national environmental goals. The newer multi-media approaches such as cross-media inspections, sector initiatives, and risk-based targeting allow the Agency to take a more holistic approach to protecting ecosystems and to solving the more intractable environmental problems.

In 2000 the compliance monitoring program will continue the cross-cutting, multi-media initiatives begun in 1999 which make full use of the Agency's statutory authorities; e.g., the Imminent and Substantial Endangerment provisions which EPA is using to prevent and address significant harm to people's health and the environment. A second cross-media initiative will be to continue the development of compliance and enforcement strategies for specific industry sectors. This initiative strikes a balance between the need for a comprehensive national focus on key industry sectors and the need for flexibility to accommodate Regional and State specific issues and concerns.

In addition to the cross-cutting, multi-media priorities the program will continue addressing in 2000 the media specific compliance monitoring base program. Each media program has unique priorities:

- The Hazardous Waste compliance monitoring program will continue to emphasize Underground Storage Tanks (USTs). The program will monitor the release detection requirements and the requirements for upgrading, replacing, or closing USTs not protected against spills, overfills and corrosion.

- The TSCA compliance monitoring program will especially concentrate on the Section 1018 lead-based paint requirements, as well as the Section 402/404 requirements in states which do not have approved programs.

- The FIFRA program will emphasize discovering false and misleading claims for antimicrobial products, as well as proper labeling for worker protection.

- The EPCRA program will emphasize data quality and non-reporters.

- The Drinking Water program will emphasize monitoring of compliance with the Safe Drinking Water Act Amendments of 1996, using recently developed strategies.

- The Water Quality program will continue to concentrate compliance monitoring activities in targeted high risk sectors, ecosystems, and populations and will emphasize run-off from wet weather events.

- The Stationary Source program will conduct inspections at Federal facilities using new enforcement penalty authorities that were clarified in 1997.

The Federal facilities enforcement program conducts compliance monitoring of Federal agency operations. Under the Federal Facilities Compliance Act (FFCA), EPA will conduct hazardous waste inspections of all Federal treatment, storage and disposal (TSD) facilities. The program will also conduct single and multi-media inspections to ensure Federal facility compliance with all applicable laws, regulations, and executive orders with emphasis on areas with new or enhanced penalty authority (e.g., SDWA, CAA, UST, TSCA §408). In addition, the Federal facility program is upgrading and improving compliance planning and reporting by other Federal agencies through the use of the Fedplan-PC data reporting system.

Reliable, comprehensive and up-to-date data systems are key to EPA's ability to effectively target compliance monitoring at the highest priority facilities and areas. EPA will continue to maintain and support the critical elements of the enforcement and compliance data systems in 2000. In addition, a major focus of the 2000 compliance monitoring program is the continuation of the Enforcement and Compliance Information (ECI) initiative. ECI will align enforcement and compliance data and systems with EPA-wide initiatives and OECA's strategic plan; offer enhanced information management capabilities to improve OECA's effectiveness in tracking compliance and enforcement activities across media, industry sectors, and regulatory programs; and resolve problems in historical systems including data quality and timeliness issues, inefficient data entry and reporting, and high maintenance costs.

EPA will continue work in 2000 on the development of the ECI initiative, a long-range project, which includes a core module of enforcement and compliance data that is common to all systems, the General Enforcement Management System (GEMS). ECI will enable the Agency and its stakeholders to modernize enforcement and compliance systems to improve data integration and consistency, and it will facilitate public access to the data. EPA's ECI milestones for 2000 include: beginning the detailed design for GEMS; beginning the detailed design for the Permit Compliance System (PCS) data system; beginning the concept phase for the Toxics and Pesticides information systems; and continued support of the development of the enforcement and compliance modules of the Resource Conservation and Recovery Information System (RCRIS) and the Safe Drinking Water Information System (SDWIS).

Other data enhancements in 2000 will aid in the risk-based strategic targeting of enforcement and compliance assistance, placing information obtained through targeting approaches into spatial and demographic context.

Civil and Criminal Enforcement

The Agency's Civil Enforcement program supports the National Environmental Goals through consistent and focused enforcement of all the environmental statutes. Civil Enforcement supports achievements of the national goals by addressing violations of environmental laws and ensuring that violators come into compliance with these laws and regulations. Civil enforcement's overarching goal is to protect public health and the environment and therefore targets its actions based on health and environmental risk. Further, it aims to level the economic playing field by ensuring that violators do not realize the economic benefit of non-compliance, and it seeks to deter future violations.

The Civil Enforcement program is responsible for the development, litigation and settlement of administrative and civil judicial cases. In 2000, the program will develop guidance and policy for technical evaluations, investigations, and case development strategies which may include the use of injunctive relief, supplemental environmental projects (SEPs) and other civil penalties. The Headquarters program will provide expert advice and legal counsel on nationally significant enforcement actions and will initiate investigations against violators operating nationally.

Headquarters staff will also participate in regulatory development and related interpretive guidance to insure their enforceability. In addition, the program will provide training and assistance to Regions and states in the calculation of economic benefit gained by violators for use in determining settlements and/or penalties.

The civil enforcement program is supported by both technical staff in the regions and legal staff in the regional counsel offices. While the RCRA corrective action program is primarily covered under the Better Waste Management Goal, the enforcement program's regional counsels support this Objective 1 of the Credible Deterrent Goal by developing and issuing RCRA corrective action orders and by reviewing state applications for corrective action authorization.

In 2000 the civil enforcement program will conduct investigations, and review and analyze evidence of non-compliance. The program will prepare cases for referral to the Department of Justice (DOJ). Once a case has been referred, civil enforcement staff will work closely with DOJ providing expert advice on interpretations of laws and regulations, and on the appropriate injunctive relief and penalty to be sought (and SEP, as appropriate) to ensure consistent implementation of laws, regulations, and national policies.

In 2000, enforcement initiatives will include such Agency priorities as the President's Clean Water Action Plan (CWAP) and Children's Health Initiative. Additional enforcement priorities include actions to abate imminent and substantial endangerment(s) to protect public health and the environment, and lead certification and training.

In 2000 the Civil Enforcement program will implement the action items related to CWAP which require increased enforcement against non-compliant wet weather dischargers (combined

sewer overflows, sanitary sewer overflows, and storm water). The program will concentrate enforcement in priority watersheds as well as in areas where beaches and shellfish beds have been closed due to wet weather discharges. Consistent with the CWAP and its watershed based approach, civil enforcement will also focus on permit violators (both majors and minors) and other unpermitted discharges in priority watersheds.

In addition, the civil enforcement program will continue to implement the Concentrated Animal Feeding Operations (CAFO) strategy as well as the joint EPA-USDA Unified National Strategy for Animal Feeding Operations. Finally, civil enforcement will provide national support to the CWAP through enforcement of the plan's action item on restoring and creating new wetlands. Increased enforcement of wetlands requirements is key to meeting the CWAP goal of a net increase in wetlands of 100,000 acres per year by 2005.

In support of the Children's Health initiative, the air civil enforcement program will redirect resources from lower risk activities (Asbestos NESHAP) in 2000 to support PSD/NSR enforcement efforts. Significant non-compliance in this area results in poor air quality for different NAAQS, especially ozone precursors (NOX) and particulate matter. Enhanced enforcement efforts will result in improvement of human health, especially asthma in children.

Also in 2000 the civil enforcement program will increase its focus on enforcement of MACT standards for air toxics. Enforcement activities in this area will complement Office of Air and Radiation efforts and reduce health risks to exposed populations, especially children. Resources will be redirected from lower priority civil enforcement activities.

Other important enforcement activities in 2000 include supporting the Imminent and Substantial Endangerment program. This program addresses risks associated with chemical and hazardous materials on a site-specific basis and strives to prevent accidents before they occur or reoccur. Through these efforts EPA can reduce risks to residents and workers, especially in minority and low-income neighborhoods where industrial chemical facilities are disproportionately located.

Minor redirections in the TSCA enforcement program will provide additional resources to support enforcement of the Lead Abatement Rule and the Renovation and Disposal Rules in states that are not authorized to run the program. Approximately 20 states are not requesting authorization for the lead abatement program.

The Federal Facilities Enforcement program will continue to ensure that Federal Facilities and government-owned-contractor-operated (GOCO) facilities conduct their activities in an environmentally sound manner and comply with all applicable environmental statutes and regulations. In 2000 EPA will continue to use all enforcement tools, including order and penalty authorities, to ensure Federal facilities' compliance with all applicable environmental laws and regulations.

The Criminal Enforcement program brings to bear the most serious sanctions for the most significant environmental violations. By demonstrating to the regulated community that serious, knowing statutory violations will be met with harsh sanctions in terms of both fines and jail sentences, the program acts to forcefully deter violations of environmental laws and regulations in a way that civil judicial and administrative enforcement rarely can do. EPA's special agents, located nationwide, will conduct criminal investigations, develop information to support grand jury inquiries and decisions, and work with other law enforcement agencies to present a highly visible and effective force in the Agency's enforcement strategy. Cases are referred to the U.S. Attorney's Offices or the Department of Justice for prosecution, with special agents serving as key witnesses in these judicial proceedings.

In 2000, the criminal program will continue to support Agency enforcement initiatives including priority sectors, environmental justice and the Children's Health initiative. EPA's efforts to work more closely and cooperatively with industry are complemented by the Criminal Enforcement program as the Agency sends a clear message to the regulated community that those who choose to cooperate, in good faith, will reap the benefits of that partnership while those whose non-compliance is distinguished by culpable conduct can expect the serious implication of criminal investigation and prosecution. As the Agency's criminal program continues to gain experience, success in piercing the corporate veil will result in increasing numbers of individual defendants.

Specialized forensic support for the nation's most complex civil and criminal enforcement cases and technical expertise for non-routine Agency compliance efforts will be provided by the National Enforcement Investigation Center (NEIC). To effectively support these programs, NEIC must maintain state-of-the-art skills and equipment, capable of dealing with an increasingly sophisticated regulated community. In 2000, NEIC will continue to develop emerging technologies in analytical techniques. Efforts to stay at the forefront of environmental enforcement will include the refinement of successful multi-media inspection approaches, use of customized lab methods to solve unusual enforcement case problems, and establishment of a computer forensic expertise for use in seizure and recovery of data and in investigative support related to computers and data fraud. The Center's lab, field and information activities will continue to be performed with the scientific integrity necessary to withstand technical scrutiny and cross-examination, developing evidence which meets all legal requirements for successful prosecution of civil and criminal cases.

The NEIC will provide technical support for the initiatives identified as 2000 priorities in the civil program including Animal Feeding Operations, Children's Health, and MACT standards for air toxics. The NEIC will support the Agency's integrated compliance monitoring program which views the regulated community on a multimedia basis within the context of an industrial sector or geographic area. Using screening and targeting methodologies developed at the NEIC, EPA inspectors will direct compliance monitoring at areas with the greatest potential for risk reduction. NEIC staff will also conduct on-site multimedia and process based inspections, resulting in increased compliance by many of the nation's largest and most complex industries.

State and Tribal Capacity

A strong state and tribal enforcement and compliance assurance presence contributes to creating deterrence and to reducing non-compliance. In 2000, the enforcement and compliance assurance program will work with and support state agencies implementing authorized, delegated, or approved environmental programs. Consistent with regulations and EPA policy, EPA will provide an appropriate level of oversight and guidance to states to ensure that environmental regulations are fairly and consistently enforced across the nation. The Agency provides grant funding, oversight, training and technical assistance to states and tribes. The state and tribal grant programs are designed to build environmental partnerships with states and tribes and to strengthen their ability to address environmental and public health threats. These threats include contaminated drinking water, pesticides in food, hazardous waste, toxic substances and air pollution.

In 2000, the Agency's enforcement and compliance assurance program will continue to work with state and tribal organizations (agencies and associations) to facilitate communication and cooperation that strengthens these partnerships. The program will participate in regular meetings and encourage other formal contacts between senior managers on enforcement and compliance assurance issues and promote a constructive dialog with our state co-regulators on enforcement and compliance policy development.

The program will award $25,061,600 in state and tribal enforcement cooperative agreements in 2000 to assist in the implementation of the enforcement provisions of the Toxic Substances Control Act (TSCA) and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). These grants support state compliance activities to protect the environment from harmful chemicals and pesticides.

The program will continue to administer the Pesticides and Toxic Substances Enforcement State grants. Under the Pesticides Enforcement Grant program, states will continue to conduct FIFRA compliance inspections and implement programs for groundwater and farm worker protection. States will also use these funds to begin pesticide use reduction projects.

States will receive funding for toxic substances state grants for implementation of the state lead enforcement program under Title IV of TSCA. The funds will complement other Federal program grants for building state capacity for lead abatement. States will also continue to receive funding for compliance and enforcement of TSCA section 6 programs for asbestos and PCBs.

The 2000 program will continue to address the increased workload placed on the states as a result of the Food Quality Protection Act. The food safety program is almost entirely a state run program. States will use these resources to increase their inspections of pesticides newly regulated by the legislation.

In 2000 the Agency will provide $1,519,200 in pesticides enforcement grants to assist Indian Tribes. The Agency provides funding to tribes to implement pesticide compliance and enforcement

programs on Tribal lands where states have no enforcement authority. Over twenty Tribes are participating in this grant program in 1998, using the grants to build compliance and enforcement programs for pesticide standards, regulations, and other requirements established under Tribal law.

In addition to these FIFRA and TSCA grants, the Solid Waste program provides RCRA state grants for compliance monitoring and enforcement activities . EPA provides these grants to build effective and well targeted compliance and enforcement programs. Prevention, deterrence and use of sector approaches are key criteria in setting priorities in state RCRA programs. State inspections and enforcement actions are major factors in preventing mismanagement of hazardous waste which threatens human health and the environment.

States will inspect federal, state and local RCRA facilities that store, treat or dispose of hazardous waste. Inspections will emphasize compliance with facility-specific requirements or interim status requirements. RCRA enforcement orders and supplemental environmental projects will incorporate waste minimization provisions where appropriate. In 2000 the states will continue their intensified program of compliance assurance at commercial combustion facilities.

EPA works with Indian tribes on a government to government basis to identify enforcement, compliance assistance, and capacity building issues affecting tribal lands. The Agency's goal is to help tribes develop their own enforcement and compliance assistance programs so that they can assume greater management of environmental programs in Indian Country. In FY 2000, the enforcement and compliance assurance program will implement the Indian Program Strategy which will enhance both direct federal enforcement and tribal enforcement and compliance capacity-building efforts. These efforts will help implement the Agency-wide Indian Policy of working with tribal governments as full partners to enhance protection of the public health and the environment on tribal lands.

Training is another important aspect of state, local and tribal capacity building. The National Enforcement Training Institute (NETI) is mandated by the Pollution Prosecution Act to provide environmental enforcement training nationally. In 2000, NETI will oversee the design of core and specialized enforcement courses and their delivery to lawyers, inspectors, civil and criminal investigators and technical experts. In seeking to provide timely, targeted technical training courses to as wide an audience as possible, NETI will expand access to its program by building a training center on the Internet. "NETI Online" will offer training to Federal, State, local and tribal enforcement professionals. The website will provide the structure for developing and tracking individual training plans, as well as managing NETI's training delivery processes. In addition, the Agency provides specialized training in criminal environmental law enforcement at the Federal Law Enforcement Training Center (FLETC) in Glynco, GA. FLETC is operated by the Department of the Treasury and was established to train law enforcement personnel who carry firearms. EPA has entered into an agreement with Treasury to arrange training in environmental criminal investigations for state, local and tribal law enforcement professionals as well as EPA criminal enforcement staff. In 2000 NETI will provide one of the few opportunities for state, local and tribal enforcement professionals to obtain criminal investigations training.

International Enforcement and Compliance

The Agency's enforcement and compliance assurance program has international responsibilities in two key areas in 2000. The first is the import and export of hazardous waste. EPA will manage an import/export waste tracking system which monitors the trans-boundary movement of hazardous waste to ensure that these wastes are properly handled in accord with international agreements and RCRA regulations.

The second area is involvement with Canada and Mexico. In 2000, work with the trilateral Commission for Environmental Cooperation (Canada and Mexico), on which the Administrator sits as U.S. Commissioner, will focus on (1) control of CFCs and persistent toxic chemicals, (2) monitoring and control of hazardous waste, (3) promotion of voluntary compliance, and (4) information and technical exchange. In 2000, the bilateral efforts with Mexico will include cooperative efforts to bring civil and criminal enforcement actions along the border; clean-up of colonias and prosecution of colonias developers; improving a bi-national computer system to effectively track hazardous waste movement; promoting compliance by Mexican subsidiaries of U.S. companies (maquiladoras) by encouraging their participation in Mexico's voluntary audit program; and supporting community-based enforcement and compliance partnerships with the border states and technical assistance to Mexico, including environmental impact assessments.

FY 2000 Change from FY 1999 Enacted

Civil and Criminal Enforcement Compliance Monitoring

EPM

- ($1,882,200, 25 workyears) The Agency redirected these contracts and workyears (within its base) from lower risk enforcement efforts to higher enforcement priorities. These include: shifting a total 20.0 workyears within the Water Quality Civil Enforcement program from lower priority activities, such as actions against significant non-compliers not in priority watersheds, to support the Clean Water Action Plan (CWAP); and, shifting a total 5.0 workyears within the Air Civil Enforcement program from lower risk CFC enforcement to higher priority enforcement targeting of facilities in areas with high incidence of asthma. This latter redirection supports the Children's Health Initiative.

- (+$5,855,100, +75.0 FTE) OECA has recently undertaken a resource information collection exercise as part of its program management and accountability functions. One main purpose was to ascertain whether OECA had accurately assigned resources as the Agency moved to the goal and objective structure in the 1999 annual plan. An analysis of regional resource information indicated that OECA identified resources performing compliance assistance under Goal 9, Objective 2, that should have been under Goal 9, Objective 1, because those resources were actually conducting inspections and pursuing civil enforcement cases.

Therefore, the 2000 plan corrects this problem by shifting a total of 75.0 Regional workyears and associated payroll dollars from objective two to objective one.

- (+3,676,600, +50.0 FTE) The Program redefined these resources that support state and local capacity building (i.e., enforcement and compliance partnerships, training) and moved them from Goal 9, Objective 2.

- (+5,965,000) Funds were provided to cover increased costs associated with the workforce.

- (-9 FTE) OECA transferred nine workyears for the Integrated Data Enforcement and Analysis (IDEA) and the Sector Facility Index Project (SFIP) that support objective 1 of Goal 7.

- (-1.3 FTE) OECA realigned 1.3 FTE for Program Management.

- (-$175,000) The Program reduced contract support from the international enforcement and compliance assurance program. This will end grant assistance to the U.S. states along the Mexican Border. States use these grants to control hazardous waste shipments and disposal in the border area and to force developers of colonias housing to provide basic water and sewer service. It will also end EPA activities to promote voluntary compliance and to bring together officials from both sides of the border to improve enforcement against illegal shipment and disposal of hazardous waste and ozone depleting substances.

STAG

- (+$400,000) Reflects an increase for the development and implementation of pesticide compliance and enforcement programs on tribal lands. The increase will build upon a base program which assists tribes in implementing pesticide compliance and enforcement programs on tribal lands where states have no enforcement authority.

Annual Performance Goals and Performance Measures

Non-Compliance Reduction

In 2000 Deter and reduce noncompliance and achieve environmental and human health improvements by maintaining a strong, timely & active enforcement presence. EPA will direct enforcement actions to maximize compliance and address environmental and human health problems; 75% of concluded enforcement actions will require environmental or human health improvements, such as pollutant reductions and/or physical or management process changes.

Performance Measures	FY 1999	FY 2000
Percent of actions which require pollutant reductions		35 percent
Estimated pounds of pollutants reduced (aggregate)		300 M pounds

Estimate statistically valid noncompliance rates or other indicators of noncompliance for selected environmental problems	5 indicators
Establish baseline to measure percentage of significant violators with reoccurring significant violations within 2 years of returning to compliance.	1 baseline
Establish baseline to measure average length of time for significant violators to return to compliance or enter enforceable plans/agreements	1 baseline
Produce report on the number of civil and criminal enforcement actions initiated and concluded.	1 reports

Baseline: By the end of FY99 the program will be able to report statistically valid non-compliance rates for selected EPA programs, selected sectors & other special populations (e.g., fully-inspected universes).

Compliance Monitoring Activities

In 2000 Deter non-compliance by maintaining appropriate levels of compliance monitoring activity, particularly in priority areas. In 2000, EPA will conduct 15,700 inspections and investigations, 50% of which are targeted at priority areas.

In 1999 Deter non-compliance by maintaining levels of field presence and enforcement actions, particularly in high risk areas and/or where populations are disproportionately exposed. In 1999, EPA will conduct 15,000 inspections and undertake 2,600 enforcement actions.

Performance Measures	**FY 1999**	**FY 2000**
Number of criminal and civil investigations		700 investigations
Number of EPA inspections		15000 inspections
Percent of inspections and investigation (civil and criminal) conducted at priority areas		50 percent
EPA Inspections	15000 Inspections	

Baseline: The number of inspections conducted annually has remained fairly consistent in recent years. This information is the basis for the 2000 projections, with adjustments made for changes in resource levels. In 2000, the enforcement program will target 50% of its inspections to priority areas. These areas will be identified in an internal guidance document which sets forth specific priorities for 2000 and forms the basis for this calculation.

Capacity Building

In 2000 Improve capacity of states, localities and tribes to conduct enforcement and compliance assurance programs. EPA will provide grants, guidance documents, training, classes and seminars, and assist with selected inspections.

In 1999 Assist states and tribes with their enforcement and compliance assurance and incentive programs. EPA will provide specialized assistance and training, including 83 courses, to state and tribal officials to enhance the effectiveness of their programs.

Performance Measures	**FY 1999**	**FY 2000**
Specialized assistance & training	83 Courses	
Number of EPA training classes/ seminars delivered to states, localities and tribes to build capacity		83 Courses
Number of EPA-assisted inspections		100 inspections

Baseline: 89 training sessions in FY97.

Quality Assurance

In 2000 Maintain and improve quality and accuracy of EPA's enforcement and compliance assurance data to identify noncompliance and focus on human health and environmental problems.

In 1999 Target high priority areas for enforcement and compliance assistance and complete baseline data assessment in major databases needed to measure quality of key indicators of compliance. The Agency will identify five high priority areas and improve 2 of their data systems.

Performance Measures	**FY 1999**	**FY 2000**
Data system improvement to capture changes to 98 base	2 Data System	
Complete concept and begin design phase of General Enforcement Mgt system (GEMS)		09/30/2000 date
Develop and implement Quality Management Plans (QMPs) for remaining major systems, including baseline data assessment.		3 plans
continue concept phase and begin design phase of PCS modernization		09/30/2000 date

Baseline: EPA has generally reliable data for its compliance monitoring & enforcement activities, although the Agency is working to modernize these data systems & improve data integration & consistency. The Agency will complete baseline assessments of the data systems by the end of 1999. These assessments include data quality issues such as completeness, integrity, and accuracy. Beginning in 2000, the Agency will conduct annual audits.

International Enforcement

In 2000	Ensure compliance with legal req. by assuring that hazardous waste exports from the U.S. are properly handled. Implement U.S. international commitments, and gain enforcement and compliance cooperation with other countries, especially along U.S. borders (Mexico/Canada).
In 1999	Implement international commitments and U.S. Government priorities for enforcement compliance cooperation with other countries, especially along the U.S. borders (Mexico and Canada).
In 1999	Ensure compliance w/legal requirements by assuring that hazardous waste exports from the U.S. are properly handled. Implement U.S. international commitments, and gain enforcement and compliance cooperation w/other countries, especially along U.S. borders (Mexico/Canada).

Performance Measures	**FY 1999**	**FY 2000**
Import / Export Notifications	1600 Notifications	
Ensure proper handling of 230,000 tons of hazardous waste exports		230,000 tons
Ensure proper handling of 200,000 tons of hazardous waste exports	200,000 tons	

Baseline: 226,000 tons in FY 1997 of hazardous waste exports.

Verification and Validation of Performance Measures

The following are databases that contain baseline performance information and their sources for the enforcement and compliance assurance program:

- National Compliance Data Base (NCDB) / FIFRA/TSCA Tracking system (FTTS) - EPA Headquarters (HQ), EPA regions, and states.
- DOCKET - EPA HQ and regions
- Permit Compliance System (PCS) - EPA regions and states
- FIFRA Section Seven Tracking System (SSTS) - EPA regions
- FIFRA Laboratory Inspection Study Audit (LISA) - EPA HQ and regions
- Pesticide Registration Enforcement System (PRES) - EPA HQ
- Waste Import Tracking System (WITS) - EPA regions
- CERCLIS - EPA regions
- Integrated Data for Enforcement Analysis (IDEA) - EPA compliance and enforcement data bases and external data sources
- Resource Conservation and Recovery Information System (RCRIS) - EPA regions and states (11) Safe Drinking Water Information System (SDWIS) - EPA regions and states
- AIRS Air Facility Subsystem (AFS) - EPA regions and states and locals
- Asbestos Contractor Tracking System (ACTS)/ National Asbestos Registry System (NARS) - EPA regions and states

While specific data entry/QC practices may vary by individual system, each system has been developed in accordance with Office of Information Resources Management (OIRM) Lifecycle Management Guidance. The systems incorporate data validation processes and include internal screen audit checks and verification, detailed system and user documentation, data quality audit reports, third party testing reports and detailed report specifications for showing how report data are calculated. EPA is also developing and implementing detailed system specific Quality Management Plans for all its systems. These plans will include development of Data Quality Objectives, Quality Assurance Project Plans and Standard Operating Procedures. The enforcement program conducted data evaluation and implement improved processes during 1998 and 1999 for enforcement data related to anticipated environmental outcomes.

Continuous and accurate data entry to the national data systems is crucial to EPA's ability to assess compliance with environmental laws and regulations. Questions have been raised -- internally and externally -- about the quality and completeness of the data in the systems as well as the ability of our existing systems to meet our data needs. Differences in the definitions of noncompliance applied by state agencies and/or state failure to report to EPA in a timely and comprehensive fashion affect EPA's ability to determine compliance patterns across the national program. However, many state and EPA staff have noted difficulty in using the systems and that the data are not useful for program implementation. Some of the data limitations reflect systems problems -- for example, enforcement systems are on multiple platforms and use different software, many of which are technologically obsolete and difficult to use. Further, the incompatible database structures and designs make effective multi-media analysis extremely difficult and provide questionable results. Differences in data definitions within each system make it difficult to link facility data for all media programs.

The enforcement program will also undertake modernization design in 2000 and will complete the concept and design phase of the General Enforcement Management System (GEMS). GEMS will be designed to be a consolidated enforcement and compliance data management system that will support the core information needs of EPA's National Enforcement and compliance Assurance program . Utilizing business process re-engineering techniques and system life cycle management processes for its development, this system will include such basic components as tracking of facility inspections, violations and enforcement actions, as well as addressing more complex needs for compliance assistance tracking, multimedia planning, targeting and evaluation. GEMS will, to the maximum extent possible, provide a consistent framework, process and structure for how the Agency collects and tracks compliance and enforcement information with consistent elements across all statutory programs, e.g., air, water, and waste.

A number of external reports and internal reviews have described problems in the quality of EPA's data quality and analysis of enforcement and compliance information. A data quality survey, widely distributed within EPA Headquarters and Regions and to nine states, solicited respondents' views on the nature and extent of enforcement and compliance data problems. A subsequent Strategic and Tactical Automation Plan, developed to address these problems and criticisms,

supports the Environmental Compliance Initiative and other data management improvements. Regional reviews of data quality of enforcement and compliance information will continue in 2000.

A series of reports issued by EPA Inspector General in 1997 address problems states have identifying and reporting of Clean Air Act significant violators, which has impaired EPA's ability to evaluate the levels of noncompliance in that program. As follow up, the enforcement and compliance assurance program is preparing trend analyses using information in the AFS to identify states most likely to have problems.

With significant state participation, EPA is working on several projects to obtain more comprehensive and accurate compliance information for the universe of regulated entities:

- The National Performance Measures Strategy, intended to identify and implement an enhanced set of performance measures for EPA's enforcement and compliance program, will provide new, more detailed information on levels of compliance in regulated populations and enhanced data on environmental and public health improvements from enforcement efforts.

- For five key industrial sectors, the Sector Facilities Indexing Project (SFIP) provides environmental and background data, including numbers of inspections, compliance with Federal regulations, enforcement actions taken, chemical releases and spills, location and production capacity, and surrounding population.

- Other sector-based initiatives implemented in partnership with industry, including root cause analyses projects, are designed to provide more detailed accounts of inspection and enforcement activity over time, violations by media and by specific pollutants released, and the causes of these violations.

- The Enforcement and Compliance Information (ECI) program, a long-range initiative to re-engineer EPA's approach to integrated information, is intended to improve data quality and its uses and to improve public access and understanding of enforcement and compliance data.

- The Quality Management Plan (QMP) project, to be completed in 2000, establishes system specific data quality objectives which specify how data will be used and limits on decision errors. QMP's involve developing quality assurance project plans to document how quality assurance and quality control activities will be implemented, setting standard operating procedures for assessing data quality; and conducting quality reviews to assess progress in meeting our goals. QMPs are underway for the NCDB and RCRIS systems and were completed in 1999 for PCS, AIRS and DOCKET.

- The enforcement and compliance assurance program's DOCKET System is used to record Federal administrative and judicial enforcement actions by the Regions and headquarters. This system is the source of official action on Federal enforcement. The records include information on company name, facility location, statute under which the action was taken,

penalties, costs of coming into compliance, nature of complying action needed to be taken (e.g. industrial process change, emissions reduction), pollutants addressed, and Supplemental Environmental Projects. Information on State enforcement is tracked in other National media data systems such as RCRIS, PCS, and AFS, and is not as detailed.

Coordination with Other Agencies

The enforcement and compliance assurance program coordinates closely with the U.S. Department of Justice on all enforcement matters. In addition, the program coordinates with other agencies on specific environmental issues as described below:

The RCRA Enforcement and Compliance Monitoring program coordinates with the National Accident Investigation Board, OSHA, and ATDSR in preventing and responding to accidental releases and endangerment situations; and, with the Bureau of Indian Affairs on tribal issues relative to compliance and enforcement of underground storage tank and RCRA Subtitle C requirements.

The Water Enforcement and Compliance Monitoring program coordinates with the US Army Corps of Engineers on Section 404 issues (wetlands). Moreover, due to changes in the Food Security Act, the US Department of Agriculture/Natural Resources Conservation Service (USDA/NRCS) has a major role in the determination of whether areas on agricultural lands meet the definition of wetlands and are therefore regulated under the Clean Water Act. Civil Enforcement coordinates with USDA/NRCS on these issues also. The program coordinates closely with the Department of Agriculture on the implementation of the Unified National Strategy for Animal Feedlot Operations.

The Toxics and Pesticides Enforcement and Compliance Monitoring program coordinates with USDA on food safety issues arising from the misuse of pesticide, and shares joint jurisdiction with FTC on pesticide labeling and advertising. EPA and the Food and Drug Administration (FDA) share jurisdiction over general purpose disinfectants used on non-critical surfaces and some dental and medical equipment surfaces (e.g., wheelchairs). Finally, the Agency has entered into a Memorandum of Understanding with the Department of Housing and Urban Development concerning TSCA Section 1018 (lead poisoning).

The Criminal Enforcement program coordinates with other federal law enforcement agencies (i.e. FBI, Customs, Treasury, U.S. Coast Guard, DOJ) and with state and local law enforcement organizations in the investigation and prosecution of environmental crimes. EPA is also actively working with DOJ to establish task forces which bring together federal, state and local law enforcement organizations to address environmental crimes. In addition, the National Enforcement Training Institute has an Interagency Agreement with the Department of Treasury to provide specialized criminal environmental training to Federal, State and local law enforcement personnel at the Federal Law Enforcement Training Center (FLETC) in Glynco, GA.

Under E.O. 12088 EPA is directed to provide technical assistance to other Federal agencies to help ensure their compliance with all environmental laws. The Federal Facility Enforcement Program coordinates with other Federal agencies, states, and local and tribal governments to ensure compliance with all environmental laws.

The civil enforcement and compliance monitoring programs work closely with the states. States perform the vast majority of inspections and enforcement actions. Most EPA statutes envision a partnership between EPA and the states under which EPA develops national standards and policies and the states implement the program under authority delegated by EPA. If a state elects not to take delegation of a program, EPA has a mandatory duty to implement that program in the state. Historically, the level of delegation has increased as programs mature and state capacity has expanded, and many of the key environmental programs are approaching full delegation. EPA will continue to coordinate with states on training and capacity building and on enforcement

The International Enforcement and Compliance program works directly with Canada and Mexico bilaterally and in the trilateral Commission for Environmental Cooperation (CEC). EPA's border activities require close coordination with the U.S. Customs Service, the Fish and Wildlife Service, the Department of Justice, and the States of Arizona, California, New Mexico and Texas.

Statutory Authority

Resource Conservation and Recovery Act sections 3007, 3008, 3013, and 7003 (42 U.S.C. 6927, 6928, 6934, 6973)

Comprehensive Environmental Response, Compensation, and Liability Act sections 106, 107, 109, and 122 (42 U.S.C. 9606, 9607, 9609, 9622)

Clean Water Act (CWA) sections 308, 309, and 311 (33 U.S.C. 1318, 1319, 1321)

Safe Drinking Water Act sections 1413, 1414, 1417, 1422, 1423, 1425, 1431, 1432, 1445 (42 U.S.C. 300g-2, 300g-3, 300g-6, 300h-1, 300h-2, 300h-4, 300i, 300i-1, 300j-4)

Clean Air Act sections 113, 114, and 303 (42 U.S.C. 7413, 7414, 7603)

Toxic Substances Control Act (TSCA) sections 11, 16, and 17 and TSCA Titles II and IV (15 U.S.C. 2610, 2615, 2616, 2641-2656, 2681-2692)

Emergency Planning and Community Right-to-Know Act sections 325 and 326 (42 U.S.C. 11045, 11046)

Federal Insecticide, Fungicide, and Rodenticide Act sections 8, 9, 12, 13, and 14 (7 U.S.C. 136f, 136g, 136j, 136k, 136l)

Ocean Dumping Act sections 101, 104B, 105, and 107 (33 U.S.C. 1411, 1414B, 1415, 1417)

North American Agreement on Environmental Cooperation

1983 La Paz Agreement on US/Mexico Border Region

National Environmental Policy Act (NEPA) section 102(f)

Pollution Prosecution Act of 1990 (42 U.S.C. section 4321 note)

A Credible Deterrent to Pollution and Greater Compliance with the Law

Objective # 2: Increase Use of Auditing, Self-Policing Policies

Promote the regulated communities' voluntary compliance with environmental requirements through compliance incentives and assistance programs.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Increase Use of Auditing, Self-Policing Policies	**$49,524.4**	**$46,424.4**	**$38,417.4**	**($8,007.0)**
Environmental Program & Management	$45,700.3	$43,940.3	$35,757.9	($8,182.4)
Science & Technology	$97.9	$0.0	$0.0	$0.0
State and Tribal Assistance Grants	$3,333.4	$2,214.2	$2,214.2	$0.0
Hazardous Substance Superfund	$392.8	$269.9	$445.3	$175.4
Total Workyears:	484.6	476.4	348.0	(128.4)

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Project XL	$2,911.8	$2,904.6	$3,008.5
Common Sense Initiative	$1,085.8	$1,082.8	$714.3
Compliance Assistance and Centers	$24,375.9	$23,178.2	$18,054.5
Compliance Incentives	$4,203.4	$4,075.6	$3,646.0
NEPA Implementation	$9,521.3	$9,401.6	$9,697.7
State Pesticides Enforcement Grants	$1,119.2	$0.0	$0.0
State Toxics Enforcement Grants	$2,214.2	$2,214.2	$2,214.2

FY 2000 Request

The enforcement and compliance assurance program uses compliance assistance and incentives tools to enhance voluntary compliance with regulatory requirements and reduce adverse public health and environmental problems.

By providing compliance incentives to the regulated community, the Agency motivates and enhances the capacity and the will of the regulated community to fully comply with the law and to voluntarily and promptly disclose violations before they come to the attention of the government.

The Agency also provides compliance assistance to the regulated community. This assures that the community understands its obligations by providing clear and consistent descriptions of regulatory requirements. Compliance assistance can also help regulated industries find cost-effective ways to comply through the use of pollution prevention and innovative technologies.

This objective also addresses EPA's responsibilities under the National Environmental Policy Act (NEPA). NEPA requires that Federal agencies consider the environmental consequences of their activities. EPA's NEPA program reviews major actions taken by other Federal agencies and by EPA to ensure that adverse effects are identified and are either eliminated or mitigated.

Compliance Incentives

In 2000, the Compliance Incentives program will continue to implement EPA's Audit/Self-Policing Policy as a core element of the enforcement and compliance assurance program. The audit policy was developed in 1995 to encourage voluntary auditing and the use of compliance management systems to prevent, detect and remedy environmental violations. Under the policy, where violations are found through voluntary environmental audits or a compliance management system, and are promptly disclosed and expeditiously corrected, EPA will not seek gravity-based penalties and will generally not recommend prosecution against the regulated entity. EPA will reduce gravity-based penalties by 75% for violations that are voluntarily discovered, and are promptly disclosed and corrected, even if not found through a formal audit or compliance management system.

EPA is particularly interested in encouraging disclosures at multi-facilities because such disclosures allow regulated entities to review their operations holistically and remedy environmental problems nationwide. They also enable the Agency to focus its inspection resources on entities that fail to identify and correct their own environmental violations. The Agency will continue to encourage industry or sector-wide use of audit incentives such as the recently announced pork producer compliance audit program. The program benefits the environment by providing an incentive for participating pork producers to find and correct Clean Water Act violations and prevent discharges to waterways without compromising the ability of EPA or states to enforce the law. In 2000, the Agency will also implement recommendations from an evaluation of the audit policy which will further increase the effectiveness and implementation of the policy.

In 2000 the Compliance Incentives program will evaluate the effectiveness of environmental management systems (EMSs) for improving compliance and environmental performance. The results of this evaluation will provide the program with a better understanding of the effectiveness of EMSs and data to determine whether additional regulatory incentives are needed to encourage their use.

Under the Agency's Common Sense Initiative (CSI), the enforcement and compliance assurance program has the lead for the printing sector. The CSI is a collaborative effort to build consensus on providing environmental protection among representatives from industry, labor, community-based and national environmental groups, environmental justice groups and federal/state government bodies. The Agency's 2000 resources will be used for meeting facilitation, providing technical assistance to stakeholders, and funding pilot projects.

The enforcement and compliance assurance program will also continue to participate in Project XL (eXcellence in Leadership) projects, projects under the EPA/State regulatory innovation agreements, and other reinvention partnerships. The Agency recognizes that alternative approaches to environmental protection are experimental in nature, may not work as expected and necessarily involve some degree of risk. To ensure the public is not exposed to unnecessary risk, the program will focus on ensuring these projects are legally enforceable where necessary, provide accountability and transparency for participants, and an orderly return to compliance in the event of project termination. The program will also assist in verifying and evaluating project results.

For Federal facilities, EPA will continue sponsoring Project XL/ENVEST. This initiative allows regulatory flexibility so that facilities can focus on the most significant areas for achieving compliance. In 2000 the Federal Facilities Enforcement program will oversee and provide compliance assistance to XL projects initiated by Department of Defense (DOD), Department of Energy (DOE) and civilian Federal agencies (CFA).

Compliance Assistance

The Agency's Compliance Assistance Program provides information and technical assistance to the regulated community to increase its understanding of all statutory or regulatory environmental requirements and aims to achieve risk reduction and measurable compliance results. In 2000, the program will continue to develop and disseminate strategies which focus compliance and enforcement activities on commercial and industrial sectors, to establish measures by which to evaluate the successes of compliance activities, to work with media program offices to provide an integrated capability to assess national progress in meeting compliance goals, and to identify targets for compliance and enforcement initiatives. The program will also continue to develop compliance assistance tools such as outreach programs to the regulated community, plain-English guides, and compliance assistance components for inspector or operator training programs.

Regional resources in 2000 will support Headquarters in industry-specific outreach to the regulated community by providing sector-based materials and services and training sessions to

improve industry's regulatory and technical knowledge. The regions will promote adoption of innovative technologies, including and waste minimization.

In accordance with the President's Regulatory Reinvention Initiative, the compliance assistance program will continue to support nine environmental compliance assistance centers in 2000. These centers provide small businesses in selected industry sectors one-stop shopping for regulatory and technical assistance, pollution prevention activities, and other information particularly suited to the individual industries. The Compliance Assistance program will develop and make available information such as fact sheets, self-compliance check-lists, and pollution prevention case studies, and will place this information on the World Wide Web.

The Compliance Assistance program will also use the broad authority available under TSCA to support state and tribal multimedia compliance assistance in 2000. States and tribes will address compliance problems with specific industries and/or economic sectors.

In 2000 the Federal facility enforcement program will continue to provide technical guidance to other Federal agencies and to states in carrying out executive orders and their environmental programs, as well as providing guidance on complying with pollution prevention laws requirements and applicable environmental laws at Federal facilities. The program will provide on-site assistance and training under Executive Order 12856, "Federal Compliance with Right-To-Know Laws and Pollution Prevention requirements," which covers approximately 2,500 Federal facilities. In addition, the Federal facility program will continue its compliance assistance effort in accordance with E.O. 12088, "Federal Compliance with Pollution Control Standards," which requires Federal agencies to develop comprehensive pollution prevention strategies and reduce their emissions of toxic chemicals or toxic pollutants by 50 percent. The Federal facility program reviews other Federal agencies plans submitted through FEDPLAN, covering 15,000 installations.

In addition, Federal facilities are now required to comply with all provisions of Emergency Planning and Community Right-to-Know Act (EPCRA) and the Pollution Prevention Act (PPA), including Toxic Release Inventory (TRI) reporting requirements. EPA will work with the other Federal agencies in 2000 on meeting these requirements. In 2000, the program's compliance assistance efforts will particularly focus on civilian federal agencies, such as the Department of Interior (DOI) facilities and developing an on-line compliance assistance center for civilian federal agencies.

NEPA Implementation

The NEPA Implementation program reviews environmental impacts of proposed major Federal actions as required by the National Environmental Policy Act (NEPA), §309 of the Clean Air Act, the Antarctic Science, Tourism, and Conservation Act (ASTCA), and the Executive Order on environmental justice, and develops policy and technical guidance on issues related to NEPA, the Endangered Species Act (ESA), the National Historic Preservation Act (NHPA) and relevant Executive Orders. The program emphasizes cooperation with other federal agencies to ensure

compliance with applicable environmental laws and better integration of pollution prevention and ecological risk assessment into their programs. The program also targets high impact federal program areas, such as water resources and transportation/energy related projects. In 2000 the program will be a significant player in implementing the Transportation Equity Act for the 21st Century (TEA-21) through early involvement and intensive review in the NEPA process. The program also manages the Agency's official filing activity for all federal Environmental Impact Statements (EIS) in accordance with a Memorandum of Understanding with the Council on Environmental Quality.

The NEPA Implementation program also guides EPA's own compliance with NEPA, other applicable statutes, and environmental justice requirements. These efforts include: EPA-issued new source National Pollutant Discharge Elimination System permits in the eight undelegated states and for off-shore oil and gas sources; EPA laboratories and facilities; and, remaining projects under the Title II construction grants program.

FY 2000 Change from FY 1999 Enacted

Compliance Assistance

EPM

- (+$126,900 and -5.8 workyears) The Agency will reduce OECA's participation in the Common Sense Initiative (CSI) by 5.8 total workyears as the CSI Council transitions to the National Advisory Council on Environmental Policy and Technology (NACEPT) committee and the sector based approach is integrated into Agency programs. The Agency will increase funding by $126,900 in contracts to support CSI in the Printing Sector through workgroup meetings and other outreach related activities.

- (-$5,855,100, -75.0 FTE) OECA has recently undertaken a resource information collection exercise as part of its program management and accountability functions. One main purpose was to ascertain whether OECA had accurately assigned resources as the Agency moved to the goal and objective structure in the 1999 annual plan. An analysis of regional resource information indicated that OECA identified resources performing compliance assistance under Goal 9, Objective 2, that should have been under Goal 9, Objective 1, because those resources were actually conducting inspections and pursuing civil enforcement cases. Therefore, the 2000 plan corrects this problem by shifting a total of 75.0 Regional workyears and associated payroll dollars from objective two to objective one.

- (-3,676,600, -50.0 FTE) The Program redefined these resources that support state and local capacity building (i.e., enforcement and compliance partnerships, training) and moved them to Goal 9, Objective 1.

- (-$480,000) The Agency will reduce its compliance assistance activities with the expectation that the states will assume the majority of this work in 2000. These reductions include:$100,000 from compliance assistance guidance and tools development; and, $380,000 from compliance assistance to Federal facilities for compliance assistance activities.

Annual Performance Goals and Performance Measures

Compliance Incentives

In 2000 Increase entities self-policing and self-correction of environmental problems through use of EPA incentive policies: small business, small community and audit policies over FY98 levels.

Performance Measures	FY 1999	FY 2000
Number of facilities that self-disclosed potential violations.		1150 facilities

Baseline: Under EPA's audit policy as of January 1996, 274 companies have disclosed environmental violations at more than 966 facilities nationally & EPA has reduced or waived penalties for 105 companies at 452 facilities.

Regulated Communities

In 2000 Increase the regulated community's compliance with environmental requirements through their expanded use of compliance assistance. The Agency will continue to operate small business compliance assistance centers and develop compliance assistance tools such as sector notebooks and compliance guides.

In 1999 Increase regulated community's use of compliance incentives and their understanding of, and ability to comply with, regulatory requirements. The Agency will continue to operate 9 small business compliance assistance centers and will complete sector notebooks, guides, and other outreach materials begun in FY98.

In 1999 The Agency will continue to operate 9 Compliance Assistance Centers, and provide compliance assistance tools such as 5 sector guides.

Performance Measures	FY 1999	FY 2000
Compliance Assistance Centers in Operation	9 Centers	
Compliance Tools Development	5 Sector Guides	
Federal Facility Management Reviews	15 Reviews	
Total number of facilities reached through targeted compliance asst.		331,500 facilities
Number of Compliance Asst. Tools developed		185 tools

Increase Compliance Asst. Center usage	15 percent

Baseline: The Enforcement & Compliance Assurance program collects information from the Regions annually on how many facilities are being reached through compliance assistance efforts. In 1997, EPA conducted 8,830 activities across all sectors and statutes and reached 342,310 facilities. The number of compliance assistance tools developed in 1997 was 1,190. This is the basis for determining the 2000 projection.

Federal Actions

In 1999 Review 100% of major proposed Federal actions subject to the National Environmental Policy Act (NEPA) & successfully mitigate 70% of identified significant environmental impacts (ie, those requiring EPA follow-up) through interagency negotiations.

Performance Measures	**FY 1999**	**FY 2000**
Number of Draft Environmental. Impact Statements requiring EPA follow-up	650 impacts	
Percentage of impacts requiring EPA follow-up which are successfully mitigated	70 percent	
Number of major proposed Federal actions, i.e., Draft Environmental Impact Statements (DEIS) filed	325 DEISs	

NPDES Permit Review

In 1999 Review and document 100% of water treatment facility and New Source NPDES permits subject to NEPA and ensure projects meet all water quality requirements.

Performance Measures	**FY 1999**	**FY 2000**
% of EPA NEPA compliance actions documented	100 percent	
Percentage of actions meeting water quality requirements	100 percent	

Verification and Validation of Performance Measures

The following database contains Goal 9, Objective 2, baseline performance information and the sources providing this information:

- Docket - EPA HQ and regions

The enforcement and compliance assurance program's DOCKET System is used to record Federal administrative and judicial enforcement actions by the Regions and headquarters. This system is the source of official action on Federal enforcement. The records include information on company name, facility location, statute under which the action was taken, penalties, costs of coming

into compliance, nature of complying action needed to be taken (e.g. industrial process change, emissions reduction), pollutants addressed, and Supplemental Environmental Projects.

Information on the application of the self-policing policy, as well as targeted assistance, is tracked manually. The enforcement and compliance assurance program will complete the assessment of recording and producing information on the self-policing policy in DOCKET.

In 1997 the enforcement and compliance assurance program assessed its 1996 targeted compliance assistance data and developed a series of recommended improvements. The program implemented several improvements in 1997 and 1998 to manually track compliance assistance data. The program continues to assess the suitability of tracking targeted compliance assistance in the national database systems.

Coordination with Other Agencies

Compliance Assistance: The Compliance Assistance program and the U.S. Department of Agriculture (USDA) have created an Agricultural Compliance Assistance Center and continue to work closely with them. The program has in place two IAGs with USDA to award funds to Land Grant Universities to develop compliance and pollution prevention materials.

The compliance incentives and assistance programs work closely with the states. States are performing an increasing amount of compliance incentives and assistance. The compliance assistance centers have been coordinated with the states to assist them in their outreach efforts to industry, to facilitate their delivery of sector-specific regulatory information, to serve as the delivery mechanism for their pollution prevention and compliance assistance material, and to build their capacity to meet the environmental needs of the businesses in their states and localities. EPA expects these centers to become self-sustaining.

The enforcement program works with states prior to and following enactment of state audit privilege and immunity legislation to identify and express the Agency's policy and legal concerns. EPA has adopted a pragmatic, problem-solving approach to addressing legal adequacy in specific states that have enacted audit privilege and immunity laws . EPA and the state use a process under which they identify any legal impediments to federal program authorization resulting from the state's law. The impediments can then be addressed through tailored statutory amendments, or a state Attorney General opinion interpreting the law consistent with federal requirements, or both. EPA has completed this process in six states--Utah, Texas, Michigan, Wyoming, Ohio, and Virginia.

NEPA Implementation: EPA is required to review the environmental impact statements (EIS) and other major actions impacting the environment and public health proposed by all federal agencies, and make recommendations to the proposing federal agency on how to remedy/mitigate those impacts. Although EPA is required under §309 of the Clean Air Act (CAA) to review and comment on proposed Federal actions, neither the NEPA nor §309 CAA require a Federal agency

to modify its proposal to accommodate EPA's concerns. Accordingly, EPA's recommendations must be negotiated with the other Federal agency. The majority of actions EPA reviews are filed by the Forest Service, Department of Transportation (including Federal Highway Administration and Federal Aviation Administration), Army Corps of Engineers, Department of the Interior (including Bureau of Land Management, Minerals Management Service and National Park Service), Department of Energy (including Federal Regulatory Commission), and Department of Defense.

Statutory Authority

Resource Conservation and Recovery Act sections 3007, 3008, 3013, and 7003 (42 U.S.C. 6927, 6928, 6934, 6973)

Comprehensive Environmental Response, Compensation, and Liability Act sections 106, 107, 109, and 122 (42 U.S.C. 9606, 9607, 9609, 9622)

Clean Water Act (CWA) sections 308, 309, and 311 (33 U.S.C. 1318, 1319, 1321)

Safe Drinking Water Act section 1413, 1414, 1417, 1422, 1423, 1425, 1431, 1432, 1445 (42 U.S.C. 300g-2, 300g-3, 300g-6, 300h-1, 300h-2, 300h-4, 300i, 300i-1, 300j-4)

Clean Air Act section 113, 114, 303, and 309 (42 U.S.C. 7413, 7414, 7603, 7609)

Toxic Substances Control Act (TSCA) sections 11, 16, and 17 and TSCA Titles II and IV (15 U.S.C. 2610, 2615, 2616, 2641-2656, 2681-2692)

Emergency Planning and Community Right-to-Know Act section 325 and 326 (42 U.S.C. 11045, 11046)

Federal Insecticide, Fungicide, and Rodenticide Act sections 8, 9, 12, 13, and 14 (7 U.S.C. 136f, 136g, 136j, 136k, 136l)

Ocean Dumping Act sections 101, 104B, 105, and 107 (33 U.S.C. 1411, 1414B, 1415, 1417)

National Environmental Policy Act (NEPA)

1987 Montreal Protocol on Ozone Depleting Substances
1978 Great Lakes Water Quality Agreement (GLWQA)
1909 The Boundary Waters Treaty

Objective # 2: Climate Change

By 2000 and beyond, U.S. greenhouse gas emissions will be reduced to levels consistent with international commitments agreed upon under the Framework Convention on Climate Change and ratified by the United States, building on initial accomplishments under the Climate Change Action Plan.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Climate Change	**$232,960.4**	**$127,968.9**	**$242,765.0**	**$114,796.1**
Environmental Program & Management	$163,237.5	$74,347.9	$170,025.9	$95,678.0
Science & Technology	$69,722.9	$53,621.0	$72,739.1	$19,118.1
Total Workyears:	333.9	324.3	325.7	1.4

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Climate Change Technology Initiative: Buildings	$78,100.0	$38,800.0	$80,100.0
Climate Change Technology Initiative: Transportation	$58,900.0	$31,750.0	$61,900.0
Climate Change Technology Initiative: Industry	$51,600.0	$18,600.0	$55,600.0
Climate Change Technology Initiative: Carbon Removal	$3,400.0	$0.0	$3,400.0
Climate Change Technology Initiative: State and Local Climate	$5,000.0	$2,900.0	$5,000.0
International Capacity Building	$8,400.0	$7,400.0	$10,400.0

Climate Change Research	$22,817.4	$16,670.5	$22,833.6
Partnership with Industrial and Other Countries	$160.0	$409.1	$428.2
CCTI: RESEARCH	$0.0	$10,000.0	$0.0

FY 2000 Request

EPA is meeting the United States' climate change objectives by working in partnership with business and other sectors to deliver multiple benefits – from cleaner air to lower energy bills – while improving overall scientific understanding of climate change and its potential consequences. In 2000, EPA expects to continue expanding on the significant accomplishments of its Climate Change programs to date.

Through 1998, EPA's Climate Change programs have reduced U.S. greenhouse gas emissions by 260 million tons of carbon dioxide equivalent (70 million metric tons of carbon equivalent). EPA's programs are reducing emissions of carbon dioxide as well as a number of other long-lived, high global warming potential (GWP) greenhouse gases such as methane and perfluorocarbons. EPA's climate technology programs have saved families and businesses over $6 billion on their energy bills and kept over 150,000 tons of smog-forming nitrogen oxide (NO_X) pollution from entering the air. In 1998, these programs:

- Conserved enough energy to light 35 million homes for the year.
- Prevented NO_X emissions equivalent to the annual pollution from 46 powerplants.
- Avoided greenhouse gas emissions equivalent to taking 23 million cars off the road for the year.

Technology partnership programs do **not** provide subsidies: they work by overcoming widely acknowledged barriers to energy efficiency – lack of clear, reliable information on technology opportunities; lack of awareness of energy efficient products and services; and lack of financing options to turn life cycle energy savings into initial cost savings for consumers. EPA is working with:

- Manufacturers to make more energy-efficient products available that reduce energy consumption without sacrificing product performance. For example, in 1998, EPA formed a new partnership with TV and VCR manufacturers to produce TVS and VCRs that waste less energy, reduce pollution by more than 3.5 million tons of carbon dioxide per year and save consumers up to $500 million per year on their energy bills.
- Schools to bring superior quality lighting and comfort into classrooms with large reductions in energy bills. Since 1995, EPA's programs have helped schools and universities save over $200 million -- enough money to buy 4 million text books or hire 4,000 teachers.

- Families to reduce their energy bills by up to $400 per year with currently available home products that improve home comfort while protecting the environment.

- Home Builders to get over 5,000 new homes built 30 percent above model energy code, saving consumers $400 per year and increasing the performance and comfort of the homes.

- Small Businesses to help lower their overhead through lower energy bills. In 1998, 1,600 small businesses were working with the Energy Star Small Business program to realize savings on their energy bills. Nearly half of *Climate Wise* Industrial Partners have fewer than 100 employees. All are receiving technical assistance, and many have documented improvements in both energy efficiency and increases in productivity.

- Large Businesses and Organizations to protect the environment and improve productivity through their investments in advanced technologies. For example, in the Wisconsin headquarters building of West Bend Mutual Insurance, efficient building design has been documented to save about $125,000 per year on utility bills and has also been credited with improved employee productivity on the order of $260,000 per year.

- Building Owners to offer a benchmarking tool that will allow them to recognize and identify, with the ENERGY STAR label, the most efficient 25 percent of commercial building stock. Through the ENERGY STAR Buildings label, all buildings, new and old, will have the opportunity to save energy, save money, increase asset value and prevent pollution. In 1998, owners of the Empire State Building, the Sears Tower, the World Trade Center, and other landmark buildings from around the country joined with EPA to be charter applicants for the ENERGY STAR label.

- Large Industries to improve energy efficiency and enhance productivity through comprehensive Action Plans developed under EPA's *Climate Wise* program. In 1998, Climate Wise Partners identified more than 2,500 actions to improve efficiency and prevent pollution. These actions are expected to reduce emissions by nearly 10 million metric tons of carbon dioxide equivalent and save $400 million. EPA has also been working with industry to reduce emissions of high global warming potential (GWP) gases such as PFCs and hydrofluorocarbons (HFCs), to achieve reductions in excess of 18 million metric tons of carbon dioxide equivalent annually in 1998.

- WasteWi$e Partners (over 800 in 1998) with an emphasis on sector-specific, targeted technical assistance on waste reduction efforts leading to energy savings, reduced methane emissions, and increased carbon sequestration. Stakeholder meetings are being held with commodity trade associations (e.g., American Forest & Paper Association, American Plastics Council, Paper Recycling Coalition, etc.) in order to form new waste reduction and recycling initiatives.

- Financiers to make mortgages and loans with special terms for energy-efficient products widely available to consumers. The big names on Wall Street as well as smaller financial institutions are seeing the value of promoting energy efficiency. In 1998 five national lenders, including

GE Capital, Household Finance, and Chase Manhattan, and over seven regional lenders offered ENERGY STAR loans and mortgages to purchasers of ENERGY STAR heating and cooling equipment and homes.

- State and Local Governments to identify measures that save energy and reduce pollution and facilitate sharing of information and technologies. Local governments participating in the Cities for Climate Protection (54 in 1998) have implemented building, transportation, waste efficiency, and renewable projects resulting in the elimination of over 3 million metric tons of carbon dioxide. State governments such as New Jersey have broken new ground through their innovative work. New Jersey established a state carbon bank program to help meet its Department of Environmental Protection's goal of reducing New Jersey's greenhouse gas emissions 3.5 percent below 1990 levels by 2005.

- The International Community to adopt commitments and carry out actions that reduce greenhouse gases, expand markets for clean U.S. technologies, and establish markets for avoided emissions and sequestration. Activities will build technical consensus on issues vital to U.S. interests, such as cost reduction through flexibility mechanisms and credits for carbon sequestration, and motivate developing countries to commit to GHG mitigation, for example by assessing the local health and economic benefits of actions.

- Land owners and farmers, in close conjunction with the Department of Agriculture (USDA), to provide the incentives to increase carbon storage on U.S. lands while improving soil quality, reducing soil erosion, and enhancing other environmental and conservation goals.

Despite the significant accomplishments of EPA's programs to date, there remain large opportunities to achieve further pollution reductions and energy bill savings from energy efficiency programs and greater use of cost-effective renewable energy. In the U.S., energy consumption causes more than 85 percent of the emissions of major air pollutants such as NO_x, sulfur dioxide (SO_2), and carbon dioxide. At the same time, American families and businesses spend over $500 billion each year on energy bills – more than we spend on education. Technologies are available that can cut this energy use significantly today. Other technologies are being developed that may provide even more dramatic opportunities -- such as a car that can reduce fuel use and greenhouse gas emissions by 2/3 without sacrificing safety and performance. In 2000, EPA's programs will continue to capitalize on these opportunities and will deliver 213 million metric tons in annual carbon dioxide equivalent reductions (58 MMTCE) and over $8 billion in energy savings.

Technology deployment programs have demonstrated their effectiveness. For every dollar spent by EPA, these programs have reduced greenhouse gas emissions by 2.5 tons of carbon dioxide equivalent and delivered $70 in energy bill savings. Because much of EPA's work to date has been devoted to program design and start up, the effectiveness of EPA's climate programs can be expected to improve substantially over the next several years. Over the next decade there are important opportunities to reduce local air pollution and make progress on controlling U.S. greenhouse gas emissions. By 2010, two-thirds of greenhouse gas pollution will be caused by equipment that is purchased over the next decade, equipment that can be made to pollute less and be more energy

efficient. EPA's programs are designed to help businesses and consumers make better investments when they purchase technology, capitalizing on economic opportunities to reduce air pollution.

- Buildings Sector -- The Buildings Sector, which includes both homes and commercial buildings, offers a large potential for carbon reductions using technologies that are on the shelf today. Consumers and businesses continue to invest substantial resources in equipment that is relatively inefficient, resulting in higher energy bills and higher pollution levels. The Buildings Sector represents one of EPA's largest areas of investments, and one of its most successful.

  EPA's ENERGY STAR Program is a critical component of transforming the market for energy efficiency. EPA will continue to provide clear, technically accurate, and reliable information to consumers and businesses on how to purchase products. EPA's success with the ENERGY STAR label will continue to grow as EPA adds products to the list of products that qualify for the label. Products identified with the ENERGY STAR label are substantially reducing greenhouse gas emissions.

  EPA's ENERGY STAR Buildings & Green Lights Partnership is successfully laying the foundation for market transformation in the commercial buildings sector. EPA will expand its partnerships with equipment manufacturers and building owners in order to provide reliable, easily understood information to a greater segment of the residential and commercial markets. EPA will continue work to support other Federal agencies in improving the energy performance of their facilities, and to support state and local governments in their efforts to reduce greenhouse gas emissions.

  EPA supports the Department of Energy (DOE) and the *Million Solar Roofs Initiative* by working with partners to use renewable energy applications where cost-effective. Emissions reductions from this initiative will exceed 29 million tons of carbon dioxide equivalent annually by 2010.

- Industry Initiatives -- The President has invited entire industries to work with the Federal government to take actions to meet voluntary reduction targets. EPA is working with key energy intensive industries, such as cement, chemicals, steel, petroleum, airlines, and food processing. The focus of this effort is to: 1) inventory current greenhouse gas emission sources and reduction options; 2) establish a specific reduction goal or target; 3) develop an action plan for meeting the identified target; and 4) identify and remove barriers to reducing greenhouse gas emissions in that sector. EPA provides assistance in establishing baselines and assessing progress toward the attainment of the sector emission targets. EPA also provides technical assistance tools such as project tracking software and emission projections models.

  EPA's Climate Wise Program is a partnership initiative designed to stimulate the voluntary reduction of greenhouse gas emissions among participating manufacturing companies by providing technical assistance and allowing organizations to identify the most cost-effective ways to reduce greenhouse gas emissions. As part of the *Climate Wise* program, companies submit an Action Plan within six months of joining. Action Plans detail ways to reduce

greenhouse gas emissions by implementing energy efficiency and environmental management practices. Companies quantify energy savings and emission reduction numbers. The *Climate Wise Program* works with individual partner companies that now represent nearly 12 percent of U.S. energy use and more than 15 percent of U.S. manufacturing energy use.

EPA's WasteWi$e Program will continue to work with its partner base (over 800 in 1998) with an emphasis on sector-specific, targeted technical assistance on waste reduction efforts leading to energy savings, reduced methane emissions, and increased carbon sequestration. WasteWi$e will build upon FY99 efforts, where selected partners will be engaged in a stakeholder dialogue in an effort to help partners understand and communicate the climate benefits of their waste reduction activities. Activity tracking and emission reduction calculation tools will be used to support voluntary reporting of greenhouse gas emission reductions. The climate benefits of increased technical assistance to WasteWi$e partners and support of State and local waste reduction initiatives will exceed 5.0 million metric tons of carbon in the year 2000. In addition, an expansion of outreach and training activities on waste management to the international arena will support efforts to demonstrate meaningful participation from developing countries on climate change.

EPA's programs to reduce high GWP gases, including methane, HFCs, PFCs, and (SF_6), are delivering significant cost-effective reductions. In 1998 alone these programs eliminated the emissions of over 56 million tons of carbon dioxide equivalent (15.5 MMTCE). Continued expansion of these partnerships will increase greenhouse gas reductions in the coming years.

- Transportation Initiatives -- The Partnership for a New Generation of Vehicles (PNGV) is a public/private partnership between the U.S. government (seven agencies and 20 Federal laboratories) and Chrysler, Ford, and General Motors that aims to strengthen America's competitiveness by developing technologies for a new generation of vehicles. Announced at the White House on September 29, 1993 by President Clinton, Vice President Gore, and the Chief Executive Officers of the domestic auto makers, this government/industry program includes support for over 350 automotive suppliers, universities, and small businesses. PNGV's long term goal, the "Clean Car" goal, is to develop an environmentally friendly car with up to triple the fuel efficiency of today's mid-size cars without sacrificing affordability, performance, or safety. The National Academy of Sciences (NAS) has determined that EPA's renewable fuels application for 4-Stroke Direct Injection (4-SDI) engines is the lead candidate technology. When complete, EPA's design will provide the basis for a viable and proven concept vehicle for commercialization and for innovation to conventional vehicles. It will also provide a strong technical base from which to initiate additional EPA research into similar technologies for light- and heavy-duty truck applications.

Transportation (cars, trucks, aircraft, marine) accounts for almost one third of U.S. carbon dioxide emissions and represents one of the fastest-growing sectors for greenhouse emissions. The Agency will increase support for implementing a National Voluntary Commuter Choice/Parking Cashout Initiative that highlights changes in Federal tax laws which provide new incentives for commuters to consider transit, ridesharing, and other transportation alternatives to driving through 'parking cashout' and the ability to use pre-tax earnings to pay

for commuting expenses, such as transit passes. EPA will continue its work to support innovative state and local efforts that encourage "livable communities and smart growth"-- compact, walkable, transit-friendly, and mixed-use development-- while reducing the growth in vehicle travel, emissions, and congestion and will expand its public information campaign to describe how transportation choices and consumers impact air quality, traffic congestion, and climate change.

Transportation Partners includes a network of over 340 companies, community organizations and local governments to implement vehicle miles traveled (VMT) reduction strategies. By 2000, we anticipate that this network will have grown to include over 500 partners throughout the country and will be reducing 13 million tons of carbon dioxide equivalent annually.

- International Capacity Building – Greenhouse gas emissions from developing countries already constitute more than half of the global total and are growing rapidly. EPA is working with other agencies to secure meaningful participation from key developing country parties building on the success of the U.S. Country Studies Program. Eight of the 10 national reports so far submitted to the Climate Change Convention Secretariat by developing countries have come from Country Studies Program partners.

- State and Local Climate Change Program -- State and local governments have a significant role and home-court advantage in the reduction of greenhouse gases, provided they are equipped with the tools they need to integrate climate change into their daily decisions. With assistance from EPA's State and Local Climate Change Program, 35 states have initiated and 32 states have completed state greenhouse gas emission inventories while 26 states have initiated and 12 have completed greenhouse gas emission reduction strategies. Five of the state plans alone have identified strategies that could collectively reduce greenhouse gas emissions by 34 MMTCE, or 2% of U.S. 2010 emissions, while saving over $600 million per year. In addition, 30 demonstration and education projects have been launched, and 54 cities and counties, representing 25 million people and 8% of US GHGs, have begun developing inventories and implementing plans, some already reducing over one million tons of carbon-equivalent each year.

Research

EPA's research and assessment activities in this area will evaluate the potential regional consequences of climate change and climate variability for the United States. EPA will pay particular attention to the potential beneficial and detrimental consequences of climate variability and change for human health, ecosystems, and economic systems at the regional, state and local levels. EPA will also assess possible adaptation opportunities in order to reduce the risks, or take advantage of the opportunities, presented by climate variability and change.

The work planned for FY 2000 will directly support the objective through research and assessment activities that examine the potential effects of climate variability and change on: (1) human health (including the mortality and morbidity effects of heat stress; effects of climate change on air and water quality and the consequent health effects; the spread of infectious diseases; the health

consequences of extreme events such as floods, droughts and hurricanes; and changes in nutrition due to effects on agriculture and food distribution); (2) air quality (including changes in concentrations of ozone and particulate matter), and the ability of urban areas to attain air quality standards; (3) water quantity and quality; (4) ecosystem health (particularly wildlife and biodiversity in both terrestrial and aquatic ecosystems; unique ecosystems; National Parks; and effects on ecosystem services of high societal value); (5) the frequency, intensity, and socioeconomic impacts of extreme weather events; (6) agricultural productivity and food availability (including changes in the distribution of production across different regions of the country); and (7) forest health (including consequences for commercial timber and recreational activities).

The Agency will assess all of these climate-induced changes in the context of multiple stressors; that is, climate change will be viewed as one of many stressors. For example, we will assess the synergistic effects of climate change and UV-B exposure on human health and ecosystems. We will also develop indicators of change. The development of sensitive and accurate indicators of ecological and human health impacts in response to climate change, climate variability, and other stressors will support ongoing monitoring of change and the development of appropriate adaptive responses to change.

These research and assessment activities will also evaluate the potential co-control benefits of greenhouse gas mitigation policies and the potential co-control benefits of policies to reduce criteria air pollutants. For example, do efforts to reduce greenhouse gas emissions lead to changes in criteria air and water pollutants, and, do efforts to reduce air pollutants lead to changes in greenhouse gas emissions? In addition, we will assess the consequences for human health and welfare of the changes in criteria air pollutants, water pollutants, and greenhouse gases.

EPA's Global Change Research Program is integral to the U.S. National Assessment Process of the U.S. Global Change Research Program (USGCRP), which is evaluating the potential consequences of climate change and variability to the United States. The USGCRP coordinates the global change research efforts of multiple government agencies. Research under this objective will continue to support specific regional assessments (*e.g.*, Mid-Atlantic, Great Lakes, and Gulf Coast regions) and sectoral assessments (*e.g.*, human health sector) of the potential impacts of climate change and variability. These assessments will be conducted through a public-private partnership that actively engages researchers from the academic community, decision makers and resource managers, and other affected stakeholders in the assessment process.

The regional assessment activities will continue to focus on four key questions in order to provide useful insights to decision makers, resource managers, and other affected stakeholders: (1) What are the current conditions of resources in a particular region or sector, and what are the stressors on those resources other than climate variability and change? (2) How might climate variability and change exacerbate or ameliorate future conditions? (3) What adaptive opportunities exist to reduce the risks, or to take advantage of the opportunities, presented by climate variability and change (particularly with respect to air quality, water quality, and ecosystem health)? (4) What are the key, policy-relevant knowledge gaps upon which future global change research should focus?

Annual Performance Goals and Performance Measures

Reduce Greenhouse Emissions

In 2000 Greenhouse gas emissions will be reduced from projected levels by more than 50 million metric ton carbon equivalent per year through EPA partnerships with businesses, schools, State and local governments, and other organizations. Reduction level will increase 10 million metric tons over 1999.

In 1999 Reduce U.S. greenhouse gas emissions by 35 million metric ton carbon equivalent (MMTCE) per year through partnerships with businesses, schools, state and local governments, and other organizations.

Performance Measures	FY 1999	FY 2000
Methane Programs - Annual Greenhouse Gas Reductions	8.5 MMTCE	
HFC/PFC Programs - Annual Greenhouse Gas Reductions	11.5 MMTCE	
Annual Greenhouse Gas Reductions - All EPA Programs	35 MMTCE	50 MMTCE
ENERGY STAR Buildings and Green Lights - Annual Greenhouse Gas Reductions	3.9 MMTCE	
ENERGY STAR Labeled Products - Annual Greenhouse Gas Reductions	4.8 MMTCE	

Baseline: Performance Baseline: The baseline for evaluating program performance is a forecast of U.S. greenhouse gas emissions in the absence of the Climate Change Action Plan programs. The baseline was developed as part of an interagency evaluation of the Climate Change Action Plan in 1997, which built on a similar baseline forecast that was developed in 1993 for the Climate Change Action Plan. The updated baseline includes updated energy forecasts and economic growth projections. The baseline is discussed at length in the Climate Action Report 1997, which includes a discussion of differences in baselines between the original Climate Change Action Plan and the 1997 baseline update.

Reduce Energy Consumption

In 2000 Reduce energy consumption from projected levels by more than 60 billion kilowatt hours, resulting in over $8 billion in energy savings to consumers and businesses that participate in EPA's climate change programs.Increase of 15 billion kilowatt hours & $5 million in annual energy savings over 1999.

In 1999 Reduce U.S. energy consumption by over 45 billion kilowatt hours per year, including annual energy bill savings to consumers and businesses of over $3 billion. Encourage more widespread adoption of low greenhouse gas emitting technologies.

Performance Measures	FY 1999	FY 2000
Green Programs - Annual Energy Savings	47 Billion kWh	60 Billion kWh

Baseline: Baseline under development.

Technology for 70 mpg sedan

In 2000 Demonstrate technology for a 70 mpg mid-size family sedan that has low emissions and is safe, practical, and affordable.

In 1999 Demonstrate that an American family car can attain over 60 miles per gallon on the Federal Test Procedure without loss in utility, safety, and emissions control performance.

Performance Measures	**FY 1999**	**FY 2000**
Fuel Efficiency of EPA-Developed PNGV Concept Vehicle over EPA Driving Cycles Tested		70 mpg
PNGV MPG Demonstration	60 MPG	

Baseline: Performance Baseline: Fuel economy average miles per gallon.

Analysis, Assessment and Reporting Support

In 2000 Provide analysis, assessment, and reporting support to Administration officials, the Intergovernmental Panel on Climate Change, and the Framework Convention on Climate Change.

Performance Measures	**FY 1999**	**FY 2000**
GHG Inventory (FCCC)		1999 Inventory

Baseline: EPA will continue to fulfill analytical, assessment, and reporting commitments under the FCCC

Research

Global Change Research - Global Scale

In 2000 Assess the consequences of global change and climate variability at a regional scale.

In 1999 Conduct preliminary assessment of consequences of climate change at three geographical locations: (Mid-Atlantic, Gulf Coast, and upper Great Lakes).

Performance Measures	**FY 1999**	**FY 2000**
Determine impacts of global change on coastal ecosystems in the Gulf Coast and Mid-Atlantic		09/30/2000
Complete 3 regional assessments of potential consequences of global change & climate variability for the USGCRP National Assessment. The 3 regions are the Mid-Atlantic, Great Lakes, & Gulf Coast		3 reg. assessment
Conduct preliminary assessment of regional scale consequence climate change at three geographic locations (Mid-Atlantic, Gulf Coast, and upper Great Lakes).	09/30/1999	

Baseline: The regional scale focus is an advance beyond the existing national-level assessments of the aggregate impacts of climate change on the United States by accounting for the potential regional impacts. Climate variability itself is accounted for, whereas previous assessments only focused on changes in average climate.

Global Change Research - Human Health

In 2000 Assess the consequences of global change and climate variability on human health.

In 2000 Provide the capability to assess ecological and associated human health vulnerability to climate-induced stressors at the regional scale and assess mitigation and adaptation strategies.

Performance Measures	FY 1999	FY 2000
Complete a Health Sector Assessment of the potential consequences of climate change and variability for public health, for the USGCRP National Assessment process.		1 assessment
Provide preliminary results from a case study which will determine how climate change & variability affect the formation of trop. ozone in a city & consider the viability of certain adaptation options		09/30/2000 results
Develop prototype ecological and health data and information system to integrate with the Global Climate Data and Information System (GCDIS).		1 info. system

Baseline: Performance Baseline: Uncertainties remain concerning the positive or negative consequences of climate change and variability on human health. Development of "formal" baseline information for EPA research is currently underway.

Global Change Research - Ecosystem Services

In 2000 Assess the impact of global change on ecosystem services.

Performance Measures	FY 1999	FY 2000
Assess potential effects of global change on ecosystem services.		09/30/2000

Baseline: Performance Baseline: Uncertainties remain concerning the impact of climate change on ecosystem services such as water and air purification, carbon and nitrogen fixing, and erosion prevention. Development of "formal" baseline information for EPA research is currently underway.

Global Change Research - Human Dimensions

In 2000 Assess the human dimensions of Global Change.

Performance Measures	FY 1999	FY 2000
New research based on an FY99 solicitation will focus on the human dimensions of global change. The focus will be to identify, understand, & analyze how human activities contribute to changes in natural systems.		1 grant

Baseline: Performance Baseline: Research needs to be done to link scientific studies of climate change with socio-economic causes and effects, and possible mitigation and adaptation activities. Development of "formal" baseline information for EPA research is currently underway.

FY 2000 Change from FY 1999 Enacted

EPA is requesting a $107 million increase in funding for its climate technology programs in order to target additional opportunities throughout all sectors of the economy. The request is part of the President's five-year Climate Change Technology Initiative announced in the FY 1999 Budget. Over the next decade, the increase in funding for EPA will deliver at least:

- 1.3 billion tons of greenhouse gas emissions (carbon dioxide equivalent)
- $35 billion in energy savings to families and businesses
- 850,000 tons of NO_X emissions.

Both technology deployment and technology research and development are essential elements of a balanced strategy to address climate change in both the near-term and the long-term. Technology deployment is particularly key in both the buildings and industrial sectors where by 2010, two-thirds of greenhouse gas pollution will be caused by equipment that is purchased over the next decade. EPA's strategy to achieve these benefits is to expand its existing programs where additional benefits can be achieved at a profit to businesses and consumers and to launch new initiatives targeted at areas of opportunity that EPA has not addressed:

- (+$37,000,000 EPM) Industry Initiatives -- By 2000, EPA's programs in the industrial sector will reduce greenhouse gas emissions by 140 million tons of carbon dioxide equivalent (37.9 MMTCE) annually. Fully funded, EPA will expand existing programs as well as introduce new initiatives working with American business to achieve the goal of doubling the rate of energy efficiency investments in industry between now and 2010. Combined with partnerships to reduce the emissions of potent gases such as methane and HFCs, these industrial partnerships have the potential to reduce U.S. emissions by 513 million tons of carbon dioxide (140 MMTCE) by 2010.

  EPA will continue to work with key energy intensive industries to take actions to meet voluntary reduction targets. In 2000, EPA will expand its work with these industries to build a program that provides appropriate credit for early action.

  EPA's Climate Wise Program will use increased funding to expand work with individual partner companies to achieve reductions of nearly 17 million tons of greenhouse gas emissions (carbon dioxide equivalent) per year by the year 2000. By expanding work *Climate Wise* partners will comprise half of the cement, pharmaceuticals, food processing and steel industries in the year 2000. *Climate Wise* will work with the private sector to develop and create a market for products whose emissions have been offset or neutralized through energy efficiency, use of renewable power, carbon sequestration, or energy efficient projects conducted at local schools or other municipal centers. *Climate Wise* is also working with key

partners to make the purchase or generation of renewable power a key element of their Action Plans over the next five years.

A combined heat and power initiative will reduce carbon emissions by 146 million tons of greenhouse gas emissions (carbon dioxide equivalent) by 2010—the equivalent of eliminating 40 million cars from U.S. roadways -- by doubling the capacity of U.S. combined heat and power systems employed by commercial, industrial, and institutional buildings, and in communities throughout the U.S. EPA, working with DOE, will identify and eliminate the regulatory and institutional barriers that are currently preventing more rapid dissemination of this technology.

EPA will expand its programs to reduce high GWP gases, including methane, HFCs, PFCs, and SF_6, to deliver cost-effective greenhouse gas emissions. For example, EPA will further expand the partnership with the magnesium industry to reduce the emissions of SF_6. In 2000, EPA will bring the total number of partnerships with the magnesium industry up to 13 partners, representing all of primary U.S. production and about half of U.S. diecasting industry. EPA will also secure SF_6 emissions reductions in the Electric Power sector by adding 15 new partnerships in 2000 to the SF_6 Electric Power System Voluntary Partnership launched in 1998. The Voluntary Aluminum Industrial Partnership (VAIP) will continue to deliver reductions and by the year 2000, VAIP participants will reduce the industry's emissions of PFCs by an estimated 45 percent.

(+$7,200,000 EPM, +$23,000,000 S&T) Transportation Initiatives -- With increased funding, EPA will accelerate its efforts to reduce greenhouse gas emissions from the transportation sector. Transportation Efficiency Systems expects reductions of 2.1 MMTCE of emissions for 2000. This increase will enable EPA to greatly accelerate the PNGV and expand the process to trucks. EPA will accelerate its program to develop an optimized renewable alcohol-fueled engine that can simultaneously achieve high efficiency and low carbon, particulate, and No_x levels. EPA also will help initiate and participate in the development of a new generation of heavy truck production vehicles, to transfer PNGV technology to petroleum fuels, and to initiate work to design and build a combined-cycle demonstration engine.

Increased funding will allow EPA to expand its work with state and local decision-makers to develop and implement transportation improvements that reduce the growth in vehicle travel, emissions, and congestion. EPA's *Transportation Partners Program* will continue to expand its existing network of over 340 companies, community organizations, and local governments to implement VMT reduction strategies. By 2000, we anticipate that this network will have grown to include over 500 partners throughout the country and will be reducing 13 million tons of carbon dioxide equivalent (3.6 MMTCE) annually in the year 2000. EPA will also work with the *Climate Wise* Program to implement Commuter Choice programs with corporations nationwide. Using strategies such as transit incentives, bicyclist support facilities, and parking cash-out, *Transportation Partners* will assist companies in reducing in reducing their employees' commute burden. *Transportation Partners* and *Climate Wise* will also assist corporations in examining opportunities for emissions reductions through corporate

fleet management. The *Transportation Partners* network will be working with both national and local Partners to maximize the effectiveness of new transit programs and other Department of Transportation pilot programs, such as the Transportation and Community and System Preservation pilots. By engaging local decision-makers in planning and design projects, communities will foster a more transit-supportive environment, and contribute to increasing ridership.

- (+$41,300,000 EPM) Buildings Initiatives. Building on the success of EPA's programs in the buildings sector (residential and commercial) will deliver emissions reductions of 46 million tons of greenhouse gas emissions (carbon dioxide equivalent) annually (12.7 MMTCE) in 2000. EPA is working toward the goal of improving the energy efficiency of one-half of all commercial buildings and homes by the year 2010. Expanding EPA's activities and achieving this goal would deliver reductions of about 256 million metric tons of carbon dioxide equivalent annually in 2010. It would also reduce the nation's energy bill by over $30 billion per year.

- Fully funded, EPA will expand beyond its existing partnerships and support the launch of 25 new ENERGY STAR product lines. In commercial buildings, EPA will be able to expand beyond its existing partnerships and sign up 2,000 additional small business and school partners in 2000. The ENERGY STAR Buildings label, a critical benchmarking tool, will be rolled out for several commercial building types. This tool will continue to be developed to meet the needs of other buildings types and by the end of 2000, there will be several hundred ENERGY STAR labels on commercial buildings. EPA will also focus efforts to improve efficiency of Federal facilities.

  As part of the Partnership for the Advancement of Technology in Housing (PATH) initiative, EPA will implement a nationwide ENERGY STAR Home Improvement program that will offer homeowners the tools that they need to upgrade their homes to a better comfort level with lower utility bills and less impact on the environment. Home owners can potentially reduce their energy bills by $400 annually.

  EPA will also support DOE and the Million Solar Roofs Initiative by working with partners to use renewable energy applications where cost-effective. The EPA will lead by example in installing and purchasing renewable energy where allowed under procurement rules. EPA will provide improved access to information on renewable energy, including peer-reviewed tools to households and businesses so that they may assess for themselves the environmental implications of energy products offered to them. Emissions reductions from this initiative will exceed 29 million tons of carbon dioxide equivalent annually by 2010.

- (+$3,400,000 EPM) Carbon Removal. Providing funds for this activity will allow EPA to develop incentives to increase carbon storage on agricultural and forest lands while improving soil quality, reducing soil erosion, and enhancing other environmental and conservation goals.

EPA will continue efforts to fully account for carbon sequestration in the U.S. greenhouse gas inventory to enable these activities to receive credit internationally, and will accelerate efforts to promote the use of livestock-based fertilizer products and more efficient use of nutrients from all sources.

- (+$3,000,000 EPM) International Capacity Building. In 2000, EPA will expand cooperation to an additional six key developing countries, with total greenhouse gas emissions of more than 1.6 billion metric tons in 1996. EPA's goal is to gain actions that reduce projected greenhouse gas levels in key countries by at least 5 percent by 2010 (or roughly 135 MMTCE avoided annually). General emphasis will be on: local environmental benefits of greenhouse gas mitigation and sequestration; financial benefits of participating in global greenhouse gas markets; economic opportunities in restructuring; improved access to clean technologies; and vulnerabilities to climate change. In addition, EPA will seek to improve international compliance systems and enforcement.

- (+$2,100,000) State and Local Climate Change Program. In 2000, EPA will provide additional support to states and localities to help conduct analyses of the co-benefits of greenhouse gas mitigation, state carbon sequestration opportunities, and climate change policy impacts on state economies; implement and expand promising policy options identified by states in their greenhouse gas mitigation plans; and conduct regional assessments and state-level case studies of climate change impacts and adaptation options, and work with stakeholders to develop and implement adaptation measures to increase resilience to climate variability. Reductions of 1.7 MMTCE of emissions are expected for 2000.

- (-$10,000,000) Funding is discontinued for Climate Change Technology Initiative activities funded through the FY 1999 Omnibus appropriation.

Research

S&T

- (+$1,180,000) This increase in funding will be used to assess the potential effects of climate change on human health (e.g., changes in the presence of vector-borne and water-borne diseases), air quality (e.g., impacts of tropospheric ozone and PM), water quality (e.g., impact on water quality criteria), and ecosystem health (e.g., changes in the composition of landscapes; changes in ecosystem services).

- (+$400,000) This increase in funding will be used to assess data collected through the UV-B monitoring network to ascertain potential effects on ecosystems.

- (+$4,887,900) This increase in our Global Change Research Grants program will increase the number of global change assessment grants awarded. Solicitations will be issued for integrated assessments at the state and local level of the potential consequences of climate change on human health, ecosystems, and economic systems. Other grants will support work to assess data gathered through the UV-B monitoring network to examine the possible impacts of UV-B

exposure on ecosystems. Grants will also support research into the human dimensions of climate change. Human dimensions research entails understanding how humans contribute to and respond to global change.

- (+$216,000 and +4 workyears) This request continues the second year of the Agency's Postdoctoral Initiative to enhance our intramural research program, building upon the overwhelmingly positive response by the academic community to EPA's announcement of 50 postdoctoral positions for 1999. These positions will provide a constant stream of highly-trained postdoctoral candidates who can apply state-of-the-science training to EPA research issues.

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

Coordination with Other Agencies

Agencies throughout the Administration will make significant contributions to the CCTI; EPA worked extensively with these other agencies in the development of the CCTI. For example, the DOE will pursue actions such as promoting the research, development, and deployment of advanced technologies (for example, renewable energy sources). The Treasury Department will administer proposed tax incentives for specific investments that will reduce emissions. EPA is expanding its public information transportation choices campaign as a joint effort with the Department of Transportation.

EPA has also worked extensively with the DOE and other Federal agencies and offices in evaluating the performance of voluntary climate programs, and coordinating performance measures for the year 2000. An interagency process, headed by the Council on Environmental Quality, evaluated the performance of each program and their targets for the year 2000. The results were published by the Department of State in the *Climate Action Report 1997*. EPA and DOE, which together manage a majority of the voluntary climate programs, continue to coordinate on performance measures for the year 2000.

Research

EPA is an active participant in the interagency U.S. Global Change Research Program (USGCRP) and the ongoing National Assessment of "The Potential Consequences of Climate Change and Variability on the United States." As part of these efforts, EPA coordinates research and assessment activities with other USGCRP agencies to ensure that an integrated federal research and assessment program is implemented, and that agencies' activities are complementary rather than duplicative.

Verification and Validation of Performance Measures

EPA has several strategies to validate and verify performance measures. At the national level, the primary mechanism for monitoring overall changes in greenhouse gas emissions is the annual greenhouse gas inventory that is developed by EPA in coordination with other government agencies and departments. The EPA greenhouse gas inventory serves as the official U.S. government submission to the United Nations.

Within the voluntary programs, EPA monitors and evaluates accomplishments based on extensive information provided by partners. For example, the Green Lights partners provide detailed information on investments and energy savings from over 14,000 completed energy-efficiency projects (e.g., the annual kilowatt-hour savings from completed lighting upgrades). These standardized reports on energy efficiency projects can be easily translated into annual emission reductions by applying the appropriate emission factor (lbs/kWh) for each pollutant of concern. The voluntary programs continually use the information collected to improve the program's performance and more accurately assess its future potential.

Another measure of progress for the voluntary programs is obtained by using the Voluntary Reporting of Greenhouse Gases Program developed by the Energy Information Agency under the 1992 Energy Policy which reports the results and achievements of individual companies. Through this program, companies submit reports directly to the Energy Information Agency, which reviews them for accuracy and to ensure plausibility.

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities and resulting information products that pass Agency peer review are addressed and published. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which Quality Assurance/Quality Control (QA/QC) is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Statutory Authorities

Clean Air Act, 42 U.S.C. 7401 et seq. - Sections 102, 103, 104, 108

Clean Water Act, 33 U.S.C. 1251 et seq. - Section 104

Solid Waste Disposal Act, 42 U.S.C. 6901 et seq. - Section 8001

Pollution Prevention Act of 1990, 42 U.S.C. 13101 et seq. - Sections 6602, 6603, 6604, 6605

National Environmental Policy Act of 1969, 42 U.S.C. 4321 et seq. - Section 102

Global Climate Protection Act of 1987, 15 U.S.C. 2901 - Section 1103

Federal Technology Transfer Act, 15 U.S.C. - Section 3710a

Research

U.S. Global Change Research Program Act of 1990

United Nations Framework Convention on Climate Change

National Climate Program Act (1997)

Objective # 3: Stratospheric Ozone Depletion

By 2005, ozone concentrations in the stratosphere will have stopped declining and slowly begun the process of recovery.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Stratospheric Ozone Depletion	**$26,914.3**	**$17,033.8**	**$27,046.5**	**$10,012.7**
Environmental Program & Management	$26,914.3	$17,033.8	$27,046.5	$10,012.7
Total Workyears:	34.4	36.9	36.9	0.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Multilateral Fund	$21,000.0	$11,362.0	$21,000.0
Partnership with Industrial and Other Countries	$160.0	$336.7	$361.1
EMPACT	$381.9	$671.4	$385.1

FY 2000 Request

The stratospheric ozone layer protects people and other living things from harmful ultraviolet (UV) rays. As the ozone layer depletes, people become more susceptible to the damaging effects of ultraviolet radiation from the sun. The increased levels of UV radiation due to ozone depletion are linked to higher incidences of skin cancer, cataracts, and other illnesses. The rate of malignant melanoma, the most fatal form of skin cancer, increased 4.3 percent per year from 1973 to 1990 and continued to increase 2.5 percent per year from 1990 to 1995, partially as a result of increased UV radiation exposure due to stratospheric ozone depletion. Restoring the stratospheric ozone layer will help reduce the incidence of certain health effects, including skin cancers of all types. Ozone layer

protection will also help reduce the incidence of cataracts, a leading cause of blindness worldwide, and will reduce UV-linked immune suppression. Increases in UV radiation from ozone depletion are also expected to reduce crop yields, diminish the productivity of the oceans, and possibly contribute to the decline of amphibious populations.

The United States and over 160 other countries are Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer. The Administration has repeatedly affirmed its commitment to honoring this international treaty and to demonstrating world leadership by phasing out domestic production of ozone-depleting substances (ODSs) as well as helping other less developed countries find suitable alternatives. As a signatory to the Montreal Protocol, the United States has a positive obligation to domestically regulate and enforce its terms. In accordance with this international treaty, EPA implements and enforces rules controlling the production and emission of ODSs and rules requiring EPA to identify safer alternatives and promote their use to curtail ozone depletion under the authority of Title VI of the Clean Air Act Amendments of 1990.

Because of the very long life times and stability of these ODSs, even after program goals are met, the public in the U.S. will be exposed to higher levels of radiation than existed prior to the use and emission of ODSs. The ozone layer is not expected to recover until the mid-21st century, according to current atmospheric research. Recognizing this, we are informing the public about the dangers of overexposure to UV radiation, so that we may further reduce risks attributable to ozone depletion during the period of recovery of the stratospheric ozone layer.

EPA's approach to achieving this objective focuses on six areas:

- Domestic and international production phaseout of five ODSs and chemical classes: chlorofluorocarbons (CFCs), halons, methyl chloroform, carbon tetrachloride and hydrobromofluorocarbons (HBFCs), as well as controls on their import.

- Implementation of limitations on two other ODSs, hydrochlorofluorocarbons (HCFCs) and methyl bromide.

- Identification and information dissemination related to safe alternatives for compounds being phased out.

- More intensive recycling programs in the U.S. and abroad.

- Environmental data development and public outreach aimed at informing the public of risks of overexposure to UV radiation.

- Helping facilitate earlier voluntary phaseout of CFCs and HCFCs in developing countries.

In addition, EPA continues to provide support to the Montreal Protocol Multilateral Fund. Because the ozone layer depends on compliance by all countries, under the Montreal Protocol, the U.S. and other developed countries support the efforts of developing countries to convert to alternatives to ODSs. This is done primarily through programs supported by the Protocol's Multilateral Fund. When

fully implemented, the activities will annually prevent emissions of over 90,000 metric tons of ODSs. This is about one-third of developing country use of these chemicals.

Our programmatic approach emphasizes pollution prevention. For example, our National Emission Reduction Program requires recycling of ODSs, primarily in the air-conditioning and refrigeration sectors. In addition, hydrofluorocarbons (HFCs) will be recycled due to their global warming potential, as required under the Clean Air Act. The Significant New Alternatives Policy (SNAP) program will oversee developing alternatives, review the health and environmental effects of alternatives, and restrict those that, on an overall basis, are more risky than other alternatives for the same application. The SNAP program will increasingly review substitutes and alternatives for the HCFCs. The Stratospheric Protection Program, with the help of other Federal agencies, will also continue to facilitate the transition away from remaining uses of other ODSs, such as methyl bromide.

The Agency will continue its focus on CFC phase-out programs with priority countries. Most of these activities are part of the Agency's general environmental cooperation and capacity building efforts with developing countries.

FY 2000 Change from FY 1999 Enacted

EPM

- Total payroll costs for this objective will increase by $86,500 to reflect increased workforce costs.

- EPA will increase its investment in the Montreal Protocol Multilateral Fund over the 1999 enacted level by $9,638,000, to a total 2000 request of $21,000,000. This investment will help reduce the U.S. arrearage on past dues to the Montreal Protocol Multilateral Fund.

- This objective will also invest $223,000 in two areas. The SunWise School Program is an environmental and public-health campaign to help protect young children from over-exposure to the sun. The ultimate goal of SunWise is to provide the public with useful information that they can use to modify their sun-exposure behavior. Such behavior modification will, in the long-term, have a positive impact on the incidence of malignant melanoma and other forms of skin cancer, as well as other health effects. In addition, reduction in the consumption of methyl bromide will require considerable outreach to the farming and agricultural sectors as well as continued investment in identifying alternatives. EPA will have to closely monitor the scientific, technical, and legal issues surrounding the reduction of methyl bromide.

Annual Performance Goals and Performance Measures

Restrict Domestic Consumption Class II HCFCs

In 2000	Restrict domestic consumption of class II HCFCs below 208,400 metric tonnes (MTs) and restrict domestic exempted production and import of newly produced class I CFCs and halons below 130,000 MTs.

Restrict Domestic Consumption Class II HCFCs – Continued

In 1999 Ensure that domestic consumption of class II HCFCs will be restricted to below 208,400 MTs and domestic exempted production and import of newly produced class I CFCs and halons will be restricted to below 130,000 MTs.

Performance Measures	**FY 1999**	**FY 2000**
Domestic Consumption of Class II HCFCs	<208,400 MTs	<208,400 MTs
Domestic Exempted Production and Import of Newly Produced Class I CFC s and Halons	<130,000 MTs	<130,000 MTs

Baseline: Performance Baseline: The base of comparison for assessing progress on the 2000 annual performance goal is the domestic consumption cap of class II HCFCs as set by the Parties to the Montreal Protocol.Beginning on January 1, 1996, the cap was set at the sum of 2.8 percent of the domestic ozone depletion potential (ODP)-weighted consumption of CFCs in 1989 plus the ODP-weighted level of HCFCs in 1989. Consumption equals production plus import minus export.

Restrict methyl bromide domestic consumption

In 2000 Restrict domestic consumption of methyl bromide by 25% of baseline levels.

In 1999 Restrict domestic consumption of methyl bromide by 25% over baseline levels.

Performance Measures	**FY 1999**	**FY 2000**
Domestic Consumption of Methyl Bromide	<19,200 MTSL	
Domestic Consumption of Methyl Bromide Restricted to a Percentage of Baseline		<19,200 MTSL

Baseline: Performance Baseline: The Clean Air Act requires the U.S. to end production and import of methyl bromide by 2001. The Montreal Protocol requires all developed countries, including the U.S., to reduce methyl bromide consumption by 25 percent in 1999. The baseline for assessing progress on the FY2000 performance goal was determined by calculating the production and import of all U.S. companies in 1991.

Montreal Protocol

In 2000 Provide assistance to at least 75 developing countries to facilitate emissions reductions and toward achieving the requirements of the Montreal Protocol.

In 1999 Through our contribution to the Multilateral Fund, assistance will be provided to at least 50 countries working toward achieving the Montreal Protocol.

Performance Measures	**FY 1999**	**FY 2000**
Assistance to countries working under Montreal Protocol	50 Countries	75 Countries

Baseline: Performance Baseline: In an average year the Multilateral Fund, created through the Protocol, approves projects to assist over 50 developing countries in their efforts to comply with the phaseout of ODSs.

Verification and Validation of Performance Measures

Stratospheric ozone measurements are based on atmospheric models and data provided by the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the World Meteorological Organization, and the United Nations Environment Programme (UNEP) where available. Actual measurements of stratospheric ozone will be made by NASA's Upper Atmospheric Research Satellite and the Total Ozone Mapping Spectrometer, and also by the Solar Backscatter Ultraviolet Spectrometer-2 and Operational Vertical Sounder instruments on the NOAA Polar Orbiting Environmental Satellite and subsequent National Polar-orbiting Operational Environmental Satellite.

Progress on the restriction of domestic exempted production and importation of newly produced class I CFCs, halons, methyl chloroform, carbon tetrachloride, and HBFCs, will be tracked by monitoring industry reports in compliance with EPA's phaseout regulations. Progress on the restriction of domestic production and importation of methyl bromide and class II HCFCs will be tracked by monitoring industry reports in compliance with EPA's phaseout regulations. Production data is cross-checked through facility inspections and comparison with International Trade Commission data. Import data is cross-checked by comparison with U.S. Customs information. Results from the tracking system are compiled and published in annual UNEP reports.

Progress on international implementation goals will be measured by tracking the number of countries receiving assistance, dollars allocated to each, and the expected reduction in ODSs in assisted countries.

Behavior modification as a result of the SunWise School Program will be measured through surveys of children and caregivers from SunWise Designated Schools. The surveys will provide information on sun exposure behavior and attitudes before and after implementation of the program.

Coordination with Other Agencies

In an effort to curb the illegal importation of ODSs, an interagency task force has been formed consisting of EPA, Department of Justice, Customs, State Department, Commerce, and Internal Revenue Service. The venting of illegally imported chemicals has the potential to prevent the U.S. from meeting the goals of the Montreal Protocol to restore the ozone layer. EPA is also working with United States Department of Agriculture to facilitate research and development of alternatives to methyl bromide. The Agency coordinates with NASA and NOAA to monitor the state of the ozone layer.

Statutory Authorities

Clean Air Act (CAA) Title VI, Parts A and D (42 U.S.C. 7401-7431, 7501-7515)

Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)

Resource Conservation and Recovery Act (RCRA) sections 3001-3006 and 3017 (42 U.S.C. 6921-6926, 6938)

The Montreal Protocol on Substances that Deplete the Ozone Layer

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risk

Objective # 4: Protect Public Health and Ecosystems From Persistent Toxics

By 2005, consistent with international obligations, the need for upward harmonization of regulatory systems, and expansion of toxics release reporting, reduce the risks to U.S. human health and ecosystems from selected toxics (including pesticides) that circulate in the environment at global and regional scales. Results will include a 50% reduction of mercury from 1990 levels in the U.S. Worldwide use of lead in gasoline will be below 1993 levels.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Protect Public Health and Ecosystems From Persistent Toxics	**$6,883.2**	**$4,125.8**	**$6,943.1**	**$2,817.3**
Environmental Program & Management	$6,883.2	$4,125.8	$6,943.1	$2,817.3
Total Workyears:	39.3	27.9	30.0	2.1

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Global Toxics	$3,311.6	$932.3	$2,967.0
Partnership with Industrial and Other Countries	$0.0	$100.0	$356.4

FY 2000 Request

Many human health and environmental risks to the American public originate outside our borders. Man-made boundaries do not stop the movement of pollution. Many pollutants travel easily across borders - via rivers, air and ocean currents, and migrating wildlife. Even in remote Antarctica, industrial chemicals such as polychlorinated biphenyls (PCBs) have been found in the tissues of local wildlife. Reducing pollution around the world benefits the U.S. and as a result EPA is committed to reducing pollution globally. Further, differences in 0public health standards can contribute to global pollution. A chemical of particular concern to one country may not be controlled or regulated in the

same way by another. Harmonization of national standards assists in reducing global pollution by increasing the number of health and ecological effects any single country may be examining; it also lowers barriers to trade and commerce as countries accept the validity of anothers' screening or other standards.

EPA's activities under this objective give priority to selected chemicals which can persist, bioaccumulate and are highly toxic (PBTs). These chemicals do not break down naturally in the environment. For this reason, PBTs, or POPs as they are known internationally (persistent organic pollutants) are very mobile, moving great distances along wind and ocean currents, thereby posing serious risks to human health and the ecosystem in the U.S. and world-wide. PBT's also enter the food chain, accumulating by degrees in the shellfish, fish, birds and animals that are exposed directly or indirectly through their diets.

EPA is working to reduce the risk from PBTs on several fronts: (1) reducing the release and transboundary movement of PBTs; (2) reducing the levels of exposure to, and adverse effects resulting from these PBTs; (3) assisting additional countries around the world to monitor releases and also manage their use of PBTs; and (4) increasing confidence that consistent PBT obligations will be met. For each of these efforts, the Agency targets the highest risk or greatest concerns first.. Among PBT's, certain chemicals pose the greatest hazard due to their highly toxic effects on human health: these include PCBs, dioxins/furans, DDT, mercury, and lead. In each negotiated agreement or offer of technical assistance, these chemicals figure first. In addition, certain populations are especially vulnerable, and receive priority consideration: children exposed to lead in gasoline, coastal populations with diets heavy in fish or marine mammals which may contain toxins, and endangered wildlife which consume and biomagnify PCBs, DDT or other harmful PBTs.

International agreements form the vehicle for many protective standards. In 2000, EPA will continue to play a key role in the Administration's efforts to successfully conclude a number of regional and global negotiations to establish voluntary and legally binding obligations to control and more safely produce, use, store and dispose of selected PBTs . In addition, the Agency will expand ongoing programs to build the capacity of other countries to reduce risks associated with PBTs, consistent with the obligations of international agreements already in place or now under negotiation.

<u>International Conventions for Persistent Organic Pollutants (POPs) and Prior Informed Consent (PIC)</u>

Persistent organic pollutant (POPs) are chemicals of concern that are persistent, toxic and bioaccumulative. When POPs are transported across international boundaries, some may pose a threat to global health and the environment. Negotiations are underway to complete a legally binding regional protocol for the elimination and/or control of specified POPs. EPA is developing the regional POPs protocol under the United Nations Economic Commission for Europe's Convention on Long-Range Transboundary Air Pollution (LRTAP). To facilitate voluntary information exchange and import controls of banned or severely restricted chemicals among countries, EPA is also engaged in the process of completing a legally binding convention, commonly called Prior Informed Consent (PIC), outlining requirements for the export and import of selected chemicals.

To reach the agreement on PICs and POPs, EPA must be involved with other Federal agencies and external stakeholders, such as Congressional members and staff, the Department of State, industry, and environmental groups, to convey the U.S. approach and concerns. The Agency also needs to ensure that the list of chemicals and the criteria and process for evaluating future chemicals are based on sound science. EPA will expand efforts with the United Nations Environment Program (UNEP), as negotiations for a regional treaty on POPs conclude and negotiations for a global treaty commence. Coordination with the United Nations Economic Commission for Europe protocol on Long Range Transport of Air Pollutants (LRTAP) will continue. The work on the regional and global POPs agreements in 1998 and 1999 will result in the overall POPs agreement reached and signed by 2001.

The regional LRTAP POPs protocol may result in banning or restricting manufacture and/or use of approximately 15 industrial chemicals and pesticides. Also under discussion are export and import restrictions/controls and emission release restrictions, micro contaminant issues and waste management issues. Non-pesticide chemicals under consideration include PCBs, polyaromatic hydrocarbons (PAHs), short-chained chlorinated paraffins (SCCP), and hexabromobiphenyl. The global POPS list initially covers some 12 chemicals and pesticides, which may not be the same chemicals as those in the LRTAP POPs protocol. Once these protocols are completed, the U.S. hopes to sign and ratify them.

A new program proposed for 2000, targets those Sub-Saharan Africa (SSA) countries and specific sectors (i.e., refineries, mining companies, and stockpilers of agricultural chemicals) which are major contributors to globally circulating chemical/toxic risks, focusing on pesticides, mercury and lead. This program will address growing health and ecosystem risk from rapid urban and industrial development and SSA, and support U.S. foreign policy and Presidential commitments of engagement with SSA through a community empowerment approach. Targeted countries and cities will be given information which will assist in implementing environmental regulatory systems on par with U.S. and international standards. Activities that may be included are pesticide information exchange and training, management of obsolete pesticide stockpiles, lead risk reduction, pollutant release and transfer register development and industrial sector environmental improvement.

Unless controls are put in place internationally, environmental loadings of PBTs and the resultant health and environmental risks they pose will increase over time through expanded production, trade, and use of these substances. Yet many countries currently are unwilling or unable to commit to such controls For example, many areas continue to manufacture and use DDT. Without suitable and affordable substitutes in tropical nations, and the ongoing problem in most countries with safely managing the use of PBTs. The FY 2000 international annual performance goals build on efforts initiated in FY 1999 to directly engage other countries to reduce the global risk posed by PBTs, heavy metals, POPs, and other chemicals of concern.

Harmonization of Test Guidelines

The goal of international harmonization of test guidelines is to facilitate international trade while maintaining environmental protection. Harmonization also reduces the burden on chemical companies and other industries, which otherwise must perform separate, sometimes only slightly different, repeated testing in order to satisfy the regulatory requirements of different jurisdictions both within

the United States and internationally. Harmonization also expands the universe of toxic chemicals for which needed testing information is available, and fosters efficiency in international information exchange and mutual international acceptance of chemical test data.

Test Guidelines are collections of methods for testing chemicals and chemical preparations, such as pesticides and pharmaceuticals. The purpose of the testing is to assess hazard or toxicity. Each Test Guideline provides instructions on how a specific type of test should be performed. Typically, each country develops its own set of test guidelines in line with its internal legislative requirements and priorities. Just within the United States' environmental protection framework, different statutes require different levels of protection, or different metrics of measurement. In 2000, EPA will continue to emphasize harmonization with the United States' largest trading partners, cooperating closely with other Federal agencies and the Organization for Economic Cooperation and Development (OECD). In fact, EPA serves as a major source of scientific expertise and review in updating guidelines with the OECD.

EPA has published 97 guidelines in the areas of physical chemistry, ecotoxicity, environmental fate and human health. OECD has published 77 guidelines in the same four areas. In the pesticides program a total of 170 test guidelines have been published which include guidelines for the above four areas plus other specific requirements for the evaluation of pesticides (e.g., product identity, composition, application exposure).

Currently, all of the physical/chemical properties and environmental fate guidelines, 30 health effects guidelines and six ecotoxicity test guidelines have been harmonized between EPA and OECD. Forty-five health effects guidelines and thirteen ecotoxicity guidelines have been harmonized between EPA's toxic substances and pesticides programs. It is expected that one ecotoxicity and two health effects guidelines will be added in 2000. Some of these test guidelines incorporate recent and significant advances in the scientific knowledge and methodologies compared with older existing OECD guidelines, particularly in the areas of neurotoxicity, developmental neurotoxicity, and developmental and reproductive biology. EPA is currently leading the effort to harmonize these improved guidelines with OECD. EPA expects that by 2005 it will have harmonized all of its environmental toxicity, health effects and fate guidelines with other participating Federal agencies and with the international community via the OECD.

The achievement of the test guideline subobjective will lead to simplified testing requirements for the regulated industry, with unified guidelines that are acceptable to a wide array of Federal agencies and countries. This will in turn result in less confusion within regulated industries, increase efficiency in collecting test data and in assessing risk, avoid duplication of effort, reduce use of animals in testing, and reduce expense.

Development of Pollutant Release and Transfer Registries (PRTRs)

Pollutant Release and Transfer Registries (PRTRs) is the international term for emissions inventories. The Toxic Release Inventory (TRI) is the United States' version of a PRTR. International attention focused on PRTRs in 1992 when the Earth Summit (held in Rio de Janeiro) encouraged all nations to establish these systems as an integral role in the sound management of

chemicals. In North America, all three North American Free Trade Agreement (NAFTA) nations, Canada, the United States and Mexico, have established emissions inventories. There are currently eight nations with PRTRs and many more that are in the process of developing them. Still more countries have expressed an interest in developing such inventories. Fostering the public's right-to-know in other countries can help reduce pollution generated in these countries, just as it has in the United States.

EPA remains involved at all levels of the PRTR effort. This involvement includes country-to-country talks and active participation in international meetings and workshops. EPA works closely with the OECD, the United Nations Institute for Training and Research (UNITAR), and the PRTR Coordination Workgroup on ways to facilitate the public's right-to-know and the importance of collecting data on air, water, land and off-site transfers. As the OECD takes steps to integrate PRTR data with risk assessment and risk management activities, EPA will participate to ensure that the resulting decisions meet Agency objectives. To foster the public's right-to-know around the world, EPA will provide financial or technical assistance to help nations develop PRTRs, providing financial or technical assistance.

By 2005 EPA expects that all OECD countries will not only have developed PRTRs, but that these inventories will be fully operational. Besides being used for community right-to-know purposes, as TRI is currently used in this country, these registries will help monitor the progress countries make in complying with international agreements, such as the Montreal Protocol (CFC production) and Basel (waste transfer agreements).

International Screening Information Data Set (SIDS)

The U.S. is working with other OECD member countries to implement the International Screening Information Data Set (SIDS) program, a voluntary international cooperative testing program started in 1990. The program's focus is on developing base-level test information (including data on basic chemistry, environmental fate, environmental effects and health effects) for international high production volume chemicals. SIDS data will be used to screen chemicals and to set priorities for further testing and/or assessment. The Agency will review testing needs for 50 SIDS chemicals in 2000.

Bilateral Work with Canada and Mexico

EPA will work with Canada to develop strategies for the remaining uses of two priority chemicals, pentachlorophenol and lindane, both persistent bioaccumulative toxic pesticides. Both chemicals are on the Great Lakes Binational Strategy. In coordination with Mexico, EPA will investigate alternatives for the uses of DDT and chlordane.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$130,500) increase requested for enhanced International TSCA support including test guideline harmonization and outreach on the Screening Information Data Set project.
- (+$254,700) requested support for implementation of delayed technical assistance for countries working to improve their ability to track pollution transfers
- (+$16,000) Increase for workforce cost of living
- (+$2,291.1) Restored resources, will support efforts in mercury monitoring, international harmonization of monitoring standards, and emission control technology transfer for mercury. Long-range transboundry mercury atmospheric monitoring and modeling is proposed for Barrow, Alaska in support of the Arctic Council and its Arctic Monitoring and Assessment Program.

Annual Performance Goals and Performance Measures

Evaluate Domestic Suitability of International Consensus Testing

In 2000 Evaluate the domestic suitability of international consensus testing decisions made in the OECD International Screening Information Data Set (SIDS) program and obtain needed testing as required.

In 1999 Evaluate the domestic suitability of international consensus testing decisions made in the OECD SIDS program and obtain needed testing as required.

Performance Measures	FY 1999	FY 2000
Complete the review of testing needs for chemicals processed through the OECD- sponsored SIDS program	30 Testing reviews	50 Testing reviews.
Complete OECD harmonization	10 test guidelines	10 test guidelines

Baseline: Guideline harmonization baseline is 82 test guidelines (health ecosystem, exposure, physical and chemical properties) and 32 in draft. Complete testing and data on 25 chemicals processed through the OECD-sponsored SIDS program in 1998.

Conclude International Negotiations on POPs

In 2000 Successfully conclude international negotiations on a global convention on Persistent Organic Pollutants (POPs) reaching agreement on POPs selection criteria, technical assistance, and risk management commitments on specified POPs.

In 1999 Obtain international agreement on criteria for selecting Persistent Organic Pollutants (POPs) to be covered in a new global POPs treaty, and on capacity building activities to support the convention's implementation

Performance Measures	FY 1999	FY 2000
Agreed USG policies on selection criteria for Persistent Organic Pollutants	09/30/1999 negotiation	
Production of a final agreed convention text		09/30/2000 report
Agreement on selection criteria and methodology		09/30/2000 report

Baseline: This is a new global POPs treaty; therefore, a baseline has not been established.

Verification and Validation of Performance Measures:

The annual performance goals and measures identified under this objective are expressed as the completion of explicit tasks. These measures require assessment by program staff and management. Verification of these measures does not involve any pollutant database analysis, but will require objective assessment of tasks completed, compliance with regulatory development and authority delegation schedules, and the satisfaction of U.S. environmental negotiating objectives. Harmonization of testing guidelines requires scientific analysis as to equivalency of testing methods under consideration.

Coordination with Other Agencies:

To reach the agreement on POPs and PBTs, EPA must be involved with other Federal agencies, and external stakeholders, such as Congressional staff, industry, and environmental groups, to convey the U.S. approach and our concerns. EPA needs to ensure that the list of chemicals and the criteria and process for evaluating future chemicals are based on sound science. The Agency may typically coordinate with the Food and Drug Administration (FDA), FDA's National Toxicology Program, the Centers for Disease Control/Agency for Toxic Substances and Disease Registry (CDC/ATSDR), the National Institute of Environmental Health Sciences (NIEHS) and/or the Consumer Product Safety Commission (CPSC) on matters relating to OECD test guideline harmonization.

EPA's objective is to promote improved health and environmental protection world-wide. The success of this objective is dependent on successful coordination not only with other countries, but with various international organizations such as the Intergovernmental Forum on Chemical Safety (ICFS), the North American Commission on Environmental Cooperation (NACEC), the Organization for Economic Cooperation and Development's (OECD), and the CODEX Alimentarius Commission. The North American Free Trade Agreement and cooperation with Canada and Mexico play an integral part in the harmonization of data requirements.

The Agency's goal to develop common or compatible international approaches to pesticide review, registration and standard-setting extends to our international partnerships. The partnerships may be grouped into 3 broad categories: (1) policy, (2) programmatic, and (3) capacity building. The Agency, for example, worked closely with other member countries of the OECD to establish a pesticide forum to bring government pesticide regulators together to address common problems and achieve greater harmonization of policies and procedures.

The forum works on five major areas: re-registration, data requirements, risk reduction, test guidelines and hazard assessment. The OECD plans to include establishing internationally harmonized labeling for pesticides.

EPA continues to participate actively in the prior informed consent (PIC) agreement, a United Nations Environment Programme (UNEP)) and U.N. Food and Agriculture Organization (FAO) to promote safe management of chemicals in international trade. PIC provides for notification from countries to the U. N. about pesticides and chemicals that have either been banned or severely restricted for health and/or safety reasons. The Agency also has worked with the Codex Alimentarius Commission to improve the scientific basis and timeliness of Codex decisions, and boost public participation in the decision making processes.

At the EPA regional level, EPA also worked with the NACEC to deal with chemical pollutants of concern to Canada, Mexico, and the United States. The commission approved regional action plans to reduce the use of DDT and chlordane throughout North America.

Statutory Authorities:

Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) sections 3,4,5,6,10,11,18,20,23,24,25,30 and 31 (7 U.S.C. 136a, 126a-1, 126c, 136d, 136h, 136i, 136p, 136r, 136u, 136v, 136w, 136w-5 and 136w-6)

Emergency Planning and Community Right-to-Know Act (EPCRA) section 313 (42 U.S.C. 11023)

Toxic Substances Control Act (TSCA) sections 4, 5, 6, 12, and 13 (15 U.S.C. 2603, 2604, 2605, 2611, 2612)

Clean Water Act (CWA) (33 U.S.C. 1251-1387)]

Clean Air Act (CAA)

Federal Food, Drug and Cosmetic Act (FFDCA).

Resource Conservation and Recovery Act (RCRA)

North American Agreement on Environmental Cooperation (NAAEC)

1996 Habitat Agenda, paragraph 43bb

U.S./Canada Agreements on Arctic Cooperation

1989 US/USSR Agreement on Pollution

1991 U.S./Canada Air Quality Agreement

1978 U.S./Canada Great Lakes Water Quality Agreement

1909 Boundary Waters Agreement

World Trade Organization Agreements

North American Free Trade Agreement

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Reduction of Global and Cross-border Environmental Risk

Objective # 5: Achieve Cleaner and More Cost-Effective Practices

By 2005, increase the application of cleaner and more cost-effective environmental practices and technologies in the U. S. and abroad through international cooperation.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Achieve Cleaner and More Cost-Effective Practices	**$11,136.2**	**$9,212.5**	**$10,672.1**	**$1,459.6**
Environmental Program & Management	$11,136.2	$9,212.5	$10,672.1	$1,459.6
Total Workyears:	39.6	51.5	45.5	6.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Environment and Trade	$3,178.0	$4,514.6	$4,236.8
Partnership with Industrial and Other Countries	$7,800.4	$4,546.6	$6,272.2

FY 2000 Request

EPA will continue its efforts to (1) protect human health and global, regional and local ecosystems through enhanced environmental management capabilities in other industrial and priority countries; (2) reduce costs of environmental protection in the U.S. through international sharing of information and costs in environmental policy and research programs; (3) promote environmentally sound trade worldwide through participation in multilateral environmental agreements, including trade regimes, and the strengthening of global environmental institutions; and (4) advance U.S. foreign policy, economic, national security, humanitarian and other interests abroad.

In 2000, the Agency will: (1) address common environmental problems at the border areas through the North American Commission for Environmental Cooperation, especially those relating to NAFTA, among the United States, Canada, and Mexico. The Agency will also work with counterparts in Canada and Mexico to develop comparable approaches to air quality and emissions monitoring in North America as well as procedures for transboundary environmental impact assessments. Additionally, combined efforts are underway to examine the impact on the environment of trade and the development of trilateral plans for the sound management of chemicals; (2) enhance cooperation through the World Trade Organization (WTO) and other multilateral fora to ensure that domestic and international environmental laws, policies and priorities are recognized and, where appropriate, promoted within the multilateral trading system; (3) promote cooperation with other federal agencies, states, business and environmental NGOs to ensure an appropriate balance between the promotion of trade in U.S. goods and the need to protect the U.S. domestic environment and achieve global environmental policy goals; (4) enhance cooperation with other federal agencies, states, local groups, and the business community in promoting the worldwide dissemination of environmental technologies and services; (5) assist in implementation of bilateral agreements with key countries facilitating scientific, technical and other forms of environmental cooperation; (6) provide multilateral collaboration in coordinating policies and in implementing cooperative research and development programs,(7) provide international technical assistance, training, information exchange and other capacity-building programs.

The international drinking water base resources will focus on applying cleaner and more cost-effective environmental practices and technologies by improving watershed protection and drinking water quality in partner countries. The source water protection project will provide partners with low-cost methods of preventing drinking water well contamination, of reducing non-point-source pollution to surface waters, and other means of improving the quality of downstream waters used for drinking. The treatment plant optimization project will improve the performance of existing drinking water infrastructure in partner countries by identifying and implementing low-cost plant management and operations changes. The public/private partnership program in Puerto Rico will introduce low-cost water disinfection methods to small distribution systems, thereby improving drinking water quality.

Providing access to microbiologically safe drinking water and the protection of drinking water sources in developing nations remain top priorities. Microbiologically unsafe drinking water chiefly results from poor environmental management, inadequate water infrastructure, or poor maintenance and operation of the water infrastructure. Health impacts and societal costs, including infant mortality and lost work force productivity, are the outgrowths of these conditions. In 2000, this project will identify critical health effects of poor quality water in targeted communities, and hopefully will demonstrate how project activities are reducing the incidence of these health problems. By doing so, these efforts will focus attention on the *outcome* of the environmental improvements being implemented. These improvements directly support the goal of applying "cleaner and more cost-effective environmental practices" by improving drinking water treatment methods, by protecting drinking water sources, and by introducing low-cost water disinfection techniques.

The Agency will address concerns for exposure of children to environmental tobacco smoke and other environmental threats. Using an international, peer reviewed technical scientific document, compiled by the World Health Organization and published in 1999, the focus of our international program is to improve the protection of children's health from environmental threats by: prioritizing the research needs identified, seeking to allocate research among countries and international organizations, agreeing on time lines, and developing international reporting mechanisms. The program will also identify best public awareness practices, select countries or regions that need and want increased capacity to reduce exposures to environmental tobacco smoke (ETS), and partner with other organizations and countries to improve information dissemination and public education on the health impacts of children from ETS.

By increasing knowledge through research and exchange of results on health impacts of childhood exposure to ETS, policy-makers in the U.S. and worldwide will be better informed on how best to protect the public health. This will result in improvements in policy development and improved community awareness, which will lead to reduced exposure of children to ETS. By reducing exposure to this key indoor air pollutant, we expect to see measurable improvements over the long run in child health, as indicated by morbidity and mortality data on acute respiratory infections, in particular asthma. A secondary effect will be to increase awareness of indoor air quality in general, leading to increased attention given to the other primary indoor air contaminant in less developed countries, indoor use of biomass fuel. Reducing exposure to both ETS and biomass fuels should have significant, measurable results in the health status of children.

A new effort will be initiated in Sub-Saharan Africa, outside of South Africa, in developing cleaner and more cost-effective environmental management capacity. Corporate responsibility and P2E2 (Pollution Prevention and Energy Efficiency) are likely to be the most promising targets of opportunity, allowing us to leverage significant private sector support and addressing critical global and local problems which are currently almost entirely ignored by donors and governments. Another target will be clean water and sanitation technical and policy assistance in urban areas. In order to measure results in out years, 2000 resources will be devoted to identifying geographic and sectoral targets of opportunity and gathering baseline information.

This effort will apply EPA technical cooperation tools and information exchange abilities to achieve measurable improvements in environmental protection in target areas. These projects will be replicable and will build in-country capacity such that in out years greater results will be obtained.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$1,447.8) A restoration of resources from 1999 will support activities described under our international safe drinking water initiative.

Annual Performance Goals and Performance Measures

In 2000 Deliver 30 international training modules; implement 6 tech assistance/ technology dissemination projects; implement 5 cooperative policy development projects; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers.

In 1999 Deliver 30 international training modules; implement 6 tech assistance/ technology dissemination projects; implement 5 coop policy development projects; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers.

Performance Measures	FY 1999	FY 2000
Number of training modules delivered	30 modules	30 modules
Number of tech assistance or tech dissemination projects carried-out	6 projects	6 projects
Number of cooperative policy development projects implemented		5 projects
Number of info products disseminated to foreign customers	2500 products	2500 products
Number of capacity building activities scheduled for initiation in FY 2000 and beyond	2 report	

Baseline: The purpose of these programs will be to reduce air, water, and waste problems in at least 6 environmentally and geopolitically significant countries and to improve the cost-effectiveness of U.S. domestic programs.

Verification and Validation of Performance Measures

The annual performance goals and measures identified under this objective are expressed as the completion of explicit tasks. These measures will require assessment by program staff and management. Verification of these measures does not involve any pollutant database analysis, but will require objective assessment of tasks completed and the satisfaction of U.S. environmental negotiating objectives.

Coordination with Other Agencies:

USAID, USDOS, USTR, Peace Corp

Statutory Authorities:

EPCRA section 313 (42 U.S.C. 11023)

PPA (42 U.S.C. 13101-13109)

World Trade Organization Agreements

North American Free Trade Agreement

North American Agreement on Environmental Cooperation
Treaties:

- The Boundary Waters Treaty of 1909
- 1987 Great Lakes Water Quality Agreement
- 1997 Canada-U.S. Great Lakes Binational Toxics Strategy

Goal 7: Right to Know

Goal 7: Expansion of Americans' Right to Know About Their Environment VII-1
Increase Quality/Quantity of Education, Outreach, Data Availability VII-9
Improve Public's Ability to Reduce Exposure VII-23
Enhance Ability to Protect Public Health VII-35

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Expansion of Americans' Right to Know about their Environment

Strategic Goal: Easy access to a wealth of information about the state of their local environment will expand citizen involvement and give people tools to protect their families and their communities as they see fit. Increased information exchange between scientists, public health officials, businesses, citizens, and all levels of government will foster greater knowledge about the environment and what can be done to protect it.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Expansion of Americans' Right to Know About their Environment	**$158,923.3**	**$133,467.2**	**$144,599.1**	**$11,131.9**
Increase Quality/Quantity of Education, Outreach, Data Availability	$75,522.7	$67,818.5	$77,487.5	$9,669.0
Improve Public's Ability to Reduce Exposure	$49,959.0	$42,247.7	$41,230.8	($1,016.9)
Enhance Ability to Protect Public Health	$33,441.6	$23,401.0	$25,880.8	$2,479.8
Total Workyears:	736.2	720.8	754.3	33.5

Background and Context

Providing all Americans with access to sound environmental information and involving the public in our work are essential parts of a comprehensive approach to protecting the environment.

This goal is premised on the concept that all U.S. citizens have a "right-to-know" about the pollutants in their environment, including land, air and water pollution as well as potential health effects of the chemicals used in the food they consume and everyday products they purchase. This premise is especially important to minority, low-income, and Native American communities that suffer a disproportionate share of health effects from poor environmental conditions.

Access to environmental information enables American citizens to make informed decisions about their local environment. It also leads to creative and sustainable solutions to environmental risks, as well as opportunities for preventing pollution. The Agency believes all U.S. citizens have the right to knowledge and representation in public policy and environmental decision-making.

Means and Strategy

The purpose of this goal is to empower the American public with information, enabling them to make informed decisions regarding environmental issues in their communities. EPA will expand environmental education, outreach and data availability. EPA will also expand the range of data it collects and improve the quality and usability of the data. The Agency will also ensure the data are widely available through the Internet, mass media and other sources.

The right-to-know is fundamental to EPA's mission and the effective management of our data is an important aspect of measuring our progress in protecting the American people and the environment from toxic substances and pollution. The Agency has accelerated its efforts to improve the accuracy of its data, and to reduce the burdens to industry associated with reporting. Also the Agency is working to enhance the coordination of data collection activities with states and to improve our data collection methods and use the latest technologies to consolidate information on a single Internet site.

The Agency is working to redesign its internal structure to better meet the information demands of the 21st century. EPA's new vision and approach to information management will involve the creation of a single program manager and office responsible for information management, policy and information technology stewardship across the Agency. This office would be responsible for developing and implementing information standards and accountability systems that will improve environmental information within the Agency and the information provided to the public. This office would oversee data collection, assure data quality, and make sure that data are appropriate for intended uses. The office would also work toward reducing information collection and reporting burden; filling significant data gaps; and providing integrated environmental and public health information and statistics to the public.

Research

The President's Environmental Monitoring for Public Access and Community Tracking (EMPACT) program will continue research to provide the public with information regarding local environmental conditions (e.g. toxic pollutants, water and air quality). EMPACT will provide at least 75 of the nation's largest metropolitan areas with access to information regarding the quality of their local environments, and relevant scientific and technical tools to interpret and evaluate potential impacts and risks to these environments. Citizen involvement in protecting the environment will also be expanded through the Integrated Risk Information System (IRIS). IRIS is a database of consensus health information on environmental contaminants and is used extensively by EPA Program Offices and Regions where consistent, reliable toxicity information is needed for credible risk assessments.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Increase Quality/Quantity of Education, Outreach, Data Availability

By: 2000 The Agency will streamline and improve the information reporting process between state partners and EPA by increasing the number of state participants in the One Stop Reporting program from 29 to 38.

By: 2000 Ensure that EPA's policies, programs and activities including public meetings, address minority and low income community issues so that no segment of the population suffers disproportionately from adverse health or environmental effects, and that all people live in clean, healthy and sustainable communities consistent with Executive Order 12898.

By: 2000 Improve public access to compliance and enforcement documents and data, particularly to high risk communities, through multi-media data integration projects and other studies, analyses and communication/outreach activities.

Objective 02: Improve Public's Ability to Reduce Exposure

By: 2000 All community water systems will issue annual consumer confidence reports according to the rule promulgated in August 1998.

By: 2000 Process all submitted facility chemical release reports; publish annual summary of TRI data; provide improved information to the public about TRI chemicals; and maximize public access to TRI information.

Objective 03: Enhance Ability to Protect Public Health

By: 2000 75% of EMPACT communities have in place, or have initiated, community-based strategies for time relevant environmental monitoring, information management and communication that will result in sustained community capacity to deliver timely environmental information.

Highlights

The increasing easy availability of public access to electronic media offers unprecedented opportunities for EPA to provide citizens with the information necessary to effect substantial environmental improvements. In support of this objective and the President's "Right-to-Know" goals, EPA will continue to increase the amount and quality of publicly available information on environmental programs. EPA also realizes that while it is important to provide up-to-date, accurate information, it must also ensure the public finds the information useful. The Agency collects data in a variety of systems, on a variety of environmental pollutants that impact land, air, water as well as data on potential health effects of chemicals in food and manufactured products. EPA is aggressively seeking to integrate all relevant sources of data and information to enhance user-friendliness for the non-technical user and to support comprehensive approaches to environmental protection.

In partnership with states, the Agency will pursue efforts to expand publicly available information. This includes the One-Stop Reporting initiative, the Reinventing Environmental Information (REI) initiative, and the Envirofacts database. The Center for Environmental Information and Statistics (CEIS) will serve as the agency's point of internal focus and convenient point of external public access for integrated, multimedia information. Data integration will be promoted through such projects in 2000 as Integrated Data for Enforcement Analysis (IDEA) and the Sector Facility Indexing Project (SFIP) and Environmental Monitoring for Public Access and Community Tracking (EMPACT).

The Agency-wide Enhanced Public Access Project will make all significant Agency guidance and policy statements electronically accessible along with site-specific interpretations of the regulated entities' environmental management practices. In 2000, 90 percent of Agency policy and guidance documents will be available via the Internet to regions, states, industry, and the public. EPA will also work to develop and improve existing tools to identify communities most disproportionately affected by toxic releases and hazards. The Agency will focus on collaboration and coordination of efforts to address environmental justice issues within EPA and with other Federal agencies.

The Agency is working to ensure that small business (and other small entities, such as communities and non-profit organizations) have easy access to information and may participate appropriately in regulatory activities that affect them. EPA is seeking as well to reduce paperwork burden on small business. The Agency's Small Business Advocacy Chair has moved aggressively to implement not only the letter, but the spirit of the Small Business Regulatory Enforcement Fairness Act (SBREFA); the Agency has completed 13 Small Business Advocacy Panels to date, which have noticeably reduced potential burdens on small entities. The Agency's Small Business Ombudsman serves as EPA's focal point for small business outreach and information; it also conducts oversight and reports annually to Congress on state assistance to small businesses under Section 507 of the Clean Air Act.

In 2000, EPA will continue to coordinate with the National Advisory Council on Environmental Policy and Technology (NACEPT) and its standing committees to identify and foster new environmental technologies. Other activities include facilitating and monitoring the Agency's response to NACEPT recommendations that are accepted by the Administrator, and managing statutorily-mandated advisory committees dealing with North American Free Trade Agreement (NAFTA) implementation and U.S./Mexico border issues. The advisory committees are: the National Advisory Committee/ Governmental Advisory Committee and the Good Neighbor Environmental Board.

The Agency will implement the Electronic Data Interchange for Discharge Monitoring Reports (DMR) which will allow National Pollutant Discharge Elimination Systems (NPDES) permittees to submit monitoring data electronically to EPA, rather than filing quarterly paper reports. As part of the Agency's integration efforts, drinking water systems will provide customers an annual consumer confidence report that contains information about the quality and source(s) of their drinking water beginning in 2000. EPA's watershed-related electronic outreach efforts, including Surf Your

Watershed and the Index of Watershed Indicators, will directly support efforts to implement the President's "Right-to-Know" goal by providing up-to-date, accurate pictures of the conditions and stressors.

Under the Emergency Planning and Community Right-To-Know Act (EPCRA), EPA is committed to expanding environmental release information gathered under the Toxic Release Inventory (TRI) by increasing the chemicals covered and expanding the industrial sectors required to report. Examples include: adding to the TRI reporting list approximately 40 chemicals deferred from earlier rulemakings, assessing the need to include additional industrial sectors and evaluating the need for more in-depth chemical use data. In 2000 EPA also will process 110,000 facility reports and issue the TRI Public Data Release for reporting year 1998. EPA will continue to expand the use of the Internet for delivering this information and we are making information available by zip code, and facility. Over time, there has been a significant decrease in the amount of toxic materials released into the environment, according to TRI reporting by facilities.

The Pesticides program emphasizes effective public outreach as well as extensive interaction with stakeholders to ensure that the information provided keeps pace with the latest scientific developments. Public access tools are selected for convenience to a broad audience - industry, farmers and agricultural workers, and the public at large. Websites, databases and risk modeling programs are available along with brochures, fact sheets, public meetings and training sessions, and information hotlines.

To help communities identify information needs and devise methods to collect environmental data, EPA is developing and piloting risk-based screening tools to help communities understand environmental data. These tools will be pilot-tested and then disseminated to other communities across the nation, enhancing the public's ability to address the areas of greatest concern for their communities. To help the public have adequate access to timely and credible risk assessment information, EPA will apply new and upgraded technology that will incorporate a systematic approach to automated sampling, real-time analysis and communication of environmental data, and provide timely, reliable and consistent environmental information in a meaningful format that is easily accessible by the public.

As a guiding principle, the President's Environmental Monitoring for Public Access and Community Tracking Program (EMPACT) will strive to break new ground in the use of updated technology solutions as well as communication of environmental information that the public needs to know as part of their day-to-day decision-making. EPA will coordinate EMPACT activities among federal, state, Tribal, and local governments as well as stakeholders, such as community health officials, businesses, industries, schools and environmental organizations. The Integrated Risk Information System (IRIS) supports EPA's community-based environmental research which is used extensively by EPA Program Offices and Regions where consistent, reliable toxicity information is needed for credible risk assessments. Guidance and support will be provided to risk assessors through the provision of risk assessment guidelines, expert consultation and support, and risk assessment training.

Currently in development is a state-of-the-art scientific information system that will facilitate communication and increase efficiency to do research among Agency staff and stakeholder partners. It will be accessible on public world wide networks. Use of web-enabled technology will provide agency scientists and professionals easy access for retrieval, analysis and archival of data and documentation to support human health and environmental research using a standard desktop Internet browser. The system will improve scientists' operations, reduce research costs and facilitate new analyses as teams of scientists will be able to integrate research data. By 2000, the system will be compatible with the National Spatial Data Infrastructure (NSDI) services.

Efforts to allow better integration with our state and local partners will continue, including support to the Local Government Advisory Committee and the Small Town Advisory Subcommittee. In addition, EPA will design and manage meetings and conference calls and work with states and state associations to ensure that state concerns are considered in Agency policies, guidance, and regulations.

Finally, EPA will provide technical assistance to both Headquarters and Regional program office personnel to ensure that small, minority and women-owned businesses receive a "fair share" of Agency procurement dollars. This "fair share" may be received either directly or indirectly through EPA grants, contracts, cooperative agreements, or interagency agreements. Pursuant to P.L. No. 102-389, the Agency has a national goal of 8% utilization of minority and women-owned businesses in the total value of Agency procurements and financial assistance agreements. This activity will enhance the ability of small, minority and women-owned businesses to participate in the Agency's objective to protect public health.

External Factors

EPA relies heavily on partnerships with the states, tribes, local governments and regulated parties to protect the environment and human health. EPA's success depends on the ability of these entities to access the decision-making process as it relates to their local environment. In addition, EPA relies upon information management reforms that are essential to the Agency's approach to environmental protection. Examples of management reforms designed to improve the availability of environmental performance data to the public include implementation of data standards for major systems and the subsequent information collection and data integration. Effective partnerships with states and industry are another essential factor in achieving this goal. The Agency is promoting advanced technology, including the Internet, to disseminate environmental information at the local level. New technology, emerging environmental problems or newly identified priorities could affect the time frame for achieving the Goal 7 objectives.

Therefore, the ability of the Agency to achieve its strategic goal of expansion of Americans' Right-to-Know about their environment is influenced by several factors over which the Agency has only partial control. As such, success of these programs partially depends on the voluntary cooperation and collaboration between EPA and the private sector and the general public. The

success of the Agency's Right-to-Know or public outreach efforts is ultimately determined by increased understanding by the public and their subsequent actions taken to improve their environment. We believe that with increased education, outreach and data availability, the public will be better able to participate in decisions that lead to solving the nation's environmental problems.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Expansion of Americans' Right to Know About Their Environment

Objective # 1: Increase Quality/Quantity of Education, Outreach, Data Availability

By 2005, EPA will improve the ability of the American public to participate in the protection of human health and the environment by increasing the quality and quantity of general environmental education, outreach and data availability programs, especially in disproportionally impacted and disadvantaged communities.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Increase Quality/Quantity of Education, Outreach, Data Availability	**$75,522.7**	**$67,818.5**	**$77,487.5**	**$9,669.0**
Environmental Program and Management	$73,094.2	$65,865.6	$75,118.8	$9,253.2
Hazardous Substance Superfund	$2,428.5	$1,952.9	$2,368.7	$415.8
Total Workyears:	351.1	366.2	395.2	29.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
EMPACT	$7,229.8	$1,202.3	$3,573.5
Reinventing Environmental Information (REI)	$17,703.5	$12,547.8	$15,731.8
Superfund - Maximize PRP Involvement (including reforms)	$364.4	$364.4	$0.0
Environmental Education	$8,477.6	$7,767.6	$8,426.1
GLOBE	$1,000.0	$0.0	$1,000.0
SBREFA	$703.0	$760.3	$777.3
Small Business Ombudsman	$987.1	$1,110.3	$1,120.3

Center for Environmental Statistics (CEIS)	$4,355.3	$3,965.8	$8,054.4
Information Technology Management	$6,743.5	$4,234.8	$6,743.5

FY 2000 Request

EPA continues efforts to provide an ever increasing quantity of information to the public so that the public will be able to make informed and educated decisions on environmental issues affecting their communities. Information will be made available to educators, academic institutions, scholars, the public, news organizations, and the North American Free Trade Agreement (NAFTA) partners so they may make more informed decisions that will help protect public health and the environment.

The effective management of EPA's data is central to the measurement of its progress in delivering environmental protection. As the Agency embarks on a new era of information technology and enhanced public access to data, EPA is committed to ensuring that the Agency's data is timely, accurate, integrated, and useful to the public, and is able to effectively inform our decision-making. The Agency is working to promote data quality, reduce the burden associated with data collection and reporting, and enhance public access.

In partnership with the states, EPA is continuing to implement the Reinventing Environmental Information (REI) initiative, a multi-year commitment to implement key information management reforms that are essential to support the Agency's new approaches to environmental protection. Key elements of REI include the implementation of data standards for major systems and to increase availability of electronic reporting methods for regulated entities. This includes one-stop access to and reporting of program information. The Agency's One Stop Reporting Program will focus on streamlining reporting by regulated entities and ultimately improve the availability of environmental performance data to the public. This program will be implemented through a cooperative approach with state environmental agencies to improve reporting efficiency. A central component of the One Stop Reporting Program is the establishment of a standard facility identifier for regulated entities.

In addition, EPA will manage and support a comprehensive world wide web site to ensure public access to Agency information such as databases, press releases, locator tools, fact sheets, regulations, policy and guidance, and other Agency information. The Agency will continue to provide the Envirofacts database to Federal agencies, environmental interest groups, the regulated community, state and local communities, Tribal governments, and the general public. Envirofacts allows the Agency to develop new software tools for conducting permit reviews, assessing compliance status and trends, and conducting environmental assessments. EPA will work to develop and improve existing tools to identify communities most disproportionately affected by toxic releases and hazards. This objective involves collaboration and coordination of the efforts outlined to address environmental justice issues within EPA and with other Federal agencies.

The Agency will also improve public access to water quality data in 2000 through the Environmental Monitoring for Public Access and Community Tracking (EMPACT) project. This

project will provide user-friendly information to the public in the nation's largest communities about the compliance status of local waste water dischargers and what non-compliance means for the communities environmental and public health conditions. EPA's watershed-based electronic outreach efforts, including Surf Your Watershed and the Index of Watershed Indicators, will directly support efforts to implement the President's "Right-To-Know" goal by providing up-to-date, accurate pictures of the conditions and stressors in their communities.

The Index of Watershed Indicators (IWI) combines 15 indicators of aquatic resource health to characterize the condition and vulnerability of more than 2,000 watersheds in the United States (Alaska, Hawaii, and Puerto Rico were added in 1998). Several Federal, state and non-governmental organizations contributed data and technical support to this Index. These same agencies share in our past water quality successes and will continue to be involved in addressing the problems IWI brings to light. The IWI will also enable managers and community residents to understand and take action to protect the watersheds where they live. The watershed information provided by IWI can also lead to more specific information about their water, how they compare to similar watersheds, and what may be causing problems. Updating the IWI report annually (and more frequently on the Internet) will provide current information on human and environmental health. Additionally, the updates will be supplemented with more data and educational material each year

The Agency will move forward in 2000 in its objective to increase the amount, quality and suitability of environmental information available to the public by expanding and updating the CEIS Web site and implementing the data gaps strategy. Increased resources will assist the Agency in its efforts to provide data that will be consistently organized to allow valid comparisons, fully documented to highlight strengths and limitations, regularly updated and easily accessible by EPA staff and the interested public and will support:

- Integration of Environmental Data - CEIS will build on the foundation of REI data standards by developing and make electronically available spatial data, providing information on ambient environmental conditions in air, surface water and drinking water for states, counties and cities; industry sector data, providing information on pollutant emission to all media for all regulated industry sectors at geographic scales ranging from national to zip code levels; and chemical data, providing available information on chemical pollutants by general class, specific compounds as well as health and environmental effects for all industry sectors and places.

- More Effective Interpretation/Communication of Data - CEIS will respond to public needs for more understandable presentation of environmental data by improving web presentation techniques to more simply communicate "bottom line" environmental conditions and related risk information, allow valid comparisons across places, industries and chemicals and convey criteria for quality data; begin the development of environmental indices that combine multiple environmental indicators; and organize data to respond to defined customer needs and frequently asked questions.

- Implementation of the Agency's Data Gaps Strategy - CEIS will coordinate the Agency process for developing plans for filling data gaps to ensure common, cost-effective solutions for meeting data needs under GPRA, NEPPS, responding to public questions and general program management; and coordinate external stakeholder involvement in determining data needs to ensure two way communication of audiences needs and preferences for EPA data, reports and publications, as well as of competing demands on EPA data acquisition resources.

Multimedia resources serve to implement a grant program to educate students, individuals, tribes and communities about environmental and health protection. This program supports educational and training programs that encourage replication of model environmental education curricula programs and materials for educators and teachers. It also supports youth programs such as the President's Environmental Youth Awards. The National Environmental Education Act specifically earmarks the percentage of appropriated funds that must be used for activities under certain sections of the Act. In addition to the grants funded at Headquarters, the Regions fund approximately 200 to 250 grants per year, depending on the number of grants and funds requested.

The Agency uses various media resources to aid and increase public understanding of science, thereby increasing public awareness of environmental issues and their technological and scientific solutions. Resources for the Vice President's GLOBE initiative will be used to convene workshops and meetings to involve scientists and educators in selecting appropriate environmental observations that will be used to coordinate the work of students, teachers, and scientists to study and understand the environment. Students will learn how to protect the environment and improve their math and science skills.

EPA's Enforcement and Compliance Assurance program improves public access to information with specialized training of EPA regions and the states and through the Enforcement Docket, a physical and an electronic site where the public may access policies, guidance documents and legal interpretations. The program also assists facilities in setting up electronic data submissions, provides outreach to the regulated community on priority sectors, and works with industry associations. The Agency will implement the Electronic Data Interchange for Discharge Monitoring Reports (DMR) which will allow National Pollutant Discharge Elimination System (NPDES) permittees to submit monitoring data electronically to EPA, rather than filing quarterly paper reports.

The Enforcement and Compliance Assurance program will also promote data integration projects in 2000. One of these, Integrated Data for Enforcement Analysis (IDEA), makes integrated compliance data from individual data bases available nationally in an interactive, online mode. Another data integration project the program supports in 2000 is the Sector Facility Indexing Project (SFIP). The Agency will expand the comprehensive multimedia profiles of major regulated industries and provide the public with information on industry demographics, processes used, pollution emissions, compliance history, pollution prevention and regulatory requirements.

The Enforcement and Compliance Assurance program will contribute in 2000 to the Agency-wide Enhanced Public Access Project which will make all significant Agency guidance, policy

statements and site-specific interpretations of the regulated entities' environmental management practices electronically accessible to regions, states, industry, and the public. In 2000, 90 percent of Agency policy and guidance documents will be available via the Internet.

The Agency's environmental justice goals are to: ensure the integration of environmental justice into the Agency's programs, policies, and activities consistent with Executive Order 12898; support community right-to-know through information dissemination and managing the National Environmental Justice Advisory Council; oversee the implementation of the Executive Order to bring environmental justice to Americans who are suffering disproportionately; and, ensure that low-income and minority communities have access to information about their environment and that they have an opportunity to participate in shaping the government policies that affect their health and environment.

EPA is the lead Agency for Executive Order 12898, which requires each Federal agency to integrate environmental justice into its mission by identifying and addressing disproportionately high and adverse human health and environmental effects of its own programs, policies and activities on minority populations and low-income populations. EPA will continue in 2000 to ensure that all Federal agencies are aware of and incorporate environmental justice concerns into program planning and implementation as well as into EPA's own programs. The Agency will also continue to hold National Environmental Justice Advisory Council meetings to advise the Administrator on environmental justice concerns.

The Agency will work in particular to make sure that minority, low-income and Native American communities receive adequate information and representation in public policy and environmental decision-making processes. Environmental programs do not always address the disproportionate exposures to pesticides, lead or other toxic chemicals suffered by certain communities at home or at work. In the pesticides enforcement program, EPA will continue efforts to protect American and "guest" farm workers from pesticide exposure. The RCRA Enforcement program will implement the Indian Policy in 2000 which lays out procedures for providing compliance assistance and working cooperatively with the Tribes on enforcement. The enforcement program is also planning an environmental justice initiative on lead in housing in 2000 and will establish a hot-line for reporting suspected violations of environmental requirements in ENVIRONMENTAL JUSTICE communities. To raise awareness and understanding of environmental issues affecting these high risk communities, at least one Enforcement Roundtable will be held in such a community. EPA will also continue to provide grants to minority and/or low income communities to address environmental justice issues.

Resources in this objective also support the National Advisory Council on Environmental Policy and Technology (NACEPT) and its standing committees, facilitate and monitor the Agency's response to NACEPT recommendations that are accepted by the Administrator, and manage statutorily-mandated advisory committees dealing with NAFTA implementation and U.S./Mexico border issues. The committees are: the Good Neighbor Environmental Board and the National Advisory Committee/Governmental Advisory Committee. With these resources, EPA identifies and promotes the development of new and innovative environmental technologies, policies and

approaches to environmental management through cooperative partnerships with organizations and institutions outside of EPA, and identifies ways to remedy administrative or other barriers that stifle effective implementation.

EPA controls an ever increasing quantity of correspondence, and routes, logs, and tracks Agency Freedom of Information Act (FOIA) requests. This office develops FOIA policy; coordinates Agency FOIA, Electronic FOIA, and correspondence policies; guides and trains Agency personnel in FOIA and correspondence activities; prepares a yearly FOIA report to Congress; provides policy and program oversight on FOIA; and manages and tracks executive correspondence.

The regulatory development process ensures the Agency's compliance with various statutes and Executive Orders. Through an improved and streamlined regulatory process that includes increased public information, EPA is committed to providing quality information to internal as well as external customers via the Intranet and Internet. EPA has also been a leader in the Federal government in the use of consensus building techniques to assist in the area of regulatory development. EPA will continue to develop negotiated rulemakings, policy dialogues and other consensus based stakeholder involvement techniques at the national, regional, local and international levels. Involvement of stakeholders in crafting the programs and rules by which they will abide promotes innovative, effective and cost effective solutions and fosters earlier, more complete compliance with environmental protection measures.

In 2000, the Agency will continue to advance this objective by ensuring that EPA rulemakings adhere to all applicable statutory and executive requirements, and achieve environmental results with a minimum burden on the public. The Agency will continue to expand outreach to small entities such as, small businesses, small governments, and small non-profits, establishing formal mechanisms and building partnerships to advocate small entity involvement in Agency rulemakings. EPA will complete Regulatory Flexibility analyses for all of its rulemaking that may have significant impacts on a substantial number of small entities and initiate a small communities outreach program to gather information on impacts of EPA rules on small communities. The Small Business Ombudsman will augment the Small Entities Homepage with specific information on rules for 20% of the sectors identified by the Agency, and improve small entity outreach through training and technical assistance to Agency managers and staff.

FY 2000 Change from FY 1999 Enacted

<u>EPM</u>

- (+$2,386,100) Reflects restoration of reductions taken to the Environmental Education Program in 1999, as well as increased workforce costs.

- (+$4,088,500, +20.0 workyears) Redirection to support efforts to provide the public with better environmental information through the CEIS. These resources will assist the Agency in meeting the concerns about the quality and adequacy of Agency databases by providing additional resources to: integrate environmental data in ways that will allow valid comparisons, document strengths and limitations, and be regularly updated; provide more effective interpretation/communication of data including technical analysis and customer research to ensure that real needs are being met; and supporting implementation of the Agency's data gaps strategy by coordinating the process for plans to address data gaps and coordinating external stakeholder involvement.

- (+$5,522,800) Additional resources will ensure most deadlines and milestones as stated in the REI action plan, particularly those associated with data standards and electronic reporting development and implementation, can be met. Lower priority programs will also receive increased funding.

- (-$698,100, -3.0 workyears) Redirection to support economic analysis.

- (-$1,014,000) Reflects an overall reduction in the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. The Agency will continue its commitment to the program by awarding new grants for metropolitan areas and maintaining the Agency's efforts to develop time-relevant communication methods. The activities that support public access have been expanded to include EMPACT, IDEA, and the Sector Facility Indexing Project (SFIP). Each of these programs provides compliance and enforcement information that is accessible to the public. This does not represent an increase in funds to these activities just a realignment of the activities.

- (-$1,099,400, -2.0 workyears) This office received a one-year increase in resources in 1999 to fund increased FACA activities associated with the office's new NAFTA FACA responsibilities.

- (-$4,600,000) Congressional earmarks in the 1999 Enacted Budget are not sustained in this request.

Annual Performance Goals and Performance Measures

Index Watershed Indicators

In 1999 Index of Watershed Indicators (IWI) is updated.

Performance Measures	**FY 1999**	**FY 2000**
Updated IWI system, adding data layers and data inputs.	1 System	

Baseline: The IWI was first published in September 1997.

Outreach

In 2000 Improve public access to compliance and enforcement documents and data, particularly to high risk communities, through multimedia data integration projects and other studies, analyses and communication/outreach activities.

In 1999 Continue to make Enviroene more user friendly and continue electronic conversion of appropriate enforcement documents and data to provide for enhanced public access.

In 1999 Continue to improve public access to compliance and enforcement data, particularly to high risk communities, through multimedia data integration projects and other studies, analyses and communication/outreach activities.

Performance Measures	**FY 1999**	**FY 2000**
Documents included in Enviroene	6300 Documents	
Hits to Several Web Sites	650000 Hits	
Specialized assistance & training	83 Courses	
Increase use of Sector Facilities Indexing Project website user sessions over FY99 levels		5 percent
Increase by 50% (over FY99 levels) the number of states with direct access to Integrated Data for enforcement Analysis (IDEA)		28 states
Percent of OECA policy and guidance documents available trough the Internet		90 percent
Compliance and Enforcement data placed on Envirofacts	3 systems	

Baseline: The baseline for the public access goal comes from a variety of sources, including the website for Sector Facilities Indexing Project (SFIP) where FY99 was the first complete year of usage and the Integrated Data for Enforcement Analysis (IDEA) to which six (6) states have access in FY98.

Public Access Improvements

In 2000 EPA will improve the quality, effectiveness, and efficiency of EPA's Internet site by increasing the number of Website hits, pages available and distinct hosts.

In 1999 EPA will improve the quality, effectiveness and efficiency of EPA's Internet site by increasing the number of Website hits, pages available and distinct hosts.

Performance Measures	**FY 1999**	**FY 2000**
Percentage of website hits.	10 Percent	10 Percent
Percentage of internet site pages available.	10 Percent	10 Percent
Percentage of distinct hosts accessing the Website.	10 Percent	10 Percent

Baseline: EPA will improve quality, effectiveness, and efficiency of EPA's Internet site by increasing the number of Website hits (369.2 million in 1999), pages available (147 thousand pages in 1999) and distinct hosts accessing the Website (193 thousand pages in 1999) by 10 percent over 1999 baseline.

One-Stop Reporting

In 2000 The Agency will streamline and improve the information reporting process between state partners and EPA by increasing the number of state participants in the One Stop Reporting program from 29 to 38.

In 1999 The Agency will streamline and improve the information reporting process between state partners and EPA by increasing the number of participants to the One-Stop Reporting Program (for a total of 29)

Performance Measures	**FY 1999**	**FY 2000**
Number of States participants in the One Stop Reporting Program.	29 States	38 States

Baseline: 29 state participants in 1999.

Community Outreach

In 2000 Ensure that EPA's policies, programs and activities include public meetings, address minority and low income communities issues so that no segment of the population suffers disproportionately from adverse health or environmental effects, and that all people live in clean, healthy and sustainable communities consistent with Executive Order 12898.

In 1999 Provide over 100 grants to assist communities with understanding and addressing Environmental Justice issues.

Performance Measures	**FY 1999**	**FY 2000**
EJ Community Grants	100 Grants	
Increase number of states that have environmental justice programs.		12 states
Number of grants awarded to low income, minority communities for addressing environmental problems.		127 grants
Number of EPA-sponsored public meetings held where disproportionately disadvantaged communities participate.		25 meetings

Baseline: The percentage of enforcement policy and guidance documents that are available through the Internet is based on the number of completed documents in the given year. In 1998 there were 650 facilities in SFIP which have their information available through the SFIP web-site and in 2000 EPA projects a total of 1,300 facilities. These documents provide information to populations suffering disproportionately from adverse health and environmental effects. In 1999 each region will be required to report on the meetings held in disproportionately disadvantaged communities and this information will provide a baseline for future years.

Environmental Justice

In 2000 Identify and manage "hot spots" where national environmental justice issues occur and to advise the Administrator on available solutions.

In 1999 Continue to advise Administrator on Environmental Justice issues.

Performance Measures	**FY 1999**	**FY 2000**
NEJAC Meetings	10 Meetings	
Respond within 60 days to requests made to each Region and AA-ship to address complaints heard during public comment period at NEJAC.		75 percent
Conduct NEJAC meetings and focused Roundtables in local communities where problems have been identified.		18 meetings

Baseline: A means of identifying problem areas is through complaints filed under Title VI of the Civil Rights Act and the review of Environmental Impact Statements (EIS) filed under NEPA in which environmental justice (EJ) is an issue. As EJ issues are identified in the EIS process, EPA and its regional counterparts work with other Federal agencies to identify and resolve these issues that may result from major proposed Federal actions.

Regulatory Development Compliance

In 2000 Ensure EPA rulemakings adhere to all applicable statutory and executive requirements, achieve environmental results with minimum burden on the public, and increase stakeholder involvement including small entity outreach.

In 1999 Improve the consistency of Federal/State and other reporting requirements through technological advances in information generation combined with new approaches in environmental management.

Performance Measures	**FY 1999**	**FY 2000**
Burden Reduction - Increase the use of methods for improving efficiency of Agency information collection.		50 Percent
Access to Rulemaking Information - Increase availability of SBREFA panel reports, and tracking reports on the Homepage.		20 Percent
Enhance small business homepage	100 hours	
Rulemaking Outreach - Increase the number of small communities involved in rulemaking.		30 Percent
Improve Federal/State collaborative efforts	10 Meetings	

Baseline: The baseline for performance will be measured against 1997 levels and will be based on a tracking system for EPA rulemaking activities.

Verification and Validation of Performance Measures

While the planned performance measure for this objective is output-oriented, the availability of refinements to the Index of Watershed Indicators will provide the Agency and the public significant opportunities to better understand the extent of the health of the nation's ecosystems. The recently-revised strategic plan for the Index calls for several refinements that will enhance the value and validity of the system. Planned enhancements include: establishing expanded levels of peer review of Index protocols and data layers; comparing watershed-level information gathered through Unified Watershed Assessments, Clean Water Act 303(d) lists of impaired waters, and the Index; and, after extensive review by stakeholders, adding and refreshing data layers to provide a richer and more comprehensive assessment of watershed condition nationwide. This will enable the establishment of a firm analytical footing for measuring progress in the future.

Internal data link to information regarding Freedom of Information Act (FOIA) requests and controlled correspondence (FOIMATS), and Index of Watershed Indicators. Integrated Data for Enforcement Analysis (IDEA) provides on-line access to compliance and enforcement information for most EPA national systems. The enforcement program's use of the data, for screening, analysis and regional evaluations, provides valuable feedback to help us identify and correct problems. Documents placed on the Internet must have management approval before public release. These document and data sources reside in EPA Headquarters and regional offices, compliance and enforcement databases, states and other government agencies. The measurement of progress made toward our targets can be verified at any point in time. Each of our targets for this goal is based upon a number of facilities, states, etc., which can be tallied at any point in time. This allows for ready tracking of our progress toward our final goals.

The data represented as part of the SFIP integration project went through numerous reviews by EPA, states and industry to capture the most current and complete data before being released to the public. SFIP is focused on five sectors. Therefore, while the data for these specific sectors is strong, it represents a small subset of our overall data.

Additionally, a list is maintained of state participants in the One Stop Reporting Program.

Coordination with Other Agencies

EPA, in cooperation with U.S. Geological Survey (USGS), U.S. Department of Agriculture (USDA), National Oceanic and Atmospheric Administration (NOAA) and with the supporting efforts of the U.S. Census Bureau, U.S. Corps of Engineers, and U.S. Fish and Wildlife Service (USFWS), are working hard to characterize watershed conditions and to document non-point and point source pollution in watersheds across the Nation. Approximately two interagency workshops are held each year to discuss the future of IWI, and progress made on improving the individual indicators and the Index as a whole. EPA and USGS have also formalized a working group to explore and develop additional data based upon the mutual interest of EPA and USGS.

EPA will work with other Agencies to ensure consistency in environmental information offered to the public and will work with the Small Business Administration as appropriate on regulations that affect small businesses.

National Environmental Justice Program: Quarterly meetings are held with agencies named in Executive Order 12898 to review the environmental justice activities underway and to discuss participation in the NEJAC issues raised during NEJAC meetings.

EPA will consult with stakeholders through a data quality/data gaps conference, focus group meetings, the ECOS Data Management Subcommittee, informal discussions with environmental and industry groups, and review by a public advisory committee, the Common Sense Initiative Council.

Statutory Authorities

National Environmental Education Act

FMFIA

GPRA

Clinger-Cohen Act

Computer Security Act

Privacy Act

Electronic Freedom of Information Act.

Clean Air Act (CAA) (42 U.S.C. 7601-7671q)

Clean Water Act (CWA)(33 U.S.C. 1251- 1387)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. 9601-9675)

Emergency Planning and Community Right-to-Know Act (EPCRA) section 313 (42 U.S.C. 110001-11050)

Federal Advisory Committee Act (FACA) (5 U.S.C. App.)

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) (7 U.S.C. 136-136y)

Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)

Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901-6992k)

Safe Drinking Water Act (SDWA) section 1445 (42 U.S.C. 300f-300j-26)

Toxic Substances Control Act (TSCA) section 14 (15 U.S.C. 2601-2692)

North American Agreement on Environmental Cooperation

Freedom of Information Act (FOIA) (5 U.S.C. 552)

Paperwork Reduction Act Amendment of 1995 (44 U.S.C. 3501-3520)

Small Business Regulatory Enforcement Fairness Act (SBREFA)

Unfunded Mandates Reform Act

Congressional Review Act (CRA)

Regulatory Flexibility Act (RFA)

Executive Order 12866

Plain Language Executive Order

Objective # 2: Improve Public's Ability to Reduce Exposure

By 2005, EPA will improve the ability of the public to reduce exposure to specific environmental and human health risks by making current, accurate substance-specific information widely and easily accessible.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Improve Public's Ability to Reduce Exposure	**$49,959.0**	**$42,247.7**	**$41,230.8**	**($1,016.9)**
Environmental Program and Management	$49,959.0	$42,247.7	$41,230.8	($1,016.9)
Total Workyears:	229.9	218.4	224.1	5.7

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Drinking Water Consumer Awareness	$2,303.8	$1,365.8	$1,467.9
Pesticide Registration	$5,460.0	$5,214.2	$4,454.1
Pesticide Reregistration	$5,107.7	$5,461.7	$4,111.4
Toxic Release Inventory / Right-to-Know (RtK)	$19,751.8	$19,799.6	$18,811.5
EMPACT	$5,000.0	$614.3	$2,818.0
Reinventing Environmental Information (REI)	$0.0	$0.0	$4,878.9

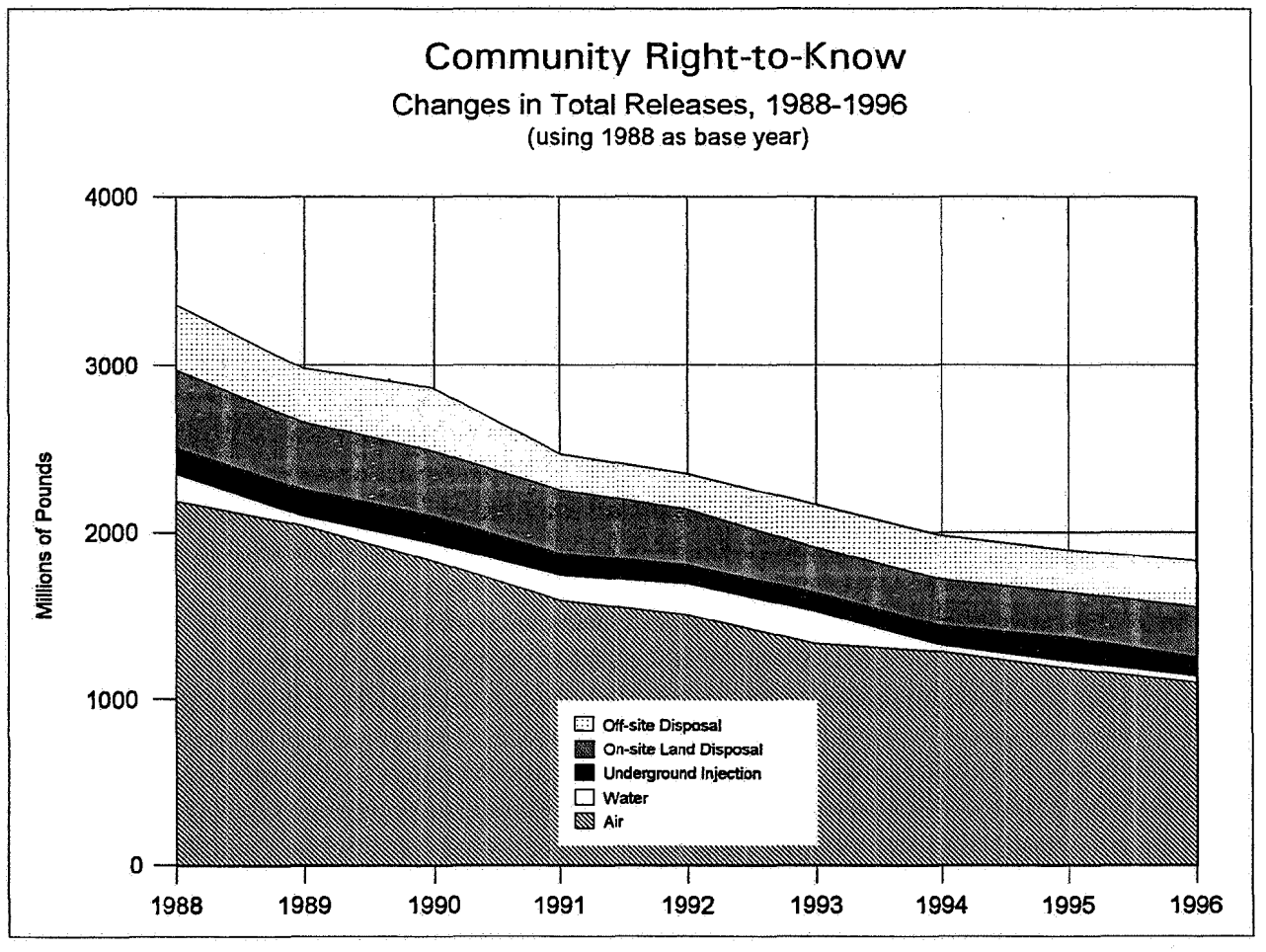
FY 2000 Request

To be successful protecting themselves and their families from environmental hazards, communities need to have rapid and convenient access to environmental information that is local, relevant, and comprehensive. To support the public's right to know, the Agency must identify the customers' information needs and tailor the data collection, presentation and dissemination accordingly. The more comprehensive the information is, the more useful it can be. One priority for the Agency is to continue to identify information gaps that reduce the ability of the public to make sound environmental decisions. Without information on relative levels and types of emissions, for instance, a town might not be able to make the best choice in siting a new playground. Gaps could be associated with specific pesticides and chemicals; drinking water contaminants; specific industrial sectors or specific data elements and reference sources.

EPA is aggressively seeking to integrate all relevant sources of data and information to support comprehensive approaches to environmental protection. These more integrated approaches include community-based environmental and ecosystem protection on a facility and location specific basis, rather than the more media (air, water, etc.) or statute-specific basis the Agency has used in the past. This information management approach coordinates and integrates the separate Agency 'points of view' to provide a comprehensive view of environmental data. The increased availability and accuracy of locational and spatial data, the establishment of the central structure required to support data standards, and a registry of environmental data form the foundation for this new strategy for environmental data management. In time, these new information technology methods will help fundamentally change the way EPA conducts its information management business. To further enhance these changes, the Agency is committed to working in partnership with the Federal Geographic Data Committee to implement a national spacial data infrastructure which will enhance communities' ability to pinpoint the environmental information most relevant to their locale.

An essential part of a comprehensive national approach to environmental protection is the full and active participation of American citizens and their communities in environmental priority setting, risk reduction and remediation, and both short-term and long-term environmental planning. Usually, informed citizens and their communities can better assess the relative severity of environmental risks, especially those focused in specific geographic locations. Local citizens must be fully informed to best weigh the opportunities for prevention or remediation, and the tradeoffs and uncertainties that underlie many environmental decisions. Communities that have access to the information and data that characterize risks from chemical and pesticide use and industry and agricultural production within their boundaries are in a far superior position to make decisions about their day-to-day activities.

EPA believes that providing understandable, accessible, accurate, comprehensive and timely information on chemical emissions and pesticide use to the broadest audience possible will enable citizens and communities to reduce their exposure to environmental and human health risks associated with many of these materials. More broadly, assuring the rights of citizens to be aware of chemical and pesticide risks will lead to an informed public that is better able to make responsible decisions about protecting itself and the environment. By giving the public the necessary information to do so,



the greatest environmental benefit will be achieved at the least cost and with fewer expensive control regulations.

EPA builds partnerships with state, tribal and local governments and non-governmental organizations to ensure that environmental information is widely available. EPA is upgrading the electronic distribution of environmental information by significantly expanding the type and amount of information available on the Internet and by providing easy access to data. For example, communities increasingly can obtain TRI and pollution prevention data via the Internet, to help in evaluating environmental problems.

Reductions in TRI Releases Points to Progress

Under the Emergency Planning and Community Right-To-Know Act (EPCRA), EPA successfully provides the public with valuable chemical release data through the Toxic Release Inventory (TRI). EPCRA requires, among other things, that companies in certain industry sectors report annually to EPA the amounts of more than 600 specified toxic chemicals and chemical categories released into the environment at their facilities. EPA compiles this information and makes it available to the public in an annual report. With this information, communities know what toxic chemicals are present in their neighborhoods, and companies can identify opportunities for source reduction. Over the life of

the TRI program, EPA has noted a significant trend of continuing declines in chemical releases in the reporting industrial sectors.

EPA is taking steps to expand the scope and depth of TRI information. Examples include initiatives to add to the TRI reporting list approximately 40 chemicals deferred from earlier rulemakings, and to assess including additional industrial sectors. A number of chemicals were deferred from inclusion in TRI to allow further analysis. The Agency has completed its review and determined that the chemicals do meet the statute's criteria for toxic chemicals to be included in TRI. The Agency is preparing a rule, scheduled for proposal in 2000, which will include the 40 deferred chemicals in the TRI. Incorporating the most recent scientific developments is important to maintaining an effective TRI program. Also in 2000, EPA will finalize a rule that will expand the TRI list by adding persistent bioaccumulative toxics (PBTs) that are not currently listed. PBTs are of special concern because they do not break down into less harmful components in the environment - they persist. They also bioaccumulate, that is they enter the food chain and build up into higher concentrations in the body, affecting birds and other animals and eventually humans. In addition, EPA is lowering the reporting threshold for certain chemicals, including PBTs, to assure that the public has information on chemicals that may be highly toxic but are manufactured, processed or used in lower volumes than what is currently reported to TRI. These refinements to TRI will assure the public has more comprehensive information. In 2000, EPA will incorporate additional chemical data and health effects information on these highly toxic chemicals into the TRI Public Data Release reports to supplement the current information. The Agency is also working to provide a broader environmental picture for local communities by offering more contextual and background information, such as comparisons across chemicals or geographic areas and industry sectors.

EPA continues to support the base TRI program, including processing reporting forms and providing consolidated data to the public. In 2000 EPA expects to process approximately 110,000 facility reports (Toxic Release Inventory Form R's), and subsequently will issue the TRI Public Data Release for reporting year 1998. EPA presents the TRI data in various forms and media to meet the needs and capabilities of individual and community data users.

A key component of improving public access is the consolidation of information provided to EPA under a variety of statutory and regulatory authorities. EPA's one-stop access and reporting initiative strives to fashion an unambiguous way to identify facilities; consolidate EPA information collections on environmental use and releases, transfers and emissions; and otherwise re-engineer the way in which reporting is accomplished. EPA is working to create a single, clear and easy-to-use point of public access to the Agency's environmental data holdings.

EPA actively seeks to integrate all relevant sources of data and information on a facility-specific basis, coordinating and integrating across Agency data bases where appropriate, to support comprehensive approaches to environmental protection that provide greater protection for communities and ecosystems. EPA is working toward streamlining its operations for data reporting, integration, processing and dissemination by taking advantage of advanced information technologies so that we provide data in a timely manner.

Pesticides

Making information accessible to the public is a primary component of an effective strategy to expand the public's right-to-know. The environment in which the Pesticides program operates is constantly changing. New pesticide active ingredients are developed for registration; new uses proposed; new standards (as with FQPA) are applied to old pesticides; and new information is received about pesticides and their impact in the environment. Because pesticides affect everyone, it is especially important that citizens have accessible, comprehensive, and useful information about their effects and uses. In 2000, the Agency will continue to provide outreach and technical assistance relating to the consumer brochure, published in 1999 and distributed to grocery stores and other outlets, that tailors information about pesticides for the average consumer of fruits and vegetables.

EPA will continue to ensure that training, education materials and programs reflect the most recent developments and findings concerning pesticides. EPA will provide tools, training and assistance to communities to enable them to use the data being made available. A catalogue of tools is under development that will provide information on the characteristics and effects of pesticides. The tools include databases, information hotlines, and descriptions of programs and initiatives that affect local environments. This catalogue will be available as a printed manual and on the Internet with links to other EPA information sites. The catalogue will include descriptions of analytical tools, technical guidelines and other information to help communities in learning about risks of pesticides.

EPA will continue to coordinate with other Federal Agencies on outreach initiatives, FQPA activities, Internet updates, improvements on consumer labels and distribution to grocers of the consumer brochure on the health effects of pesticides. A Website will also be developed to make this material and other pesticide related information available to a wide public audience. EPA will continue to maintain the National Pesticide Telecommunications Network, an 800-telephone number service that provides communities and the public information on pesticides.

Assistance to Communities

EPA pursues a collaborative approach to environmental protection that brings together public and private stakeholders within a community to identify local environmental concerns, set priorities and forge comprehensive solutions. This approach integrates environmental protection with human needs, considers long-term ecosystem health and fosters linkages between economic prosperity and environmental well-being. It encourages communities to create a vision of environmental health and quality of life and to adopt human activities compatible with that vision.

EPA has extensive responsibilities in supporting community-based environmental protection efforts. EPA strives to make available environmental information and tools to communities and citizens to help them make informed choices about their local environment, including where to live and work, how to decide what potential exposures are acceptable, to assess the general environmental health of themselves and their families, to identify pollution prevention opportunities, and to build a consensus on actions to improve the local environment. One aspect of this effort is the successful

implementation of the TRI program, building on the concept of right-to-know, which has greatly expanded the availability of chemical release information to the public. It has encouraged citizens and communities to become active participants in environmental decision-making.

EPA's national Environmental Monitoring for Public Access and Community Tracking (EMPACT) initiative is another key to improving the public's ability to reduce exposure to environmental risks, by focusing on the way information is shared. EMPACT significantly changes EPA's approach in disseminating information. It sets a framework for EPA to assess community usage of TRI information and, at the same time, speeds up the Agency's process for gathering community needs on other chemical-specific information. EPA helps communities identify needed information that is currently not available within the Agency and devise methods to collect the data at the community level. EPA is developing and piloting risk-based screening tools to help communities understand environmental data. These tools will be pilot-tested and then disseminated to other communities across the nation, thereby enhancing the public's ability to address the areas of greatest concern for their communities.

EPA assures that training and education materials and programs keep pace with the information and data that the Agency provides to the public. Communities receive not only data but the tools, training, and assistance to use those data in ways that help citizens make informed environmental decisions. EPA supports and encourages the interdisciplinary environmental education programs of state and local governments, schools and universities and nonprofit organizations through grants, teacher training, internships and national recognition of outstanding efforts and model programs. EPA works to build stronger partnerships with other governmental organizations and with the private sector to improve public understanding of the role of science in environmental decision-making.

EPA also promotes community right-to-know through the development of information for use in community chemical emergency planning programs, to protect communities from accidental releases of chemical substances. EPA supports emergency planning, prevention and response plans, including a program for developing acute exposure guideline levels (AEGLs). AEGLs are short-term chemical exposure guidelines used to determine chemical emergency "vulnerability zones" that are an important feature of chemical emergency response programs. AEGLs are also used to support chemical emergency programs of other Federal agencies, state chemical emergency programs and private chemical safety programs.

An important focus of the 1996 Amendments to the Safe Drinking Water Act is to provide better information to consumers on the quality and safety of their drinking water. Pursuant to that statute, EPA promulgated a rule in 1998 requiring systems to issue annual drinking water consumer confidence reports. These reports provide the American public, for the first time, with regular information on the quality of their drinking water. Consumer confidence reports apply to approximately 56,000 community water systems that serve about 92 percent of the population, i.e., 248 million people. In addition, EPA is initiating activities (e.g., polls, focus groups) to ensure that

the public is satisfied with the information they are receiving about the quality and safety of their tap water.

In 2000, drinking water systems will be providing their customers with an annual consumer confidence report containing such detailed information as:

--the rivers, lakes, aquifers that are the source(s) of their drinking water;
--the quality of these sources of drinking water;
--likely sources of any contaminants;
--whether or not the tap water meets EPA's safety standards;
--health risks in systems that violate the safety standards;
--actions taken to remedy violations; and
--ways for vulnerable populations to avoid cryptosporidium.

These annual consumer confidence reports are to be mailed by large water suppliers, either as a bill insert or a separate mailing. Smaller systems (those serving less than 10,000 people) may be able to post their report in a central location or print it in a local newspaper.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$2,211,000) Reflects an overall investment in the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program, enhancing the way environmental data is collected and shared.

- (-$430,000) Community Based Environmental Protection (CBEP) Reflects delay in some REI Action Plan milestones relating to locational data improvement and the environmental data registry and a reduction in lower priority programs.

- (-$483,900) Reflects cost savings for outreach for TRI, as a result of more efficient online outreach approaches.

- (-$532,000) Reflects cost savings for TRI data collection and management, based on system efficiencies.

- (-$585,700) This change shifts funds to establish a permanent Agency system modernization fund to improve management of system modernization needs to meet the Reinventing Environmental Information (REI) commitment and other mission needs (such as the Enforcement and Compliance Initiative) on a multi-year planned basis.

- (-$702,000) Reflects a shift in funds to better display increased priority of registration and re-registration activities under FQPA.

Annual Performance Goals and Performance Measures

Drinking Water Consumer Confidence Reports

In 2000 All community water systems will issue annual consumer confidence reports according to the rule promulgated in August 1998.

In 1999 EPA will partner with the states in implementation activities that will ensure all public water systems -- large, medium, and especially small -- are informed of both the requirements of the consumer confidence report regulation and implementation tools for complying with this rule.

Performance Measures	FY 1999	FY 2000
Community water systems that will comply with the regulation to publish consumer confidence reports		55,000 CWSs
Number of states with which EPA has an agreement on the most efficient and effective methods (e.g., training, outreach) for implementing this rule in each state	50 States	
Population served by CWSs that will comply with the regulation to publish consumer confidence reports.		249 Million People

Baseline: The final rule for drinking water consumer confidence reports was promulgated in August 1998.

Improve Access to Information on Pesticides

In 2000 Continue to improve the public's ability to reduce exposure to specific environmental and public health risks by improving public access to current and accurate information on pesticide related issues.

In 1999 Continue to improve the public's ability to reduce exposure to specific environmental and public health risks by improving public access to current and accurate information on pesticide related issues.

Performance Measures	FY 1999	FY 2000
Annual consumer brochure on the health effects of pesticides	1 brochure	1 brochure

Baseline: Number of outlets for brochure or other means of public access to information about pesticides, in 1999.

Process and Disseminate TRI Information

In 2000 Process all submitted facility chemical release reports; publish annual summary of TRI data; provide improved information to the public about TRI chemicals; and maximize public access to TRI information.

In 1999 Process 110,000 facility chemical release reports, publish the TRI Data Release Report and provide improved information to the public about TRI chemicals, enhancing community right to know and efficiently processing information from industry.

Performance Measures	FY 1999	FY 2000
TRI Public Data Release	1997 Report Published	
Form R's Processed	110,000 Forms	110,000 Forms
Final 1998 TRIS database complete and report issued		02/29/2000 Published
Data quality: keep data entry error rate below 1% per form		below 1% Error Rate
Maximize public access: 1998 Public Data Release to be available via the internet and CD ROM; 1998 TRIS data to be available via Envirofacts.		Wide Access Data
Increase magnetic media use to 70% for TRI reporting		70% Magnetic media

Baseline: Number of facilities reporting and number of chemicals included in TRI compared with prior year; types of public access methods and % magnetic reporting prior year.

Expand Local Information on Toxic Substances

In 2000 Continue to expand the information available to the public concerning the release of toxic substances into their communities.

In 1999 Continue to inform the public about the health and environmental risks of PBTs and PBT releases in their communities.

Performance Measures	FY 1999	FY 2000
Addition of PBTs to TRI rulemaking	1 Proposed	08/31/2000 Final Rule
Deferred chemicals rule --Develop proposal to add the approximately 40 chemicals to the TRI which were deferred from earlier chemical addition rulemakings.		06/30/2000 Proposal

Baseline: No releases reported to TRI for these chemicals before the rulemaking. More than 600 chemicals and chemical categories currently included in TRI.

Reporting Requirements

In 1999 Increase compliance with right to know reporting requirements by conducting 1,300 inspections and undertaking 200 enforcement actions.

Performance Measures	FY 1999	FY 2000
Section 313 Inspections	600 Inspections	
EPCRA APO Complaints	200 APO Complaint	

Baseline: The number of inspections conducted annually has remained fairly consistent in recent years. This information is the basis for the 2000 projections, with adjustments made for changes in resource levels. In 2000, the enforcement program will target 50% of its inspections to priority areas. These areas will be identified in an internal guidance document which sets forth specific priorities for 2000 and forms the basis for this calculation.

Verification and Validation of Performance Measures

Verification and validation are important aspects of the right-to-know program. Most performance measures are verifiable through quantitative means. For those measures that are output-oriented, actual outputs or products are counted or otherwise objectively verified. For example, the Toxic Release Inventory System (TRIS) tracks progress in processing Form R's which are submitted each year. In other cases, verification and validation procedures are built into the data entry process both at the respondent level and when data are entered into the national TRIS database. Edit procedures internal to the reporting form help confirm whether data entered are internally consistent. If this is not true, an error message is generated. Once data are entered into the national database, they are compared with those previously submitted to learn whether large increases or decreases at the largest TRI facilities have occurred. In cases where there are unusually large changes relative to previous reports submitted, facilities are contacted by staff members to verify the information. These and other similar data quality checks serve to verify and validate data that EPA collects and disseminates.

The TRI component of the right-to-know program generates data that inform citizens about what occurs in their communities. Data collected and disseminated under TRI are used by a wide variety of parties, including other Federal agencies, state and local governments, environmental, labor and community groups, and academics. In order to facilitate appropriate usage of the data, EPA publishes various analyses as part of the annual data release.

Community water systems will be reporting their compliance with the Consumer Confidence Report rule through a newly developed component of the Safe Drinking Water Information System (SDWIS). The Agency maintains formal quality assurance/quality control (QA/QC) procedures for both data entry and data retrieval in SDWIS.

The collection of performance data will involve a variety of methods, for example customer service surveys. Customer service surveys will be conducted annually to measure customer service satisfaction with management and administrative services. The results of the customer service survey will be used to validate performance measures. The approach to validate progress in reaching Agency performance targets will also rely on the Agency's automated performance measure system to capture programmatic and customer service outcomes. The system will require periodic updating of performance data. Performance information will be collected and evaluated against targets on a quarterly basis.

Coordination with Other Agencies

While the TRI program does not coordinate extensively with other federal agencies it has substantial interaction with state agencies. States use TRI data for a number of purposes. For instance, many states use TRI data in geographic information systems (GIS). Each year, the National Conference of State Legislatures (NCSL) conducts an assessment of state TRI programs. This assessment gathers basic information about the state TRI programs including data management and data use, as well as outreach and services for the public and for industry. The survey has found that some states enter some or all of the TRI data into their state database, while others download all EPA's TRI data into their database. Most states conduct outreach programs to explain TRI reporting requirements to industry. In addition, most states provide copies of the TRI reporting forms filed by facilities to the public upon request. States and EPA work together to ensure that data is collected and effectively utilized.

With respect to community-based environmental programs, EPA may coordinate on an ad-hoc basis with state, tribal and local agencies and with non-governmental organizations to design and implement specific projects. The nature and degree of EPA's interaction with other entities varies widely depending on the nature of the project and the location(s) in which it is implemented. EPA is working closely with the Federal geographic Data Committee to develop the infrastructure for national spacial data. EMPACT projects also coordinate with the US Geological Survey to integrate data collection efforts.

As part of the development process for the pesticides consumer brochure, EPA works with stakeholders through the Pesticide Program Dialogue Committee (PPDC), which includes Department of Agriculture and Food and Drug Administration representatives. The PPDC, a committee under the Federal Advisory Committee Act, brings together a broad cross-section of knowledgeable individuals from organizations representing divergent views to discuss pesticide regulatory, policy and implementation issues regarding pesticides. The committee consists of a well balanced cross-section of members from industry/trade associations, pesticide user and commodity groups, consumer and environmental/public interest groups and others.

Statutory Authorities

Emergency Planning and Community Right-to-Know Act (EPCRA)

Pollution Prevention Act (PPA)

Federal Fungicide, Insecticide and Rodenticide Act (FIFRA)

Federal Food, Drug and Cosmetic Act (FFDCA)

Safe Drinking Water Act (SDWA)

Federal Managers Financial Integrity Act (FMFIA)

Government Performance and Results Act (GPRA)

Paperwork Reduction Act (PRA)

Freedom of Information Act (FOIA)

Computer Security Act

Privacy Act

Electronic Freedom of Information Act

Objective # 3: Enhance Ability to Protect Public Health

By 2005, EPA will meet or exceed the Agency's customer service standards in providing sound environmental information to federal, state, local, and tribal partners to enhance their ability to protect human health and the environment.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Enhance Ability to Protect Public Health	**$33,441.6**	**$23,401.0**	**$25,880.8**	**$2,479.8**
Environmental Program and Management	$12,834.5	$11,640.6	$12,751.9	$1,111.3
Science and Technology	$20,221.3	$11,517.3	$12,732.6	$1,215.3
Hazardous Substance Superfund	$385.8	$243.1	$396.3	$153.2
Total Workyears:	155.2	136.2	135.0	(1.2)

Key Programs
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Urban Environmental Quality and Human Health	$0.0	$0.0	$3,395.0
EMPACT	$15,002.0	$6,389.7	$7,239.2
Small, Minority, Women-Owned Business Assistance	$2,149.4	$2,064.4	$2,338.4

FY 2000 Request

In support of this objective, the Office of Congressional and Intergovernmental Relations (OCIR) responds to congressional requests for information, written and oral testimony, briefings, and

briefing materials. It ensures that Congress receives the information needed to make policy and program decisions on environmental and public health issues. In addition to working with Congress, OCIR works closely with the Agency's program offices to keep them informed of current activities that affect their particular subject areas. OCIR develops legislative strategies to support the program offices and coordinates Agency appearances before congressional committees, as well as responses to congressional transcripts and question and answers.

OCIR also serves as the Agency's primary point of contact for national associations and other groups representing state and local governments and for individual states and local governments on environmental issues, programs and initiatives. It ensures that these groups receive the information needed to make decisions on environmental and public health issues, and have an appropriate level EPA person available to participate in meetings or assemblies. This office works closely with the Agency's program offices to keep them informed of current activities at the local level and of any policies the local governments and national associations may be advocating that affect a particular program office's subject area. In 1999, the office began coordinating the Agency's activities related to the Sustainable Development Challenge Grants. These efforts will allow better integration of this program with our state and local partners. OCIR also supports the Local Government Advisory Committee and the Small Town Advisory Subcommittee.

As the lead for liaison with state and local agencies OCIR provides regular, timely communication by preparing the Agency's leadership to effectively address priority issues and develop appropriate responses. It designs and manages meetings and conference calls and works with states and state associations to ensure that state concerns are considered in Agency policies, guidance, and regulations. Additionally, OCIR functions as the lead on state issues relating to the National Environmental Performance Partnerships System.

The Agency's Office of Small and Disadvantaged Business Utilization (OSDBU) provides technical assistance to both Headquarters and Regional program office personnel to ensure that small, minority and women-owned businesses receive a "fair share" of Agency procurement dollars. This "fair share" may be received either directly or indirectly through EPA grants, contracts, cooperative agreements, or interagency agreements. Pursuant to P.L. No. 102-389, the Agency has a national goal of 8% utilization of minority and women-owned businesses in the total value of prime contracts and subcontracts awarded. This activity enhances the ability of small, minority and women-owned businesses to participate in the Agency's objective to protect public health.

Research

A major effort under this objective is the President's Environmental Monitoring for Public Access and Community Tracking Program (EMPACT). EMPACT is a cross-Agency effort established to pilot strategies to provide time relevant, multi-media environmental information to citizens in at least 75 of the Nation's larger metropolitan areas, located in each of the 50 states and Puerto Rico.

Another effort under this objective is the Integrated Risk Information System (IRIS), which supports EPA's community-based environmental research. IRIS is an EPA database of Agency consensus health information on environmental contaminants. The database is used extensively by EPA Program Offices, Regions, the States, and the general public where consistent, reliable toxicity information is needed for credible risk assessments.

Also under this objective, guidance and support are provided to risk assessors through the Agency's Risk Assessment Forum.

EMPACT

In 2000, EPA will continue to provide grants directly to metropolitan areas to support local projects that show innovative and effective ways to keep track of - and deliver in real time - important and useful environmental monitoring information to citizens. These projects may address a community's interest in clean air, clean water, lead contamination, ocean pollution, overall ecosystem quality, or other important environmental aspects where Americans live, work, learn and play. These metropolitan area pilots will emphasize active partnerships between local and state government, research institutions, non-governmental organizations (NGOs), the private sector, and the Federal Government to provide timely environmental information to the public.

Grants will also be provided directly to metropolitan areas to transfer and implement new technologies that have been proven effective and/or used by other EMPACT metropolitan areas to monitor and report on local environmental conditions. These technology transfer grants will help to build capacity in EMPACT communities to sustain time relevant environmental monitoring.

IRIS

The human health effects information in IRIS is widely used for risk assessments and other health evaluations at all levels of government, as well as in the public and private sectors. The currency and credibility of health effects information is critical for credible risk assessments. As more risk-based decision-making takes place at the state and local levels, access to credible health effects information is essential, but difficult for individuals to find or generate. Risk assessors everywhere look to EPA to provide it. To ensure the quality, accuracy, credibility, and applicability of IRIS data, all assessments undergo extensive scientific peer review.

In 2000, the Agency will continue its efforts to: 1) produce, update, and maintain health assessments on IRIS; 2) ensure appropriate external peer review of IRIS summaries and support documents; 3) facilitate Agency consensus and resolve issues in a timely manner; 4) maintain a widely-accessible Internet version of IRIS, available at the local level to support community-based environmental protection; 5) provide active outreach and communication with users; and 6) provide long-term maintenance of the IRIS web site, needed explanatory materials and communication with users, and outreach to potential new users.

Risk Assessment Guidance, Guidelines, and Training

The Agency's Risk Assessment Forum will continue to develop a number of products to assist risk assessors, such as developing risk assessment guidelines, technical panel reports on special risk assessment issues, and peer consultation and peer review workshops addressing controversial risk assessment issues.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$1,321,000, 5.0 workyears) Provide resources for coordination of the Agency's activities related to local environmental quality and human health. This function has been shifted from the Office of Water and the Office of Air and Radiation to the Office of the Administrator.

- (-$422,600 and - 4.0 workyears) The Agency is redirecting resources from the Office of Policy to the Office of Water to support Clean Water Action Plan activities.

Research

NOTE: The FY 1999 Request, submitted to Congress in February 1998, included Operating Expenses and Working Capital Fund for the Office of Research and Development (ORD) in Goal 8 and Objective 5. In the FY 1999 Pending Enacted Operating Plan and the FY 2000 Request, these resources are allocated across Goals and Objectives. The FY 1999 Request columns in this document have been modified from the original FY 1999 Request so that they reflect the allocation of these ORD funds across Goals and Objectives.

S&T

- (+$849,500). This increase to the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program over 1999 appropriated levels will enhance the Agency's ability to meet its commitment to the program by increasing support to EMPACT metropolitan areas. This increased support will enable the program to move more rapidly toward its ultimate goal of providing citizens in at least 75 of the larger U.S. metropolitan areas access to clearly-communicated, time-relevant, and accurate environmental monitoring data.

Annual Performance Goals and Performance Measures

Minority/Disadvantage Outreach

In 2000	Compile data for the Agency's annual 8% minority/disadvantaged business utilization report to Congress.

Performance Measures	FY 1999	FY 2000
Data collected	100% data	100% data

Baseline: 1 annual report in 1999

Research

EMPACT

In 2000 By FY 2000, 75% of EMPACT communities have in place, or have initiated, community-based strategies for time relevant environmental monitoring, information management and communication that will result in sustained community capacity to deliver timely environmental information.

In 1999 By 1999, complete 5-7 monitoring pilot projects in EMPACT cities, implement timely and high quality environmental monitoring technology in 5-7 EMPACT cities.

Performance Measures	FY 1999	FY 2000
Number of community-based strategies in place (i.e., number of pilots)		75% strategy
Award 5-7 grants to EMPACT cities to implement timely and high quality environmental monitoring technologies.	5-7 Grants	

Baseline: Perf. Baseline: Citizens in at least 75 of the USA's larger metropolitan areas are in need of access to clear, time-relevant, useful, and accurate environmental monitoring data in an ongoing and sustainable manner. Development of "formal" baseline information for EPA research is currently underway.

IRIS - Risk Assessment Forum

In 2000 Develop data interpretation tools and risk communication tools to provide time relevant information to the public and environmental communities.

Performance Measures	FY 1999	FY 2000
Develop a web-enabled inventory of environmental information that provides information about and access to data sets, databases, models, and documents produced by or used by the Agency.		1 inventory
The Agency's Risk Assessment Forum will develop a framework to integrate the assessment of cancer and noncancer endpoints.		1 framework
The Risk Assessment Forum will develop an improved framework for the use of Toxicity Equivalency Factors for dioxins, furans, and PCBs in aquatic and wildlife risk assessments.		1 framework
Develop Agency consensus human health assessments (new and updated assessments) of 20 environmental substances of high priority to EPA and make them publicly available on IRIS.		28 assessments

Baseline: Performance Baseline: The need exists throughout both the public and private sectors for better access to credible health effects information to support risk assessments and other health evaluations. Development of "formal" baseline information for EPA research is currently underway.

Verification and Validation of Performance Measures

Research

EPA has several strategies to validate and verify performance measures in the area of environmental science and technology research. Because the major output of research is technical information, primarily in the form of reports, software, protocols, etc., key to these strategies is the performance of both peer reviews and quality reviews to ensure that requirements are met.

Peer reviews provide assurance during the pre-planning, planning, and reporting of environmental science and research activities that the work meets peer expectations. Only those science activities that pass agency peer review are addressed. This applies to program-level, project-level, and research outputs. The quality of the peer review activity is monitored by EPA to ensure that peer reviews are performed consistently, according to Agency policy, and that any identified areas of concern are resolved through discussion or the implementation of corrective action.

The Agency's expanded focus on peer review helps ensure that the performance measures listed here are verified and validated by an external organization. This is accomplished through the use of the Science Advisory Board (SAB) and the Board of Scientific Counselors (BOSC). The BOSC, established under the Federal Advisory Committee Act, provides an added measure of assurance by examining the way the Agency uses peer review, as well as the management of its research and development laboratories.

In 1998, the Agency presented a new Agency-wide quality system in Agency Order 5360.1/chg 1. This system provided policy to ensure that all environmental programs performed by or for the Agency be supported by individual quality systems that comply fully with the American National Standard, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs* (ANSI/ASQC E4-1994).

The order expanded the applicability of quality assurance and quality control to the design, construction, and operation by EPA organizations of environmental technology such as pollution control and abatement systems; treatment, storage, and disposal systems; and remediation systems. This rededication to quality provides the needed management and technical practices to assure that environmental data developed in research and used to support Agency decisions are of adequate quality and usability for their intended purpose.

A quality assurance system is implemented at all levels in the EPA research organization. The Agency-wide quality assurance system is a management system that provides the necessary elements to plan, implement, document, and assess the effectiveness of quality assurance and quality control

activities applied to environmental programs conducted by or for EPA. This quality management system provides for identification of environmental programs for which QA/QC is needed, specification of the quality of the data required from environmental programs, and provision of sufficient resources to assure that an adequate level of QA/QC is performed.

Agency measurements are based on the application of standard EPA and ASTM methodology as well as performance-based measurement systems. Non-standard methods are validated at the project level. Internal and external management system assessments report the efficacy of the management system for quality of the data and the final research results. The quality assurance annual report and work plan submitted by each organizational unit provides an accountable mechanism for quality activities. Continuous improvement in the quality system is accomplished through discussion and review of assessment results.

Coordination with Other Agencies

EPA is working closely with several Federal Agencies in the implementation of the EMPACT program. Collaboration with these Federal agencies is critical to achieving EMPACT's goal of building capacity in EMPACT metropolitan areas to sustain collection, delivery and accessibility of time relevant environmental monitoring data that is useful to day-to-day decision-making. EPA's Federal partners in the EMPACT Program, US Geological Survey (USGS), and National Oceanographic and Atmospheric Administration (NOAA), as well as the Department of Energy (DOE) have significant expertise in the collection, and management of real-time environmental monitoring data. EPA is working closely with these agencies to leverage their experience and expertise in providing accurate, real-time environmental information to the general public.

To help EPA meet EMPACT's goal of facilitating the translation and delivery of environmental monitoring data into useful information that EMPACT communities can use to make day decisions, EPA is also collaborating with Housing and Urban Development (HUD). EPA and HUD are working in partnership on several pilot projects that focus on joint agency use of tools for communication of environmental information in urban areas.

EPA is also collaborating with the Federal Geographic Data Committee (FGDC) to develop common information standards and an information management policy for the EMPACT program that will ensure data consistency among all EMPACT data providers.

Finally, EPA is working closely with the National Partnership for Reinventing Government (NPR) on the development of EMPACT's national survey to identify local environmental priorities in EMPACT metropolitan areas across the country, and to facilitate collaboration with other Federal Programs and initiatives relevant to the goals and objectives of the EMPACT Program. This partnership will help EMPACT to achieve its goal of exceeding customer expectations, and to eliminate duplication, cut through red tape, and better coordinate Federal funding.

In developing health assessments for the IRIS data base, EPA interacts frequently with other Federal agencies involved in health assessments and research. In the initial drafting, documents such as "Toxicological Profiles" produced by HHS/ATSDR are routinely consulted for information. Assessments and research findings from the Food and Drug Administration, National Toxicology Program, National Institute of Environmental Health Sciences, and the National Library of Medicine are other examples of sources consulted and utilized. Federal agencies are also consulted for peer review of draft IRIS assessments. Finally, the IRIS web site has electronic links to other agencies' web sites for the education and convenience of the IRIS user.

Statutory Authorities:

Federal Advisory Committee Act

Comprehensive Environmental Response, Compensation, and Liability Act

Research

Clean Air Act (CAA) and amendments

Clean Water Act (CWA) and amendments

Environmental Research, Development, and Demonstration Act (ERDDA) of 1981

Toxic Substance Control Act (TSCA)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Food Quality Protection Act (FQPA)

Safe Drinking Water Act (SDWA) and amendments

Federal Food, Drug and Cosmetic Act (FFDCA)

CPRKA of 1986

CERCLA

SARA

Goal 8: Sound Science

Goal 10: Effective Management

Goal 10: Effective Management X-1
Executive Leadership X-7
Management Services, Administrative, and Stewardship X-11
Building Operations, Utilities and New Construction X-23
Provide Audit and Investigative Products and Services X-29

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Effective Management

Strategic Goal: EPA will establish a management infrastructure that will set and implement the highest quality standards for effective internal management and fiscal responsibility.

Resource Summary
(Dollars in Thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Effective Management	**$659,860.5**	**$645,174.0**	**$715,653.6**	**$70,479.6**
Executive Leadership	$30,895.9	$31,112.6	$32,155.4	$1,042.8
Management Services, Administrative, and Stewardship	$234,293.9	$220,806.1	$245,211.1	$24,405.0
Building Operations, Utilities and New Construction	$354,753.9	$353,366.1	$397,485.1	$44,119.0
Provide Audit and Investigative Products and Services	$39,916.8	$39,889.2	$40,802.0	$912.8
Total Workyears:	2,974.7	2,991.2	3,003.3	12.1

Background and Context

Efforts under this goal support the full range of Agency activities for a healthy and sustainable environment including: effective vision and leadership; sound management practices; results-based planning and budgeting; fiscal accountability; and quality customer service. Rational policy guidance and careful stewardship of our resources form the foundation for everything EPA does.

The effectiveness of EPA's management will determine, in large measure, how successful we are in telling the story on our annual progress toward the goals identified in the Agency's annual plan and the long-term goals in the strategic plan. Agency management systems and processes will be supported by independent evaluations that promote efficient and effective programs in order to obtain the greatest return on taxpayer investment.

Means and Strategy

The Agency will provide vision and leadership as well as executive direction and policy oversight for all EPA programs. In keeping with its commitment to protect children's health, the Agency will target resources towards its many diverse children's activities. In 2000, the Agency will evaluate health outcomes related to environmental health effects for asthma and lead addressed in 11 Pilot Child Health Champion Communities. The Agency will provide policy direction and guidance on equal employment opportunity and civil rights. The Agency's Administrative Law Judges and its Environmental Appeals Board Judges will issue decisions on administrative complaints and environmental adjudications, respectively, in a timely manner.

The Agency will provide the management services, administrative support and operations to enable the Agency to achieve its environmental mission while meeting its fiduciary and workforce responsibilities. EPA will manage an integrated planning, budgeting, analysis, financial management and accountability process to ensure effective stewardship of resources which meets statutory requirements of the Government Performance and Results Act (GPRA), Chief Financial Officers (CFO) Act, and related legislation. In 1999, the Agency will implement an accountability system that captures all key performance measures, and develop a cost accounting system to enable Agency managers and stakeholders to know the full cost of Agency programs and the resources associated with achievement of environmental results. The strategy for ensuring sound management of administrative services will be accomplished by managing information systems effectively, ensuring a high level of integrity and accountability in the management of grants and contracts, and investing in our human resources to ensure that the Agency's workforce is of the highest caliber and is fully prepared to deliver national leadership and expertise in environmental protection.

The Agency will provide a quality work environment which places high value on employee safety and security and the design and establishment of state-of-the-art laboratories. These facilities provide the tools essential for researching innovative solutions to current and future environmental problems and enhancing our understanding of environmental risks. Plans for building operations and new construction support existing infrastructure requirements that ensure healthy, safe and secure work environments that reflect the pollution prevention values of EPA and help fulfill the scientific and functional requirements of our programs. EPA has adopted an aggressive strategy to utilize energy savings performance contracts to reduce energy consumption significantly over the next five years. In 2000, EPA makes major strides towards completing the consolidated new Headquarters, as well as the consolidated research lab at Research Triangle Park in North Carolina.

The Agency will provide audit and investigative products and services, all of which can facilitate the accomplishment of the Agency's mission. The Agency will increase performance audit work with a focus on environmental results, and assist the Agency in implementing performance evaluation to promote full compliance with GPRA. In the contracts area, Agency efforts focus on selecting the appropriate contract vehicle to deliver the best value for Agency's mission and the taxpayer, including reducing the use of cost-reimbursable contracts. All contracts will be evaluated for possible award or conversion to performance based contracts. In addition, the Agency will put

increased emphasis on contract oversight, including speeding up the contract processes through fast-track system enhancements and automation efforts.

A major concern of Congress has been the federal response to the Year 2000 date conversion issue. With respect to this issue, it is anticipated that all Agency mission-critical systems will be Year 2000 compliant by March 1999. In 2000, the Agency will continue operational testing to ensure that all mission-critical systems continue to function correctly to support core functions without interruption across the Year 2000 date change.

Strategic Objectives and FY 2000 Annual Performance Goals

Objective 01: Executive Leadership

By: 2000 Evaluate health outcomes related to environmental health effects for asthma and lead addressed in 11 Pilot Child Health Champion Communities.

Objective 02: Management Services, Administrative, and Stewardship

By: 2000 100% of EPA's GPRA implementation components (planning, budgeting, financial management, accountability, and program analysis) are completed on time and meet customer needs.

By: 2000 EPA will improve the capability of its workforce by: formalizing a leadership development approach; rolling out a training curriculum to enhance necessary cross-functional skills; clearly identifying and defining support staff career paths; and continuing to hire talented and diverse individuals.

By: 2000 All 58 mission-critical systems will continue to support core Agency functions without interruption across Year 2000 date change.

Objective 03: Building Operations, Utilities and New Construction

By: 2000 EPA will ensure that all new and ongoing construction projects are progressing and completed as scheduled.

Objective 04: Provide Audit and Investigative Products and Services

By: 2000 The OIG will provide objective, timely, and independent auditing, consulting, and investigative services.

Highlights

Agency management provides vision and leadership, and conducts policy oversight for all Agency programs. The effectiveness of EPA's management will determine, in large measure, how successful we will be in pursuit of the other goals identified in the Agency's annual plan. Sound management principles, practices, results-based planning and budgeting, fiscal accountability, quality customer service, rational policy guidance and careful stewardship of our resources are the foundation for everything EPA does to advance the protection of human health and the environment.

In keeping with our commitment to protect children's health, the Agency will direct resources toward the programs that will protect the children from a range of environmental hazards. In 2000, the Agency will focus on reducing asthma through reduction and avoidance of key asthma triggers, including environmental tobacco smoke, prevalent indoor allergens and ambient air pollution. The Agency will employ sound science methods and proper data management to assess risks to children. This is achieved by measuring exposures to multiple chemicals in a national sample of infants and children and by developing data on the physiological and biological characteristics of the young that affect doses to target organs for use in Agency risk assessments. EPA will ensure that its standards address the heightened risks faced by children and that all covered regulations being revised or developed in EPA address children's environmental health issues.

The Agency will provide sound management of administrative services throughout the Agency. In 2000, the Agency will take a systematic and rigorous approach toward modernizing its information systems. A systems modernization fund will be established to provide resources to develop new and upgrade existing information systems throughout the Agency. Initial funding of the modernization pool has been provided by Agency offices. Strict criteria will be used in the distribution of resources. Modernization projects will be funded based on competitive review, be required to provide matching funds, and will follow a planned and managed schedule.

The Agency's building operations and new construction budget ensures a healthy, safe and secure work environment for its employees, and integrates pollution prevention and state-of-the-art technology into its daily activities. New construction and renovation activities will continue at the consolidated complex at Research Triangle Park (RTP), National Enforcement Investigations Center (NEIC) and the New Headquarters project. This request funds the final construction phase of the RTP project as well as transition costs for RTP and HQs. EPA will also address critical repairs in EPA facilities related to employee health and safety. These facilities provide the tools essential for researching innovative solutions to current and future environmental problems and enhancing our understanding of environmental risks.

The Agency will continue to manage its integrated planning, budgeting, analysis and accountability process. In 2000, efforts will continue to link annual plans to the long-term goals and objectives of the Agency in order to deliver the best environmental results possible given the resources appropriated by Congress. The Agency will provide more accurate financial reporting

through cost accounting for improved environmental decision making. The Agency will also continue to increase consultation with the EPA Science Advisory Board and external parties.

The Agency will strengthen pre-award and post-award management of assistance agreements. For example, by July 2000, EPA will eliminate the entire close-out backlog for non-construction grants that ended before September 30, 1997. In the contracts area, Agency efforts will focus on speeding up contract processes through fast-track system enhancement and automation efforts. In addition, in FY 2000 the Agency will improve efficiencies in the contract process, while saving taxpayers dollars, by encouraging the use of performance-based contracts.

In 2000, the Agency will implement its workforce development strategy. The purpose of this initiative is to attract, recruit, develop, and deploy EPA's employees to address the critical environmental issues of the 21st century. This initiative will implement a support staff development pilot to improve the professionalism and performance of our clerical workforce; will identify and develop career tracks for employees skills and tools requirements needed to fully develop in their chosen occupation; and will develop leadership skills in people throughout the organization while improving the managerial competencies of our line managers. A significant component of the initiative is the EPA intern program which is designed to hire diverse, high performing individuals who will become part of the Agency future leadership.

The Agency will continue to bring cases to settlement. The Environmental Appeals Board will issue final Agency decisions in environmental adjudications on appeal to the Board. These decisions are the end point in the Agency's administrative enforcement and permitting programs. The Administrative Law Judges (ALJs) who provide hearings to those accused of environmental violations are increasingly using alternative dispute resolution techniques in bringing cases to settlement and thereby, avoiding more costly litigation.

EPA will provide audit and investigative products and services, all of which can facilitate the accomplishment of its mission. Reviews will be performed on Agency contracts. EPA will also start reviews of Agency compliance with the Government Performance and Results Act through selective verification and validation of the process. The Agency will continue investigations of alleged fraud, waste, abuse, or other illegal activities to detect and deter fraud, abuse, and other improprieties, and help promote cost-effective programs and the integrity of contractors and employees.

External Factors

In 2000, the Office of Children's Health Protection will evaluate health outcomes related to environmental health effects for asthma and lead in 11 Pilot Child Health Champion Communities, and publish the results in a report. The success of this key Agency goal is dependent upon the 11 communities developing acceptable action plans to implement community-based programs.

OCFO would be affected by new legislation that would impose major new requirements necessitating a shift in existing priorities, absent any commensurate increase in resources, in areas such as strategic planning, performance measurement, and/or resource and financial management.

OCFO and OARM would be impacted by new administrative requirements in areas such as accounting standards and reporting from central offices such as OMB or Department of Treasury or other central offices that would impose new requirements for Agency financial and other systems.

OCFO would be impacted by limited availability of baseline environmental data required to measure results and make decisions relating resources to results.

The ability of the Office of Investigations, Office of Inspector General, to accomplish its annual performance goal is dependent, in part, on external factors. Indictments, convictions, fines, restitutions, civil recoveries, suspensions, and debarments are affected by the actions of others (e.g., the Department of Justice). In addition, the prosecutive criteria established within various jurisdictions (e.g., dollar thresholds) can affect the number of cases.

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Effective Management

Objective # 1: Executive Leadership

The Office of the Administrator and Deputy Administrator will provide vision and leadership (within the Agency, nationally, and internationally) as well as executive direction and policy oversight for all Agency programs.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Executive Leadership	**$30,895.9**	**$31,112.6**	**$32,155.4**	**$1,042.8**
Environmental Program & Management	$30,806.5	$31,023.2	$32,066.0	$1,042.8
Hazardous Substance Superfund	$89.4	$89.4	$89.4	$0.0
Total Workyears:	265.0	276.5	274.0	(2.5)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
EMPACT	$1,000.0	$81.3	$563.6
Civil Rights/Title VI Compliance	$1,311.9	$1,637.1	$1,331.7
Immediate Office of the Administrator	$3,691.3	$2,791.3	$3,729.8
Administrative Law	$2,124.3	$2,324.3	$2,193.4
Childrens Health, Program Development and Coordination	$5,716.2	$6,157.5	$5,744.8

FY 2000 Request

To meet the challenges of the 21st century, Americans are calling for a new generation of environmental protection -- one that is based on common sense and partnership. They are challenging their leaders to adopt tough but achievable goals for the environment and to offer people and institutions the flexibility to find cost-effective ways to achieve those goals. The Immediate Office of the Administrator and its Regional counterparts will provide the vision and leadership needed to enable EPA to meet its commitments to protect public health and the environment in the 21st century.

In 2000, the Agency will continue to honor its obligations to protect children from environmental hazards by targeting resources towards the Agency's many diverse children's activities. While addressing children's environmental health issues in all areas, the Agency will target its emphasis on asthma and science focused on children. Major activities related to asthma in children will reduce the frequency and severity of asthma attacks by focusing on prevention and management of asthma among at-risk children through reduction and avoidance of key asthma triggers, including environmental tobacco smoke, prevalent indoor allergens (e.g., cockroaches, dust mites, molds), and ambient air pollution (e.g., particles and ozone). Science focused on children will provide for development of data and methods for assessing risks to children in vulnerable ranges by: 1) measuring exposures to multiple chemicals in a national sample of infants and children; 2) developing data on the physiological and biological characteristics of the young that affect doses to target organs for use in Agency risk assessments; and 3) developing data on childhood behavior and exposures to toxic agents that specifically affect children, for use in Agency risk assessments. As a national policy, EPA will ensure that its standards address the heightened risks faced by children. All covered regulations being revised or developed in EPA will address children's environmental health issues.

Policy direction and guidance will be provided within the Agency on equal employment opportunity, civil rights and diversity issues. EPA will process discrimination complaints and develop, administer and monitor the implementation of affirmative employment programs. Furthermore, EPA will manage special emphasis programs designed to improve the representation, utilization, and retention of minorities and women in the Agency's workforce. Finally, administration of the external compliance program, including Title VI of the Civil Rights Act of 1964, will be conducted since it requires nondiscrimination in programs and activities receiving financial assistance from EPA.

The Environmental Appeals Board (EAB) will issue final Agency decisions in environmental adjudications on appeal to the Board. These decisions are the end point in the Agency's administrative enforcement and permitting programs. The right of affected persons to appeal these decisions within the Agency is conferred by various statutes, regulations and constitutional due process rights.

The Administrative Law Judges (ALJs) will preside over and issue decisions in cases initiated by administrative complaints filed under EPA's enforcement program. The ALJs provide hearings

to those accused of environmental violations under various environmental statutes. In addition, the ALJs have increased use, in recent years, of alternative dispute resolution techniques in bringing cases to settlement, thereby, avoiding more costly litigation.

FY 2000 Change from FY 1999 Enacted

EPM

- (+$74,700) Regional Travel - Reflects an investment in high-priority Regional travel needs to implement environmental programs and provide technical assistance to our state partners.

- (+$482,300, +1.5 FTE) EMPACT - Reflects restoration of reductions taken in 1999 in the Environmental Monitoring for Public Access and Community Tracking (EMPACT) program. The Agency will continue its commitment to the program by awarding new grants for metropolitan areas and maintaining the Agency's efforts to develop time-relevant communication methods.

- (+$700,000) - Reflects increased workforce costs in the Office of the Administrator and in Regional Management.

- (-$62,300) IRM Modernization - Reflects a shift to establish a permanent Agency system modernization fund to improve management of system modernization needs to meet the Reinventing Environmental Information (REI) commitment and other mission needs (such as the Enforcement and Compliance Initiative) on a multi-year planned basis.

Annual Performance Goals and Performance Measures

Children's Health Effects of Asthma and Lead

In 2000	Evaluate health outcomes related to environmental health effects for asthma and lead addressed in 11 Pilot Child Health Champion Communities.
In 1999	By the end of 1999, evaluate 5 EPA standards to ensure they are protective of children's health.

Performance Measures	**FY 1999**	**FY 2000**
Re-evaluate standards to ensure they consider children's special health needs	<5 standards	
Issue report on health outcomes		1 report

Baseline: Baseline will be established in 2000.

Verification and Validation of Performance Measures

The Office of Children's Health Protection will evaluate health outcomes related to environmental health effects for asthma and lead in 11 Pilot Child Health Champion Communities, and the results will be published in a report.

Coordination with Other Agencies

The Administrator co-chairs, with the Secretary of the Department of Health and Human Services, the Interagency Task Force on the Protection of Children from Environmental Health risks. About 15 Federal cabinet departments, agencies and White House councils are members of the Task Force. EPA performs the staff work for the Task Force. There are three subcommittees and four priority area work groups. EPA is represented on all of these groups. Therefore, there is substantial coordination on goals, priorities and actions taken by all the agencies.

Statutory Authorities:

Administrative Procedure Act

Civil Rights Act of 1964, Title VI

Civil Rights Act of 1964, Title VII

Comprehensive Environmental Response, Compensation, and Liability Act

Environmental Protection Agency

FY 2000 Annual Performance Plan and Congressional Justification

Effective Management

Objective # 2: Management Services, Administrative, and Stewardship

OARM and OCFO will provide the management services, administrative support and operations to enable the Agency to achieve its environmental mission and to meet its fiduciary and workforce responsibilities.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Management Services, Administrative, and Stewardship	**$234,293.9**	**$220,806.1**	**$245,211.1**	**$24,405.0**
Environmental Program & Management	$173,112.3	$162,828.9	$182,039.6	$19,210.7
Science & Technology	$226.0	$326.0	$1,866.6	$1,540.6
Leaking Underground Storage Tanks	$1,047.6	$1,047.7	$1,021.6	($26.1)
Oil Spill Response	$3.3	$3.3	$3.3	$0.0
Inspector General	$72.1	$72.1	$0.0	($72.1)
Hazardous Substance Superfund	$59,832.6	$56,528.1	$60,280.0	$3,751.9
Total Workyears:	2,305.1	2,310.1	2,345.1	35.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Reinventing Environmental Information (REI)	$2,500.0	$2,507.1	$11,820.6
Environmental Finance Center Grants (EFC)	$940.0	$1,065.0	$940.0
Human Resources Management	$22,296.6	$21,932.0	$24,139.3
Contracts Management	$27,673.6	$24,986.0	$27,503.9
Grants Management	$9,679.9	$8,568.8	$9,455.7
Information Technology Management	$24,977.6	$21,975.1	$22,282.5
Planning and Resource Management	$73,627.1	$69,120.1	$71,581.6
Regional Management	$41,046.1	$42,535.0	$42,818.4

FY 2000 Request

In 2000, the Office of the Chief Financial Officer (OCFO) will make measurable progress in its responsibilities for developing, managing and supporting a goals-based management system for the Agency. This work involves planning, budgeting, analysis and accountability for environmental results; Agency-wide budget, resources management and financial management functions including program analysis and annual planning; budget formulation, preparation and execution and controls and systems for payroll and disbursements. To accomplish its goals and objectives, OCFO continually coordinates with National Program Managers (NPMs) and stakeholders, consults with the lead Region on program development and implementation and actively seeks customer input on ongoing efforts to achieve greater efficiencies through streamlining, improved performance, customer service and systems development and integration.

The OCFO 2000 Annual Plan and Budget outlines the use of resources to meet OCFO objectives in six major activities including Accountability, Analysis, Annual Budget and Planning, Financial Services, Financial Management and Strategic Planning. Under these activities OCFO provides executive direction for the Agency's budget, financial, and resources management functions; develops and manages a results-based management system for the Agency that involves strategic planning, analysis and accountability; manages the annual planning and budgeting process for the Agency which includes overseeing the development of annual performance plans, budget formulation and execution; provides financial accounting and fiscal services such as payroll, travel and vendor payments to the Agency; operates and maintains the Agency's financial management system; provides support to the Agency's cost recovery efforts; coordinates the planning and budgeting process for the Working Capital Fund. OCFO provides leadership for implementing EPA's environmental

financing program, which helps create sustainable environmental systems through grants to States, localities and small businesses for services such as training, expert advice and education and analysis.

In 2000, resources will be invested in the continued development and management of the Agency's integrated planning, budgeting, analysis and accountability (PBAA) process. OCFO will continue to provide technical support and assistance to the NPMs and Regions to help ensure that EPA resources are focused on reducing the most significant risks to human health and the environment. We will work closely with the NPMs to link annual plans to the long-term goals and objectives of the Agency through the multi-year planning process. Our continued work with state governments through the Environmental Council of the States (ECOS) will be to ensure collaboration and cooperation with respect to short- and long-term goals and objectives. We will develop the Agency's Annual Performance Plan, and involve the Agency's stakeholders and regulatory partners (principally states and Indian tribes) in identifying short- and long-term program priorities that can be considered in EPA's planning efforts. Our work in the areas of Integrity Act reporting and compliance with the Inspector General Act will include preparation of an annual report on material weaknesses and semi-annual reports to Congress on audits, audit resolution activities, and support for audit coordinators throughout EPA.

OCFO will develop and implement the budget and financial management processes and information systems needed to improve EPA's ability to manage for results. Activities in 2000 include the development of the Agency's Annual Plan consistent with the strategic plan, multi-year planning and EPA's annual budget, further automation of the Agency's overall budget process, and continuation of the development of cost accounting capabilities that will enable Agency managers and stakeholders to know the full cost of Agency programs and the resources associated with the achievement of environmental results. OCFO will ensure effective stewardship of EPA resources through provision of core accounting and financial services and through maintenance of the basic infrastructure of financial management policies and systems.

OCFO will develop the Agency's first Annual Performance Report (APR) in 2000. This Report will provide the Congress with performance information pertaining to the key Annual Performance Goals and Annual Performance Measures listed in the 1999 Annual Performance Plan. The APR will be based on information in the Agency-wide accountability system that OCFO established in 1999, plus additional information on program results to be provided by the Agency's "goal teams" of NPMs and Regions. The APR will describe the progress made by the Agency in 1999 achieving our commitments in our Annual Performance Goals.

OCFO plans to conduct analyses in 1999 that will enable better consideration of scientific and economic information in the Agency's PBAA process. In 2000, we plan to refine these analyses through better information and data and through consultation with the EPA Science Advisory Board and external parties. These analyses will be used to inform the planning and budgeting process that will be taking place in 2000 for the 2002 budget period.

In 2000 OCFO will manage the development of the Agency's second Strategic Plan under GPRA. Work on the second Strategic Plan will begin in 1999; however, much of the Congressional consultation process, interactions with stakeholders, and writing of the Strategic Plan will occur in 2000 (the Plan is due to Congress on or before September 30, 2000). Based on Congressional reviews and other comments received on the first Strategic Plan, we expect to make a variety of improvements.

OCFO plans to use 2000 resources to provide timely, accurate data to promote informed decisions. In order for EPA to achieve its environmental mission, an infrastructure must exist to demonstrate and document how EPA's resources result in improvement of public health and the environment over the long term. Through cost accounting, OCFO will provide financial reporting which links resources with environmental results. The 2000 Annual Performance Goals are focused on an integrated planning, budgeting, analysis and accountability process that helps the Agency deliver the most environmental results possible given the resources appropriated by Congress. In doing this, we are helping the Agency fully comply with the letter and spirit of GPRA. To the extent that OCFO ensures that 100% of the Agency's GPRA implementation components are completed on time and are of high quality, and that these components provide Agency and external customers with the information they need, we will be on track to achieve the long-term objective of helping the Agency achieve its environmental mission.

This objective also provides the leadership to ensure sound management of administrative services throughout the Agency, in both headquarters and the regions. The objective includes a broad range of functions, including: management of human resources, information, contracts and grants, facilities operations, health and safety, environmental compliance. In 2000, the focus of this objective will be in four critical areas:

The first priority involves **managing information effectively.** This includes ensuring that EPA's information technology investments are in accordance with the Capital Planning mandates of the Clinger-Cohen Act, the security and integrity of our information management systems is maintained, and that high quality and timely information management services are provided to the Agency.

In 2000, the Agency will be taking a systematic and rigorous approach to modernizing its information systems. EPA will establish a systems modernization fund to provide resources to develop new and upgrade existing information systems throughout the Agency. These projects will pass a competitive review and must be completed within three years under a planned and managed process that includes Clinger-Cohen Act investment review and additional oversight by EPA's management.

The primary purposes of the Y2K program in FY 2000 will be to manage the transition into the new millennium and monitor the information technology assets to detect and fix any unanticipated problems. During FY 1999 detailed business continuity and contingency plans will be developed to support the transition. It will be the responsibility of the Y2K program to manage these plans and

ensure successful implementation if and when initiation triggers are reached. The Y2K program will manage implementation of a "Day 1 Strategy" which will detail exactly how our information technology assets will transition in an orderly and controlled manner so as to minimize the risk of failure. Throughout FY 2000, monitoring and testing will be necessary to ensure any new problems that were previously undetected are promptly identified and resolved.

The second priority is to **ensure a high level of integrity and accountability in the management of grants and contracts**. The Agency will continue to strive towards better pre-award and post-award management of assistance agreements. By July 2000, EPA will eliminate the entire close-out backlog for non-construction grants that ended before September 30, 1997. The Agency will also establish procedures so that future backlogs are avoided. In addition, in 2000, EPA will increase the number of Grants Management Offices awarding grants through the Integrated Grants Management System (IGMS) from five to eleven. This is another step forward in EPA's efforts to utilize electronic commerce to fully automate the assistance process from cradle to grave.

In the contracts area, Agency efforts focus on selecting the appropriate contract vehicle to deliver the best value for Agency's mission and the taxpayer, including reducing the use of cost-reimbursable contracts. All contracts will be evaluated for possible award or conversion to performance based contracts. In addition, the Agency will put increased emphasis on contract oversight, including speeding up the contract processes through fast-track system enhancements and automation efforts.

The third priority reflects the need to **invest in our human resources** to ensure that EPA has the science and technology, and interdisciplinary skills needed for the future and that EPA's workforce reflects the talents and perspectives of a growing multi-cultural society. To support this priority, the Agency will implement its Workforce Development Strategy. The purpose of this effort is to attract, recruit, develop, and deploy EPA's employees to address the most significant environmental goals. A significant component of the initiative is the EPA intern program which is designed to hire diverse, high performing individuals who will become part of the Agency future leadership. The Agency will also develop Agency-wide cross-cutting core competencies to define necessary skills for effective job performance in support, mid-level, and leadership positions; and assess employees against established occupational competencies.

The fourth priority is to **improve the Agency's infrastructure** by providing a healthy, safe and secure work environment, to ensure that the scientific and functional requirements of our programs are fulfilled. The Agency will pursue an aggressive approach to strengthen pollution prevention and energy conservation in its facilities. The personnel funded in this objective provide facilities operations and maintenance services to the Agency's headquarters and regional offices. The services include management of mail, transportation, printing, space utilization, security, postage, and health safety and environmental compliance activities.

EPA will develop and issue guidance for executive agencies to use when purchasing goods and services in response to President Clinton's Executive Order "Greening of the Government

Through Waste Prevention, Recycling, and Federal Acquisition" (EO 13101). This order will increase the federal government's efforts to buy Environmentally Preferable Products (EPP), including biobased products, recycled paper, rerefined oil and many other products. "Environmentally preferable" products and services have a lesser or reduced effect on human health and the environment when compared to other products and services that serve the same purpose.

FY 2000 Change from FY 1999 Enacted

MULTI-APPROP

- (+$2,572.4 EPM, +$1,252.7 SF) This increase reflects partial restoration of reductions taken in 1999. This increase will be used to maintain and operate essential core services and critical programs in order to fulfill OCFO's statutory mandates and customer service.

- (+$10,570,600 EPM, +$1,640,600 S&T, +$1,481,700 SF) - ESC - Systems Modernization Fund - Provides funds to high-priority system modernization projects that pass competitive review and agree to meet best practices and EPA standards. Selected projects must be completed within three years under a planned and managed process that includes Clinger-Cohen Act investment review and additional oversight by EPA's management.

- (+$1,917,700, +40.0 workyears EPM, +$62,900 SF) Workforce Development Strategy - provides investment in our human resources to ensure that EPA has the science and technology and interdisciplinary skills needed for the future and that EPA's workforce reflects the talents and perspectives of a growing multi-cultural society. A significant component of this strategy includes the EPA intern program.

- (+$4,666,800 EPM, +$2,940,300 SF) Automation of Administrative Processes -Several of the Agency's key administrative processes are time consuming and paper intensive and rely on outdated automated systems. These funds will be used to automate key administrative processes (Human Resources and Grants Processes)and upgrade out-dated information systems (Information Contracts Management System). Funds will also be used for related Nationwide training efforts in contracts, human resources, and employee health and safety. These training efforts were delayed in 1999. These training sessions are critical in ensuring that our employees have the necessary tools and skills to perform their jobs.

- (-$6,403,900 EPM, -$607,500 SF) - Information Resources Management - Reflects a shift of resources within Goal 10, Effective Management, to establish a permanent Agency system modernization fund to improve management of system modernization needs to meet the Reinventing Environmental Information ((REI) commitment and other mission needs (such as the Enforcement and Compliance Initiative) on a multi-year planned basis.
(OARM, -$3,002,100 EPM, -$323,100 SF) (OARM Y2K Initiative, -$2,729,400 EPM) (OCFO, -$605,500 EPM, -$275,400 SF) (OP, -$66,900 EPM)

EPM

- (+$1,294,300) Payroll Adjustment - Investment provides for cost of living increases expected in 2000.

- (+$1,604,600) Information Resources Management - Reflects investments to ensure that EPA's information technology investments are in accordance with the Capital Planning mandates of the Clinger-Cohen Act, the security and integrity of our information management systems is maintained, and that high quality and timely information management services are provided to the Agency.

- (+$500,000) Environmentally Preferable Products - investment to implement guidance for agencies to acquire environmentally preferable products and services and to support products that minimize the impacts to human health and the environment.

Annual Performance Goals and Performance Measures

GPRA Implementation

In 2000 100% of EPA's GPRA implementation components (planning, budgeting, financial management, accountability, and program analysis) are completed on time and meet customer needs.

Performance Measures	FY 1999	FY 2000
The Annual Performance Report is delivered to Congress and reflects all EPA performance measures of Congressional interest as identified in the Annual Performance Plan.		By 03/31/2000
The revised Strategic Plan will be produced and distributed.		By 09/30/2000
Agency financial statements receive an unqualified audit opinion and are timely and provide programmatic and financial information useful to policymakers and interested parties.		By 09/30/2000
Develop specifications for replacement of our central financial management systems and ancillary specialized systems, and begin the evaluation process.		By 09/30/2000

Baseline: The base of comparison for assessing progress of the 2000 annual performance goal will be the degree to which agency resources are executed and reported at the goal, objective and subobjective levels. As of 1998, the baseline process feature resource accounting at the program element level with limited output measures available. Planning and resource management have not been organized by strategic goal and objective but largely by media. An additional base of comparison is the date that the 2000 financial statements are submitted and whether they meet the OMB reporting requirements. The 1997 financial statements were submitted on the OMB prescribed due date of March 1, 1998 and were consistent with the OMB reporting requirements. In 1998, EPA had two principal GPRA components to complete; the first Strategic Plan, due to the Congress on the last day of 1997, and the first Annual Performance Plan, due to Congress in February 1998. Both components were delivered on time and

met some, though not all, customer needs based on Congressional comments on both. In 1999, EPA must develop an Annual Plan for the 2000 President's Budget and establish and manage the Agency's performance accountability system so that the first Annual Performance Report can be submitted to Congress in 2000. Completion of these GPRA components will add further to the Agency's performance record or baseline. In 2000, the principal GPRA components that the EPA must develop include the second GPRA Strategic Plan, the first Annual Performance Report, and the Annual Plan for 20001. The performance baseline for MATS has been established over a period of years. The performance expectation for MATS is that the system captures audit status data and information for 100% of the audits in the system, and that the information is completely accurate and comprehensive.

Workforce Improvement

In 2000 EPA will improve the capability of its workforce by: formalizing a leadership development approach; rolling out a training curriculum to enhance necessary cross-functional skills; clearly identifying and defining support staff career paths; and continuing to hire talented and diverse individuals.

In 1999 EPA will improve the quality, effectiveness, and efficiency of EPA's workforce by hiring diverse and talented interns.

Performance Measures	**FY 1999**	**FY 2000**
Number of leadership development pilots conducted.		4 Pilots
Number of interpersonal and interdisciplinary competencies addressed in training curriculum.		12 Competencies
Number of support staff career paths identified with specific competencies.		4 Career Paths
Number of interns hired under the EPA Intern Program.	20 Interns	60 Interns

Baseline: EPA will improve the quality, effectiveness, and efficiency of EPA's workforce by hiring 20 diverse and highly talented interns in 1999 and 40 additional interns in 2000. No occupational competencies developed in 1999.

Utilization of Performance-based Contracts

In 2000 EPA will improve the quality, effectiveness, and efficiency of EPA's acquisition and contract management process by increasing the percentage of contracts utilizing performance-based statement of works from 10% to 11%.

In 1999 EPA will improve the quality, effectiveness and efficiency of EPA's acquisition and contract management process by completing 10% of contracts utilizing performance-based statement of works.

Performance Measures	FY 1999	FY 2000
Percentage of contracts utilizing performance-based statements of work.	10 Percent	11 Percent

Baseline: Baseline is 10% in 1999, 5% in 1998, and 0% in 1997.

Grants Management

In 2000 EPA will improve the quality, effectiveness & efficiency of grants management & award process by eliminating closeout backlog for non-construction grants ended before 9/30/97 & increasing the number of Grants Management Offices awarding grants through the Integrated Grants Management System(5 to 11)

In 1999 Improve the quality, effectiveness and efficiency of grants management and award process by eliminating closeout backlog for non-construction grants that ended before 10/1/90.

Performance Measures	FY 1999	FY 2000
Percentage of the backlog of non-construction grants closed out which ended before 9/30/97.	100 Percent	100 Percent
Number of Grants Management Offices awarding grants through the Integrated Grants Management Systems (IGMS).	5 Offices	11 Offices

Baseline: As of 10/1/98, the Agency had 364 projects to close which ended before 10/01/90.

Y2K Compliance

In 2000 All 58 mission-critical systems will continue to support core Agency functions without interruption across Year 2000 date change.

In 1999 All mission critical systems will continue to support core Agency functions without interruption across Year 2000 date change.

Performance Measures	FY 1999	FY 2000
Percentage of mission-critical systems functioning in accordance with Y2K requirement.	100 Percent	100 Percent

Baseline: In 1999, all 58 mission critical systems are operating properly and are functioning in accordance with Y2K requirements.

Verification and Validation of Performance Measures

Performance measure data will be verified and validated through several systems and processes. Agency financial systems such as Integrated Financial Management System (IFMS), Management and Accounting Reporting System (MARS), EPA Payroll and Personnel System (EPAYS), and Superfund Cost Recovery Packaging and Imaging Online System (SCORPIOS) will be used in preparing a variety of financial material and reports as required by the Chief Financial

Officer (CFO) Act, the Government Management Reform Act (GMRA), the Federal Managers' Financial Integrity Act (FMFIA), and the Government Performance and Results Act (GPRA).

The design and implementation of EPA's Performance and Environmental Results System (PERS) is a major step in fulfilling requirements of the Government Performance and Results Act (GPRA) and will satisfy one of OCFO's annual planning goals in FY 2000. The database will be on-line and fully operational in February, 1999. National Program Managers (NPMs) are responsible for reporting data on annual performance goals and measures into PERS and for ensuring the accuracy of the data. This information will serve as the basis for EPA's 1999 Annual Performance Report, which is due to the Congress in March, 2000.

The Inspector General Act Amendments of 1988 require a timely, accurate and useful database for managers to report follow-up activities associated with the Office of Inspector General (OIG) audits. EPA's Management Audit Tracking System (MATS) allows Agency managers to aggressively follow-up on its OIG audit findings and open recommendations. Twice a year, Agency managers reconcile the audit information with the OIG's system and reports to Congress. Throughout the year, Agency managers update their audit follow-up data based on accomplishments and new information provided by the OIG.

Some performance measures are expressed as the completion of explicit tasks. Verification of these measures will require the objective assessment of completed tasks by program staff and management. Those measures where an objective assessment will be made at the end of the year include: number of cross-cutting core competencies; percentage of SES assessed against established competencies; percentage of contracts utilizing performance based statements of work; percentage of backlog of non-construction grants closed out; number of offices awarding grants through the IGMS; and mission-critical systems functioning in accordance with Y2K.

Coordination with Other Agencies

To achieve its mission, OCFO has undertaken specific coordination efforts with federal and state agencies and departments through four separate vehicles: 1) the National Academy of Public Administration's Consortium on Improving Government Performance; 2) Agency representation as a member of the Natural Resources Performance Measures Forum, which consists of 16 departments or bureaus involved in the management or protection of natural resources; 3) Participation in the Healthy People Consortium which is an alliance of federal, state and territorial public health, mental health, substance abuse and environmental agencies; and 4)active contributions to standing interagency management committees, including the Chief Financial Officers Council, the Federal Financial Managers' Council and the Presidents' Council on Integrity and Efficiency. These groups are focused on improving resources management and accountability throughout the Federal government. OCFO also coordinates appropriately with Congress and other federal agencies, such as Department of Treasury, Office of Management of Budget, General Accounting Office.

Statutory Authorities:

Federal Manager's Financial Integrity Act (1982)

The Chief Financial Officers Act (1990)

The Prompt Payment Act (1982)

The Government Performance and Results Act (1993)

Government Management Reform Act (1994)

Inspector General Act of 1978 and Amendments of 1988

Title 5 United States Code.

Annual Appropriations Act

EPA's Environmental Statues, and the Federal Grant and Cooperative Agreement Act

Federal Acquisition Regulations (FAR), contract law, and EPA's Assistance Regulations (40CFR Parts 30, 31, 35, 40, 45, 46, 47)

Clinger-Cohen Act

Paperwork Reduction Act,

Freedom of Information Act

Computer Security Act

Privacy Act

Electronic Freedom of Information Act

Objective # 3: Building Operations, Utilities and New Construction

OARM will provide the Agency with a quality work environment that considers employee safety and security, building operations, utilities, facilities, new construction, repairs and pollution prevention within Headquarters and nationwide.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Building Operations, Utilities and New Construction	**$354,753.9**	**$353,366.1**	**$397,485.1**	**$44,119.0**
Environmental Program & Management	$238,022.3	$233,245.5	$262,660.4	$29,414.9
Science & Technology	$0.0	$0.0	$7,129.0	$7,129.0
Building and Facilities	$52,948.0	$56,948.0	$62,630.5	$5,682.5
Leaking Underground Storage Tanks	$1,033.6	$1,033.6	$1,033.7	$0.1
Oil Spill Response	$537.8	$537.8	$537.9	$0.1
Inspector General	$2,537.9	$4,021.9	$0.0	($4,021.9)
Hazardous Substance Superfund	$59,674.3	$57,579.3	$63,493.6	$5,914.3
Total Workyears:	3.4	3.4	3.4	0.0

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
New Construction: New Headquaters Project	$15,945.3	$15,945.3	$17,496.3
New Construction :RTP New Building Project	$32,000.0	$36,000.0	$49,040.5
Facility Operations: Repairs and Improvements	$15,428.0	$15,428.0	$20,410.5
Facility Operations: Security	$12,962.2	$12,962.2	$13,162.2
Facility Operations: Agency Rental/ Direct Lease	$170,572.0	$170,571.8	$193,223.6
Facility Operations: Agency Utilities	$10,714.8	$10,015.2	$12,414.8
Regional Program Infrastructure	$67,143.0	$66,532.2	$67,954.2

FY 2000 Request

This objective supports the Agency's goal for Effective Management through the construction of new facilities, and the design and establishment of state-of-the-art laboratories. These facilities provide the tools essential for researching innovative solutions to current and future environmental problems and enhancing our understanding of environmental risks. EPA is well engaged in the work of reducing green house gases and other power generation emissions resulting from energy consumed by operation of these facilities. In 2000, the Agency will continue to optimize operating efficiencies and encourage the use of new and advanced technologies and energy savings performance contracting.

The 2000 budget for the Agency's building operations and new construction supports existing infrastructure requirements that ensure healthy, safe and secure work environments that reflect the pollution prevention values of EPA and help fulfill the scientific and functional requirements of our programs.

Agency Facilities:

New construction and space modification activities include funding for the construction of the consolidated complex at Research Triangle Park (RTP) and for the New Headquarters consolidation project. For RTP, this request funds the final construction phase of the project. The initial transition costs associated with occupying the new RTP complex will also begin in 2000 and include expenditures for decommissioning (process necessary to meet federal requirements to close down the old facility in an environmentally acceptable manner), utilities, and furniture to achieve optimum space utilization. Additional funds for telecommunications and move related costs are also required for the New Headquarters consolidation.

Repairs and Improvements:

The Agency will address critical repairs related to employee health and safety, and will ensure that our facilities are in compliance with environmental statutes. EPA will support program required alterations needed to accomplish the Agency's mission, move-related alterations, as well as emergency repairs and maintenance for our laboratory facilities.

Facilities Operations:

The facilities operations in both headquarters and the regions include rent paid to GSA and others; space utilization; preventive maintenance of existing space; security and property management; printing services; postage and mail management services; transportation services; recycling; and health, safety and environmental compliance activities, including medical monitoring, technical assistance, audits, training, laboratory operations, and telecommunications. The personnel required to manage these services are funded in Goal 10 objective 2 while the extramural costs are funded in this objective.

FY 2000 Change from FY 1999 Enacted

MULTI-APPROP

- (+$22,340,600 EPM, +$6,147,400 SF, -$3,236,600 IG) Agency Rent and Direct Lease,Utilities, Security - While the Agency has taken steps to curb the rate of growth in the rent account, EPA is still faced with an increase in 2000 of $22.7 million. The increase is due to a number of factors: GSA and Direct Lease rate increases, annualization of space acquired in 1999, and new space in 2000 (the largest component being Ariel Rios North for $12.4 million). The Agency's utilities and security costs are increasing by $2.6 million.

- (+$5,211,500 EPM, +$7,129,000 S&T, +$700,000 B&F) Research Triangle Park Facility - The new facility will provide state of the art laboratories for EPA's flagship research center. An additional $700 thousand in the Buildings and Facilities appropriation is required to complete construction (bringing the total construction cost to the $272.7 million cap established by the Congress). An additional $11.3 million will be required from the EPM and S&T appropriations for the transition to the new building. The resources are required for telecommunications and cabling ($7.3 million), furniture design and installation ($3.3 million), and utilities ($700 thousand). An initial $1.0 million is requested for 2000 to begin the environmental due diligence process necessary to meet federal requirements to close down the old facility in an environmentally acceptable manner.

- (-$2,000,000 EPM, -$428,400 SF): Regional Moves - This disinvestment recognizes savings resulting from the completion of moves and certain lease to purchase payments.

EPM

- (+$1,551,000 EPM) New Headquarters project - requires an additional $1.6 million to continue consolidation efforts and to cover expenditures such as telecommunications and systems furniture critically needed to maximize space utilization in the renovated structures.

B&F

- (+$4,982,500 B&F) To replace laboratory space at the National Enforcement Investigations Center (NEIC). GSA is in the process of renovating a building at the Denver Federal Center which will accommodate the NEIC. In addition, the resources will be used to renovate the Las Vegas lab and other EPA laboratory facilities in several locations.

Annual Performance Goals and Performance Measures:

Energy Consumption Reduction

In 2000 EPA will improve the quality, effectiveness of EPA's facilities management process by reducing EPA's total energy consumption in EPA owned buildings by 20% over 1985 baseline (400,000 BTUs per square foot), or down to 320,000 BTUs per square foot.

In 1999 Implement energy savings and pollution prevention at three labs.

Performance Measures	FY 1999	FY 2000
Improve energy efficiency and reduce energy consumption in EPA labs.	3 Labs	
Energy consumption of BTUs per square foot.		320,000 BTUs per Sq/Ft

Baseline: Baseline in 1985 was 400,000 BTUs per square foot.

Facility Health and Safety Audits

In 2000 EPA will improve health and safety of EPA's work environment by conducting health and safety audits at all 45 EPA facilities on a 3 year cycle.

In 1999 Conduct health and safety audits at 13 EPA facilities to ensure facility compliance with standards.

Performance Measures	FY 1999	FY 2000
Facilities audited for health and safety.	13 Facilities	15 Facilities

Baseline: Audits conducted at 13 facilities in 1999.

Facilities Projects

In 2000	EPA will ensure that all new and ongoing construction projects are progressing and completed as scheduled.
In 1999	Complete construction of the new consolidated laboratory in Ft Meade.
In 1999	Complete at least 50% of construction of the consolidated research lab at Research Triangle Park North Carolina.
In 1999	Continue renovation of the new consolidated headquarters complex completing 100% buildout of the Ariel Rios north and Wilson building and 50% of the base buildout of the Interstate Commerce Commission building. Move 38% of EPA personnel from vacated spaces to the new consolidated complex.

Performance Measures	**FY 1999**	**FY 2000**
Percentage of the new RTP building construction completed.	50 Percent	80 Percent
Percentage of the Interstate Commerce Commission (ICC) building construction completed.	50 Percent	80 Percent
Percentage of EPA personnel consolidated into Headquarters complex.	38 Percent	47 Percent
Occupation of new lab at Ft. Meade.		100 Percent
Completion of lab construction at Ft. Meade.	100 Percent	
Complete build out of Ariel Rios Building	100 Percent	

Baseline: In 1999, RTP construction baseline is 50% completion, the Interstate Commerce Commission baseline is 50% completion, and 100% completion of FT. Mead Lab construction. Also, 38% of EPA personnel will be consolidated into the new HQ complex.

Verification and Validation of Performance Measures

Some performance measures are expressed as the completion of explicit tasks. Verification of these measures will require the objective assessment of completed tasks by program staff and management. Those measures where an objective assessment will be made at the end of the year include: percentage of health and safety audits conducted on EPA facilities, percentage of construction completed on each project cited, and percentage of EPA Headquarters personnel relocated. Other performance measures, such as the percentage of energy consumption reduced over a specific baseline are determined by the collection of data throughout the year. For example, utility bills for all EPA owned facilities are analyzed quarterly and compared for previous BTUs used per square foot to determine if the consumption of energy has increased or decreased. Several improvement projects have been initiated that will ultimately reduce energy use at a minimum of four EPA owned laboratories. All of the projects include requirements for utilization of renewable energy

technologies and renewable energy sources in formulating energy efficient solutions for all of the laboratories. Our goal for FY 2000 is to reduce the energy consumption by 80,000 BTUs per square foot of EPA owned space.

Statutory Authorities

Federal Property and Administrations Service Act

Public Buildings Act

VA-HUD-Small Agencies Appropriations Act

Clean Water Act, Clean Air Act, 41 CFR and D.C. Recycling Act of 1998

Objective #4: Provide Audit and Investigative Products and Services

Provide audit and investigative products and services all of which can help EPA accomplish its mission.

Resource Summary
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request	FY 2000 Req. v. FY 1999 Ena.
Provide Audit and Investigative Products and Services	**$39,916.8**	**$39,889.2**	**$40,802.0**	**$912.8**
Environmental Program & Management	$619.7	$592.2	$640.2	$48.0
Inspector General	$28,544.0	$39,297.0	$29,408.7	($9,888.3)
Hazardous Substance Superfund	$10,753.1	$0.0	$10,753.1	$10,753.1
Total Workyears:	401.2	401.2	380.8	(20.4)

Key Programs
(Dollars in thousands)

	FY 1999 Request	FY 1999 Enacted	FY 2000 Request
Contract Audits	$4,950.6	$4,950.6	$5,381.6
Assistance Agreement Audits	$6,830.5	$6,830.5	$6,632.0
Program Audits	$10,264.4	$10,264.4	$10,509.6
Financial Statement Audits	$4,187.5	$4,187.5	$4,296.2
Program Integrity Investigations	$911.5	$911.5	$927.8
Assistance Agreement Investigations	$2,650.4	$2,650.4	$2,728.4
Contract and Procurement Investigations	$2,913.0	$2,913.0	$2,975.8
Employee Integrity Investigations	$953.4	$953.4	$981.6

FY 2000 Request

The Office of Audit conducts audits of EPA's environmental programs to evaluate their economy, efficiency, and effectiveness and to determine if they are operating in accordance with applicable laws and regulations. The focus is primarily on issues based on their relative risk, materiality, and importance to EPA's mission; other audits are conducted in response to Congressional or Agency requests. Audits include:

Program Audits - Determine the extent to which the desired results or benefits envisioned by the Administration and Congress are being achieved, review the economy, efficiency and effectiveness of operations, and determine the extent of compliance with applicable laws and regulations.

Financial Statement Audits - Review the Agency's financial systems and statements to ensure that the Agency's accounting information is accurate, reliable and useful, and complies with applicable laws and regulations. The objective is to assist EPA in making improvements in the financial management processes and controls which will provide better information for decisions promoting the greatest possible environmental results.

Assistance Agreement Audits - Audits of State Revolving Funds, Performance Partnership Grants, Interagency Agreements and Cooperative Agreements, which provide assistance to state, local and tribal governments, universities and nonprofit recipients, account for about half of EPA's budget. Audits are on both the financial and performance aspects, building on the Single Audit Act and focusing on resource-intensive, high-risk programs.

Contract Audits - Audits of Agency indirect cost proposals, pre-award, interim and final contracts. These audits determine the eligibility, allowability, and reasonableness of costs claimed by contractors and assure that EPA pays only for what it requests and receives. EPA has assumed audit cognizance of 10 major contractors and will continue to monitor the contract universe to identify high-risk contractors. In addition, the Defense Contract Audit Agency provides contract audit services, on a reimbursable basis (paid for with OIG funds), at the majority of EPA's contractors.

The Office of Audit will eliminate audits associated with the Construction Grant Program since the risk-based closeout audit strategy will be completed by the end of 1999. The resources used for these audits will be redirected to pay for audits of Agency contracts. Another change implemented is to begin integrating reviews of Agency compliance with the Government Performance and Results Act through selective verification and validation of the process, measures, and data quality associated with various audits and reviews. In addition, the OIG will continue expanding its influence as positive agents of change through additional assistance and consultation services to improve Agency capability and awareness in performance management and accountability. Further, the OIG will improve its own performance and efficiency by developing and implementing a paperless auditing process and by providing additional professional support to the Office of Investigations to detect fraud involving complex financial and procurement related issues.

The Office of Audit's activities are specifically targeted to assisting the Agency meet its Strategic Goals by focusing on achieving environmental results. The Office of Audit will assist and evaluate the Agency's implementation of the Government Performance and Results Act and other related statutes to improve accountability and performance. These activities will directly contribute to the Agency's application of resources in the most economic, efficient and effective ways, and enhance the OIG investigative capability to detect, deter and reduce the risk of financial and integrity loss to EPA's programs and operations. The Office of Audit goal for 2000 is designed to provide products and services which are responsive to the most significant needs of the Agency by addressing both the known and emerging vulnerabilities that would impede progress, and by identifying opportunities for significant changes and improvement in the Agency's delivery of environmental results. The Office of Audit goal is to increase its influence in the achievement of the environmental mission through higher visibility and demonstrated alignment and accountability of its activities to the needs and expectations of Agency management, the Congress and the taxpayers. The Agency can not perform at its highest potential for economy, efficiency, and effectiveness without consistent application of controls and business practices to prevent loss and maximize results from available resources. The OIG goal will help EPA management leverage its available resources and make informed decisions about the application of resources for the greatest environmental return for taxpayer dollars.

The Office of Investigations investigates alleged fraud, waste, abuse, or other illegal activities by EPA employees, contractors, and grantees. A variety of investigations are worked, which result in referrals for criminal prosecution and civil actions, indictments, convictions, fines, restitutions, civil recoveries, suspensions, debarments, and other administrative actions. They also result in

identification of systemic vulnerabilities, improvements in programs and operations, and/or savings or economic benefits. Fraud-awareness briefings are held to increase the awareness of integrity issues throughout the Agency. Investigations include:

Program Integrity Investigations - Investigations of activities that could undermine the integrity of Agency programs concerning safety and public health, and erode public confidence in the Agency. These cases are initiated in response to allegations or may be self-initiated in high-risk areas where there is reasonable suspicion of fraud.

Assistance Agreement Investigations - Investigations of criminal activities related to Agency grants, State Revolving Funds; Interagency Agreements and Cooperative Agreements, which provide assistance to state, local and tribal governments, universities and nonprofit recipients. Collectively these programs account for about half of EPA's budget.

Contract and Procurement Investigations - Investigations involving acquisition management, contracts and procurement practices. Specific focus is on cost mischarging, defective pricing, and collusion on EPA contracts. The decentralized nature of EPA contracting, the complexity of Agency contracting, and the lack of a central vendor and subcontractor database increases the Agency's vulnerability to fraud.

Employee Integrity Investigations - Investigations involving allegations against EPA employees that could threaten the credibility of the Agency. Employee integrity investigations are conducted to maintain the integrity of EPA personnel.

The Office of Investigations' 2000 activities will remain essentially the same as 1999 since no significant changes in strategic direction are planned. Emphasis will continue to be placed on the initiative to uncover criminal activity in the awarding and delivery of EPA assistance agreements and contracts. Fraud and abuse remain a threat to Agency programs and can substantially subvert EPA's mission. Investigations are vital in detecting and deterring fraud, abuse, and other improprieties, and in promoting cost-effective programs and helping ensure the integrity of contractors and employees, thereby reducing risk. The continued focus on these activities will enable OIG to increase the effectiveness in areas which will yield the greatest results for the Agency.

The Program Support Staff (PRSS) plans, controls, and reports on the use of available resources. PRSS also prepares clear, accurate, timely, and independent reports to the Administrator, Congress, and the public which provide a factual summary of the OIG's work and its value to the Agency and taxpayers. The PRSS Management Assessment Review Team ensures that the high quality of OIG work is maintained. PRSS develops applications of computer technology to provide fast, economical information to reduce OIG cost and increase our value. Technology is one of the OIG's primary means to make administrative reforms and apply a greater percentage of staff to direct mission objectives. PRSS helps the Agency prevent and reduce the risk of loss and impropriety through timely and responsive reviews of personnel backgrounds and employment suitability, and by evaluating existing and proposed legislation and regulations affecting EPA. PRSS also provides

services to the public by responding to Freedom of Information Act requests. Specific activities include:

Strategic Planning, Budget Execution, and Reporting - Activities to develop strategic and performance plans, budgets and reports in compliance with the Government Performance and Results Act that clearly link all resources to organizational objectives and results. These activities provide sound fiscal controllership to ensure accountability for effective decision making and the best application of resources to meet mission objectives. These activities also include leadership activities of the Immediate Office of the Inspector General and activities to promote compliance with the reporting requirements of the IG Act and communication with Congress and the Administrator.

Program Management and Fraud Prevention - Activities to provide a fully-staffed, highly-qualified, and culturally-diverse workforce supported by appropriate and efficient administrative services to maximize application of OIG staff time on direct mission work. These activities include quality assurance reviews of OIG management controls; reviews of Agency-related legislation and regulations to identify possible weaknesses, duplications, risks, and opportunities for improvements and savings; responding to Freedom of Information and Privacy Act requests; and background investigations of current and prospective EPA employees and contractors to determine if suitability and security requirements are met to reduce risk and protect the integrity of the EPA programs and operations.

Information Resources Management - Activities for the development, acquisition, implementation, application and management of comprehensive technical information resources. These activities result in better, cheaper, and faster communications and products, thereby improving OIG efficiency and its value to the Agency.

PRSS activities will remain essentially the same as in 1999 except it is anticipated development of the integrated management information system (IGOR) will be complete by the end of 1999, and OIG will charge requesting program offices for updates of background investigations. The resources for these activities will be redirected to train OIG staff in new electronic techniques to access, examine, and analyze electronically generated and maintained information, and to apply basic procedures to develop electronic OIG products. PRSS activities are necessary to ensure that the OIG obtains the greatest return on its investment for the Agency. They contribute substantially to the proper planning and utilization of OIG resources which results in increased organizational performance.

FY 2000 Change from FY 1999 Enacted

IG

- (+$864.7K, -20.4 FTE) Payroll Adjustment - Resources for the Office of Inspector General (OIG) are increased from 1999 to provide funding for expected payroll growth. FTEs are decreased to reflect only those which are funded. The OIG will eliminate audits associated with the Construction Grant Program since the risk-based closeout audit strategy will be completed by the end of 1999. The resources used for these audits will be redirected to help pay for audits of Agency contracts. Also anticipated is the development of the integrated management information system (IGOR) which will be essentially complete by the end of 1999. The OIG will begin charging requesting program offices for updates of personnel background investigations. The resources for these activities will be redirected to help train OIG staff in new electronic techniques to access, examine, and analyze electronically generated and maintained information, and to apply basic procedures to develop electronic OIG products.

Annual Performance Goals and Performance Measures

Auditing and Consulting

In 2000 In FY 2000, the Office of Audit will provide timely, independent auditing & consulting services responsive to the needs of our customers and stakeholders by identifying means and opportunities for increased economy, efficiency, and effectiveness in achieving environment results.

In 1999 In 1999, the Office of Audit will provide timely, independent auditing & consulting services by completing & initiating more audit assignments, reducing the average time, & dedicating more resources to consulting services.

Performance Measures	FY 1999	FY 2000
Monetary value of recommendations, questioned costs, savings, and recoveries.	$118.5 million $	$64.0 million $
IG recommendations made to improve the economy, efficiency, and effectiveness of operations and environmental programs.	57 RECOM/ACTION	63 RECOM/ACTION
Construction Grants Closeout Audits	15 Audits	
Overall customer and stakeholder satisfaction with audit products and services (timeliness, relevancy, usefulness and responsive.		75 Percent

Baseline: The Office of Audit will measure potential monetary value of recommendations, questioned costs, savings and recoveries at a baseline of $64.0 million ; IG recommendations made and actions taken to improve the economy, efficiency, and effectiveness of operations and environmental programs will be

63 recommendations/actions, and the percentage of the overall customer and stakeholder satisfaction with audit products and services (timeliness, relevancy, usefulness, and responsiveness) will be baselined at 75%.

Fraud Detection and Deterrence

In 2000 In FY 2000, the Office of Investigations will increase its effectiveness in detecting & deterring fraud & other improprieties by increasing the number of assistance agreements & contract cases, improving the % of cases referred for action and reducing the average time for case completion.

In 1999 In 1999, the OI will increase its effectiveness in detecting & deterring fraud & other improprieties by increasing the number of assistance agreements & contract cases, improving the % of cases referred for action, reducing average time of case completion, & more fraud awareness briefings.

Performance Measures	**FY 1999**	**FY 2000**
Monetary value of fines, judgements, settlements, restitutions, and savings.	$4.16 million $	$4.24 million $
Judicial, administrative, and other actions taken to enforce law, reduce or avoid risk.	52 Actions	53 Actions
Assistance agreement & contract cases.		68.9 CASES OPENED
Percentage of cases completed or referred within one year of initiation		52 Percent
% case resulting in referrals.		37.1 % OF CASES

Baseline: The Office of Investigations will use $ 4.24 million as their performance baseline for monetary value of fines, judgements, settlements, restitutions, and savings, for judicial, administrative, and other actions taken to enforce law, reduce or avoid risk, 53 judicial and administrative actions will be the performance baseline, 68.9 assistance agreements and contracts opened will be the baseline, percentage of cases completed resulting in referrals will have a baseline of 37.1% and percentage of cases completed or referred within one year initiation will be 52%.

Resources Management

In 2000 In FY 2000, Program Support Staff will support OIG performance by effectively planning, applying & accounting for fiscal, human & technical resources use, and by clearly reporting to Congress the results of OIG work.

In 1999 In 1999, Program Support Staff will support OIG performance by effectively planning, applying & reporting to Congress fiscal, human & technical resources use, and by facilitating the redirection of two OIG-wide FTE to direct mission objectives.

Performance Measures	**FY 1999**	**FY 2000**
Accurate OIG budget requests are submitted to the Agency, OMB and the President by required due dates and resource use is tracked with monthly Status of Funds Reports		15 Reports

Semiannual Reports to Congress which clearly illustrate the results of OIG work are submitted by October 31, 1999 and April 30, 2000.	2 Reports

Baseline: The Program Support Staff will provide three accurate OIG budget requests submitted to the Agency, OMB, and the President by required due dates, and 12 reports providing resource use tracked with monthly Status of Funds. The Program Support Staff will provide two semiannual reports to Congress by October 31, 1999 and April 30, 2000, which clearly illustrate the results of OIG work.

Verification and Validation of Performance Measures:

The major sources of key performance measure data for the Office of Audit (OA) are the Inspector General Operation and Reporting (IGOR) system, customer surveys, and selected follow up reviews. The IGOR system is an integrated tracking system for the OIG and includes a module for OA. The reports generated by IGOR are used by OA management to monitor progress, workload assignments, and the cost, timeliness, and efficiency of audit work products (reports, memorandums, and briefings), and employee time. Each Headquarters and divisional staff member is responsible for data integrity and accuracy. Data accuracy is subject to reviews by OA management, an OIG Management Assessment Review team, and a peer review team from another Federal Office of Inspector General. Customer surveys measure the timeliness, relevancy, usefulness, and responsiveness of our products and services. Follow up reviews validate the relevancy and effectiveness of our work and involvement toward the achievement of environmental outputs and outcomes. OIG is not aware of any limitations of performance data.

The major source of key performance measure data for the Office of Investigations (OI) is also IGOR. The IGOR system will include a module for OI. The reports generated by this system are used by OI management to evaluate productivity by tracking the number of cases opened and closed, personnel time charges, judicial and administrative actions (such as indictments, convictions, suspensions, and debarments, sentencing or personnel actions), and financial information to include fines, recoveries, judgments, settlements, restitutions, and savings. Divisional personnel are responsible for entering data and verifying that it is are accurately reflected in the system. An investigative information specialist in Headquarters monitors data entered by divisional personnel and enters information on case openings and closings, judicial and administrative actions, and financial information. Management accountability reports are prepared and sent to Headquarters desk officers and divisional personnel for review and verification. The accuracy of data in the system is also subject to independent review by an OIG Management Assessment Review team.

The primary sources of key performance measure data within the Program Support Staff are the EPA Integrated Financial Management System (IFMS) and the EPA Budget Automation System (BAS). The IFMS generates the information necessary to prepare annual operating plans and monthly status of funds reports which are used by OIG management to effectively and efficiently use available resources. This system provides detailed information on operating plan projections as well as expenditures and remaining balances by account and budget object class. The BAS contains budget

development information which is used by OIG management to estimate future budget needs and to implement the requirements of the Government Performance and Results Act. Data is entered in IFMS and BAS by both the OIG and Agency personnel who are responsible for verifying that the information is accurately reflected. System security is maintained through the use of passwords. The accuracy of data in the IFMS and BAS are subject to audit by the EPA Office of Inspector General and the General Accounting Office.

Coordination with Other Agencies

The EPA Inspector General is a member of the President's Council on Integrity and Efficiency (PCIE), an organization comprised of Federal Inspectors General (IG). The PCIE seeks to improve the way IGs conduct audits and investigations, and completes projects of government-wide interest.

Statutory Authorities

Inspector General Act of 1978

Special Analysis

Special Analysis

Major Management Issues SA-1
EPA User Fee Program SA-9
Working Capital Fund SA-12
The Customer Service Program SA-13
Costs and Benefits of Economically significant Rules in FY 1999 or 2000 ..... SA-15
Non-Appropriated Funds SA-27
Program and Activity Highlights SA-28
Key Programs by Appropriation SA-29
State and Tribal Assistance Grants SA-45
Object Classification SA-46

MAJOR MANAGEMENT ISSUES

Introduction

EPA's Strategic Plan identifies long-term goals designed to achieve the Agency's mission to protect human health and to safeguard the natural environment – air, water, and land – upon which life depends. Within these goals, EPA has developed shorter term objectives that provide specific measurable outcomes that are achievable over the next few years. The Agency's planning, budgeting, analysis, and accountability process was designed to improve EPA's ability to achieve results and to meet the requirements of GPRA. At the same time, we are aware of the complex management challenges that must be addressed in order to achieve desired program results in a manner consistent with established policies and procedures designed to maintain the integrity of our programs.

EPA's Senior Leadership Council, comprised of executives throughout the Agency, continues to meet with key representatives from the Office of Management and Budget (OMB), the General Accounting Office (GAO), and EPA's Inspector General (OIG) to hear their perspectives on important Agency and program management issues. These discussions help to identify opportunities for management improvement initiatives within the Agency. We are currently focusing on a number of these management issues that if, not addressed, could adversely impact achievement of the Agency's mission. The ten issue areas are summarized below.

Year 2000 Compliance

The Agency has evaluated all mission-critical systems to determine whether they are Year 2000 compliant. We are on track to correct identified problems and expect all mission-critical systems will be compliant by March 30, 1999. The Agency is currently assessing other infrastructure assets including non-mission-critical systems, central and local infrastructure, and buildings and facilities and will correct any identified deficiencies. In addition, we are working with external stakeholders to address problems with the exchange of data related to Y2K. The Agency formed a Year 2000 Council of senior Agency officials to review program progress, receive early warnings of potential problems, and take necessary actions to avoid critical delays. The Agency has greatly expanded its outreach efforts to ensure the continuity of environmental services to the public. During the past year, the President's Council on Year 2000 Conversion has broadened its focus to include an emphasis on preparedness in twenty-nine specific sectors of the Nation's economy. EPA is responsible for coordination and outreach in three of those sections: Water, Waste, and Chemicals.

Environmental Information

Environmental information is essential to effective decision-making for EPA. The challenges of acquiring, maintaining, and sharing accurate and high quality environmental information is a strategic EPA priority. Without timely, accurate, and appropriate data for decision-making, EPA managers cannot accurately assess how well Agency programs are meeting their program mandates.

This information challenge facing us is so critical that if Agency investments to reinvent environmental information are not effective, the Agency's basic capability to implement performance management as required of the Government Performance and Results Act (GPRA) will be seriously hindered.

The EPA Inspector General and GAO have already expressed concerns about the accuracy, timeliness, and consistency of data the Agency collects, manages, and shares. In response to these criticisms, EPA's Chief Information Officer has established three environmental information investment priorities for FY 2000: **Public Access**; **Data Quality**; and **Agency Information**. These priorities reflect the Administrator's commitment to strong leadership on information management – a commitment that encompasses not only reinventing EPA's environmental information, but which also extends to creating a reinvented EPA Information Management Program. Within this broad commitment, the Agency has made many specific information management commitments. Lead offices from across the Agency will report on progress of ongoing and planned activities and commitments in their Mid-Year Assurance Letters and at the Senior Leadership Council Meetings held to discuss management integrity issues throughout 1999.

Public Access

Internet: The Agency has enjoyed considerable success in making environmental and regulatory information available by means of the Internet. The EPA Website handles more than a million "hits" per day and enables citizens to information concerning basic environmental concepts, EPA regulatory activity, environmental research and detailed information about the environmental conditions in their communities. For example, the public is able to simply enter their zip code and receive detailed reports on releases of toxic chemicals, permitted facilities, air and water quality, etc. In FY 2000, the Agency Internet offerings will be enhanced by cataloging Internet materials and delivering information based on individual subjects (indoor air, watershed protection) and their intended audience (students, regulated businesses, or environmental professionals). This new approach to EPA information will include Agency publications, policy, guidance, and regulations, providing a more comprehensive picture of EPA's involvement on a topic.

Center for Information and Environmental Statistics (CEIS): CEIS was created in 1997 as part of EPA's national effort to improve public access to the Agency's information resources. For more than 30 years, EPA and state public health and environmental agencies have been collecting data on sources of pollution, toxic releases to the environment, and ambient environmental conditions. CEIS is improving public access to EPA's information resources so that individuals, communities, businesses, and other organizations can obtain these data, learn about their quality, potential applications and limitations, and then apply them in ways that enables them to protect public health and safeguard the natural environment. By surveying EPA's information users and the public's needs, CEIS focuses on reporting these data and information in ways that can support these individual, community, state, and regional efforts to protect public health and the environment. In FY 2000, the CEIS will begin a process to evaluate the effectiveness of their efforts and improve the usefulness of the data they make available. CEIS plans to create an interface that will be responsive to the needs

of users while working with the specific data collections to define the environmental risks and public health implications the data may communicate.

Reinventing Environmental Regulations: In FY 2000, the Executive Steering Committee for Information Resources Management will provide funding for public access activities including: One-Stop Reporting - working with the states to improve reporting efficiency and data quality and to provide the public with better data; Enhanced Public Access - providing access to the Agency's interpretive guidance through the Internet; and Public Access Tools and Methods - providing better access to EPA information through improvements to Internet data. Each of these investments represents improvements to core components of the Agency's information infrastructure or business processes for collecting, managing, and disseminating environmental data. These improvement are essential to ensure continued high performance of the Agency's Website.

Data Quality

Reinventing Environmental Information (REI) Initiative: REI is the EPA's commitment, in partnership with the states, to implement key information management reforms that are essential to support the Agency's new and evolving approaches to environmental protection. Within the next five years, REI will focus on incorporating data standards and electronic reporting into EPA's national systems, with priority on the Agency's compliance systems. Additionally, the Agency will enhance its information management processes to ensure these efforts are successful. REI will be institutionalized within the new Office of Information. Standards development will be completed in early FY 2000, when the focus of the program will shift to implementation by program systems.

Data Quality Strategic Plan: The Agency is developing a Data Quality Strategic Plan that recommends several items to improve data quality, including: the development of data quality performance standards for each of EPA's major data systems to track and improve data quality over time; an error correction process to ensure that discrepancies in EPA data are routed to the appropriate data managers; and the establishment of customer service performance standards for each major data system to ensure that discrepancies are addressed promptly and appropriately.

Agency Information

New Office: In October 1998, the EPA Administrator announced her intention to establish a single program manager for information management, policy, and information technology stewardship. This office will be responsible for developing and implementing goals, standards and accountability systems to manage and improve the quality of information used both within the Agency and provided to the public. In accomplishing this goal, the office would: assure that the quality of data collected and used by EPA is known and is appropriate for its intended uses; reduce information collection and reporting burden; fill significant data gaps; and provide integrated environmental and public health information and statistics to the public. A senior management team was established to begin working with cross-Agency projects to ensure their success during the transition. In FY 2000

the office will complete its' organization and begin coordinating information policy and procedures across the Agency.

Systems Modernization: In FY 2000, EPA will establish a fund to better meet and manage the urgent need to modernize systems that support the REI commitment and other mission requirements on a multi-year basis. EPA senior management recognized the criticality of: central funding and decision-making for modernizing systems; managing system modernization as a capital investment exercise; prioritization to address funding shortages and uncertainties; and allowing investment decisions to be optimized at Agency level. The system modernization fund is linked to successful REI implementation by providing a stable funding base which will: facilitate better systems development planning; reduce uncertainties that cause delays and cost overruns; and ensure that systems adhere to Agency IRM architecture and data standards. The Agency's senior management has determined that the core components of a successful systems modernization business process are: central funding and decision-making for modernizing systems; managing system modernization as a capital investment; setting clear priorities to address significant performance gaps, effectively allocating limited modernization resources, and responding to the Administration's new information initiatives; and finally, where appropriate, ensuring investment decisions leverage achievement of Agency goals - not simply individual program goals. The system modernization fund is linked to successful REI implementation by providing a stable funding base which will facilitate better systems development planning; reduce uncertainties that cause delays and cost overruns; and ensure that systems adhere to the Agency's IRM architecture and data standards.

Information Systems Security

Audits by the OIG found that security plans for many of the Agency's major applications and general support systems were deficient or non-existent. At risk is the potential unauthorized access, use, modification, or destruction of environmental information in EPA's databases. In fact, a recent OIG audit found unauthorized contractor access to confidential business information. Accordingly, EPA declared Information Systems Security as a material weakness in its 1997 Integrity Act Report to the President and Congress.

The Agency implemented a corrective action strategy to address this issue that involved: 1) developing a model information security program that provides a framework for the managerial role in organizational security planning and oversight; 2) providing detailed guidance with explicit examples and narratives for security plan development; and 3) developing security plans for the Agency's telecommunications network and National Computer Center computer platforms. In addition, EPA's Chief Information Officer (CIO) will issue an annual requirement for certification of information security plans, activities, and accomplishments. The CIO will perform periodic reviews of security plans to ensure the Agency's information resources and environmental data are secure and existing risks and vulnerabilities are addressed. EPA's OIG will review the adequacy of the security controls contained in the plans. We anticipate final corrective actions to be completed by the end of FY 1999.

EPA Oversight of Enforcement Activities

OIG findings in several audits disclosed fundamental weaknesses with state identification and reporting of significant violations of the Clean Air Act (CAA). Without information about significant violators, EPA can neither assess the adequacy of the states' enforcement programs, nor take action when a state does not enforce the Act. Moreover, because violators were not always reported, EPA's information systems were unable to communicate accurate information to the general public. The Agency is evaluating current policies, revising them where necessary, and providing training to implement the revised policies. In addition, the Agency has begun the quality assurance of enforcement data through increased analysis of regional and state performance measures, and will review all CAA title V applications for compliance certifications to assess current compliance status. Other actions are underway to ensure correction of this issue.

Air enforcement is also designated as a major management commitment to ensure it gets proper attention by the Agency's senior managers. The Office of Enforcement and Compliance Assurance will report on progress of ongoing and planned activities in their Mid-Year Assurance Letters and at the Senior Leadership Council Meetings held to discuss management integrity issues in 1999.

National Pollutant Discharge Elimination System Permits (NPDES)

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, animal feeding operation mining, 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 in 2000 are to reduce industrial discharges of toxic pollutants by 4 million pounds per year, non-conventional pollutants by 1,500 million pounds per year, and conventional pollutants by 388 million pounds per year as compared to 1992 dischargers when considerations for growth are considered. Meeting this goal is contingent upon the timely issuance of quality permits.

In 1998, the Office of Inspector General identified the NPDES permit backlog as a candidate for material weakness under FMFIA. The Agency's FY 1998 Integrity Act Report accepted the IG's determination. The backlog in EPA issued permits has tripled over the last 10 years, and the backlog in State issued permits has doubled over the same time period. Facilities operating under expired permits are not required to meet new or updated effluent guidelines, water quality standards, or total maximum daily loads within a watershed framework until the permit is renewed.

To address the environmental consequences of this, the Agency has developed and is implementing a multi-year backlog reduction plan. The plan will focus permit efforts on those facilities considered to be environmentally significant such as facilities discharging into high priority watersheds, discharging at high volumes, discharging pollutants such as toxics, or having other

significant water quality impacts. The Agency is also investigating the use of tools such as general permits for lower risk facilities.

Contract Management

Audits conducted by the Agency's Office of the Inspector General this year indicated that EPA had taken many positive steps to correct contract management deficiencies and as a result has eliminated contracts management as an Agency-level weakness. However, since personal service relationships with contractors still remain a concern, the Agency declared relationships with contractors an Agency-level weakness in the FY 1998 Integrity Process. The Office of Administration and Resource Management prepared a corrective action plan that includes additional training for project officers, and a requirement for Assistant and Regional Administrators to perform a management review for personal services, particularly on high risk contracts with on-site contractors. A report on results will be included in their Mid Year Assurance Letters.

The Agency, under its "Contracts 2000" initiative is continuing to scrutinize contract actions to improve the effectiveness and efficiency of EPA's contracts, looking at lessons learned from the contracting strategies over the past several years. In addition, the Agency is emphasizing the importance of choosing the appropriate contract type, considering where performance based contracts would be more cost effective and efficient. Currently, the Agency is placing particular emphasis on improving Superfund contracts, providing oversight of the Independent Government Cost Estimates to ensure cost effective use of contract dollars. Another contract initiative provides for phasing in new contracting vehicles, while improving the contracting capacity that is currently in place for the Superfund remedial action contracts.

Construction Grants Close-Out

EPA designated construction grants close-out as a material weakness in FY 1996 to provide government-wide attention to the fact that billions of dollars in construction grants awarded in the last 20 years were not closed out. The result leaves millions of dollars in potentially ineligible program costs from being recovered for reuse on other high-priority state clean water projects.

The Agency developed and implemented a strategy to expedite project audits that are on the critical path to project closeout. The process has allowed program officials to close out more projects than before without requesting an audit, and has expedited scheduling and completion of the necessary audits. The Agency continues to work with the Regions and states to develop revised projections consistent with the audit strategy. The Agency is sustaining the effort to: 1) maintain the priority of, and attention to, administrative completions, audits and dispute resolutions, and close-outs; 2) assure that close-out resources are directed to organizational units where inadequacy of resources impedes more rapid completion and close out of projects; and 3) update plans developed in each of the Regions with specific actions to successfully close out the program.

Currently, the Agency has reduced the amount of grants waiting to be closed from the 1990 level of 5,860 projects with a grant amount of $34 billion to the level at the end of FY 1998 of 399 projects totaling $7 billion. We expect to achieve success in closing our the remainder of projects by the end of FY 2002.

Non-Construction Grants Close-Out and Oversight of Assistance Agreements

As a result of 1996 Congressional hearings and Office of Inspector General audits, the Agency identified a material weakness in the areas of grant closeouts and oversight of assistance agreements. To address this issue, EPA has developed a national closeout strategy to eliminate the non-construction grants backlog and prevent it from reoccurring. The strategy includes a policy that will engage EPA Grants Management Offices in a pro-active practice of post-award monitoring and management of assistance agreements. The policy identifies ten baseline monitoring activities applicable to all grants and a small percentage that will require on-site reviews and technical assistance. All Grants Management Offices will fully implement the policy by 2000. In addition, the Agency is developing a policy for post award management of grants and cooperative agreements by Headquarters Program Offices and Regional Program Divisions. This policy will ensure that each program develops and implements an annual monitoring plan.

The Agency has made significant progress in closing out the backlog of open grants. As of December 31, 1998, the Agency has closed 90% of the non-construction grant backlog and plans to eliminate the entire backlog by July 2000.

Resource Conservation and Recovery Information System

In 1995, GAO conducted an audit of national RCRA information systems, specifically the Resource Conservation and Recovery Information System (RCRIS). GAO identified three major problems that needed to be addressed:

1) data entry and access is cumbersome;
2) system complexity hinders the ability of States to use the system; and
3) data quality is not reliable because of lack of clear definitions and a lack of a national quality assurance plan.

In response to the GAO audit, the Agency reported RCRIS as an Agency-level FMFIA weakness in 1997 with a target correction date of 2002. GAO agreed that EPA, under the WIN/INFORMED initiative (a joint initiative between the Agency and the states), is taking the appropriate corrective action to address the identified problems. EPA took steps to streamline RCRIS which GAO indicated met their requirement for short-term streamlining. In addition, the Agency took steps to reduce the extent of data states are required to provide. The Agency continues to work on changes to facilitate the creation of and access to RCRIS data such as migrating data entry to an Internet-based platform to eliminate cumbersome mainframe based data entry software.

Agency-Wide Peer Review

In FY 1997, GAO reported that implementation of the EPA's Peer Review Policy was uneven across the Agency. A more extensive internal evaluation substantiated GAO's claims. The Agency reported peer review as an Agency-level management control weakness and developed a corrective action plan. This plan included revising the Peer Review Standards Operating Procedures, reiterating the Agency policy, and developing and presenting training on the revised procedures. Ongoing evaluation of the implementation of peer review will provide feedback on the effectiveness of the corrective actions. The Agency expects completion of its next evaluation by the end of FY 1999. In addition, GAO is conducting a new review on Federal Agencies' Peer Review of Scientific Research, and OIG is conducting a survey of the Agency's selection of peer reviewers.

EPA USER FEE PROGRAM

In 2000, EPA has four (4) user fee programs in operation and is proposing four (4) additional user fee programs. These user fee programs follows:

USER FEES CURRENTLY BEING COLLECTED

- **Motor Vehicle and Engine Compliance Program Fee**

  This fee is authorized by the Clean Air Act of 1990 and is managed by the Office of Air and Radiation. Fee collections began in August 1992. This fee is imposed on manufacturers of light-duty vehicles, light and heavy trucks, and motorcycles. It covers the cost of certifying new engines and vehicles and monitoring compliance of in-use engines and vehicles. In 2000, EPA expects to collect over $10.8 million from this fee.

- **Pesticide Reregistration Maintenance Fee**

  The 1988 amendments to the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) mandated accelerated reregistration of all pesticide products registered prior to November 1984. Congress authorized the Agency to collect two kinds of fees - Pesticide Reregistration Fees and annual Pesticide Maintenance Fees. The Pesticide Reregistration Fee expired in 1992. The Agency continues to collect Pesticide Maintenance Fees, which are deposited into the non-appropriated Reregistration and Expedited Processing Revolving Fund (FIFRA Fund). Pesticide Maintenance Fees are assessed on the manufacturers of active ingredients used in pesticide products based on the manufacturer's market share. The Food Quality Protection Act of 1996 (FQPA) extended Pesticide Maintenance Fees through 2001 and increased the cap on fees by $2.0 million. EPA expects to collect $16.0 million from this fee in 2000.

- **Pesticide Tolerance Fee**

  A tolerance is the maximum legal limit of a pesticide residue in and on food commodities and animal feed. In 1954, the Federal Food, Drug, and Cosmetic Act (FFDCA) authorized the collection of fees for the establishment of tolerances on raw agricultural commodities and in food commodities. These fees supplement annual appropriated funds for EPA's Tolerance Program and are also deposited into the FIFRA Fund. Annually the fees are adjusted by the percentage change in the Federal employee General Schedule (GS) pay scale. In 2000, the Agency expects to replace this fee with a more comprehensive cost-recovery fee. The FFDCA, as amended by FQPA, mandates that EPA must require the payment of such fees as will, in the aggregate, be sufficient to provide, equip, and maintain an adequate service for establishing tolerances. The Agency is reevaluating the fee schedule to recover the full cost of tolerance determinations as directed by the FQPA. In 2000, EPA will work to finalize the

needed rules to increase tolerance fees to ensure that the tolerance setting process will be as self-supporting as possible by 2001.

- **Pre-manufacture Notice Fee**

  Since 1989, this fee has been collected for the review and processing of new chemical Pre-Manufacture Notices (PMN) submitted to EPA by the chemical industry. They are paid at the time of submission of the PMN for review by EPA's Office of Prevention, Pesticides and Toxic Substances. PMN fees are authorized by the Toxic Substances Control Act and contain a cap on the amount the Agency may charge for a PMN review. EPA expects to collect $3.0 million in PMN fees in 2000 under the existing fee structure.

USER FEE PROPOSALS

- **Pesticide Registration Fee**

  The Administration will propose authorization language, subject to an appropriations language trigger, to implement the Pesticide Registration Fee authorized by the FIFRA and U.S.C. 9701 "Fees and Charges For Government Services and Things of Value." Following enactment of authorization and appropriations language, the Agency expects to collect $16 million in 2000 from the reinstatement of Pesticide Registration Fees that Congress suspend through 2001. Through such fees, manufacturers of new pesticide products share the cost of ensuring that authorized uses of these products do not pose unreasonable risk to human health and the environment. Pesticide Registration Fees will be deposited into a special fund in the U.S. Treasury to be available to the Agency, subject to appropriation, to cover the cost of issuing registrations.

- **National Pollution Discharge and Elimination System (NPDES) Fee**

  EPA will finalize a regulation to collect non-refundable fees for developing, issuing, and modifying NPDES permits. These fees will be collected for selected EPA-issued NPDES permits and will be charged when a draft permit is issued for new facilities and modified permits are issued for existing facilities.

- **Pre-manufacture Notice Fee**

  The Agency is proposing appropriations language to raise the existing Pre-Manufacture Notice (PMN) fees to allow the Agency to cover the full cost of the PMN program. This language would modify the current statutory cap in the Toxic Substances Control Act on the total fee that EPA is allowed to charge. Under the current fee structure, the Agency will collect $3,000,000 in FY 2000. The Agency expects to collect $8,000,000 annually from the fee cap modification, when fully implemented. The increase in PMN fees will be deposited

into a special fund in the U.S. Treasury, available to the Agency, subject to appropriation. In FY 2000 after the anticipated rulemaking, the Agency estimates collections of $4,000,000.

- **Lead Accreditation and Certification Fee**

The Toxic Substances Control Act, Title IV, Section 402(a)(3), mandates the development of a schedule of fees for persons operating lead training programs accredited under the 402/404 rule and for lead-based paint utilities contractors certified under this rule. The training programs ensure that lead paint abatement is done safely. Fees collected for this activity will be deposited in the U.S. Treasury. The Agency expects to finalize this rule in 1999, and estimates that less than $500,000 will be deposited in 2000 and subsequent years.

WORKING CAPITAL FUND

In 2000, the Agency begins its fourth year of operation of the Working Capital Fund (WCF). A WCF is a revolving fund authorized by law to finance a cycle of operations, where the costs of goods and services provided are charged to the users on a fee-for-service basis. The funds received are available without fiscal year limitation, to continue operations and to replace capital equipment. EPA's WCF was implemented under the authority of Section 403 of the Government Management Reform Act of 1994 and EPA's FY 1997 Appropriations Act. Permanent WCF authority was contained in the FY 1998 Appropriations Act.

The Chief Financial Officer and the Office of the Comptroller initiated the WCF in FY 1997 as part of their effort to: (1) be accountable to Agency offices, the Office of Management and Budget, and the Congress; (2) increase the efficiency of the administrative services provided to program offices; and (3) increase customer service and responsiveness. The Agency has a WCF Board which provides policy and planning oversight and advises the CFO regarding the WCF financial position. The Board, chaired by the Deputy CFO, is composed of seventeen permanent members from the program offices and the regional offices.

Two Agency services, begun in FY 1997 will continue into FY 1999. These are the Agency's computer center and telecommunications operations, managed by the Enterprise Technology Services Division (ETSD), Research Triangle Park, North Carolina and Agency postage costs, managed by the Office of Administration, Washington, DC. The Agency's 2000 budget request includes resources for these two activities in each National Program Manager's submission, totaling approximately $110 million. These estimated resources may be increased to incorporate program office's additional service needs during the operating year. To the extent that these increases are subject to Congressional reprogramming notifications, the Agency will comply.

THE CUSTOMER SERVICE PROGRAM

The Customer Service Program (CSP) was established in 1993, immediately after President Clinton signed Executive Order 12862, "Setting Customer Service Standards." The Office of Policy provides staff support, coordinates an annual conference, and chairs EPA's Customer Service Steering Committee (CSSC), the group that sets CSP policy. By involving approximately 400 individuals from staff and management through CSSC work groups and office/region/laboratory Consumer Service councils, the Agency leverages its two person customer service staff to implement the Agency's Customer Service Strategy.

What Improved Customer Service Will Achieve

EPA published a Customer Service Plan in September 1995, and in May 1997, officially adopted critical process standards and a set of universal principles that apply to the work of everyone at EPA. These six standards focus on:

- helping all EPA employees understand the importance and substantial mission related benefits of improving service to the public;
- providing employees with goals and guidelines for improvement and involving them in identifying and attempting to eliminate barriers to achieving standards;
- providing training to build staff capacity to achieve the standards and effectively apply customer service skills;
- developing measurement and tracking systems to document service and product improvements;
- learning what we need to do to increase satisfaction with our services and our treatment of customers; and recognizing and rewarding customer service excellence.

By 2003, all EPA staff will be meeting the customer service standards that apply to their work and will have received training necessary to assist them to achieve the standards.

Because customer feedback and satisfaction measurement are critical underpinnings to the overall program, in 1998 the CSP developed "Hearing the Voice of the Customer - Customer Feedback and Customer Satisfaction Measurement Guidelines." In 1999, CSP will sponsor workshops to train an advisor/consultant group to assist people across the Agency to use the guidelines to obtain and use customer input. All feedback instruments will be cleared through the OMB under the CSP generic Information Collection Request (ICR) for customer satisfaction surveys. The CSP reports bi-monthly to the National Partnership for Reinventing Government and the American people via the Internet. This initiative, "Conversations with America," solicits and gathers customers' comments and ideas for improving EPA's products and services.

Nearly 200 EPA staff are certified to facilitate training across the Agency. Many are involved in delivering both Forging the Links, an EPA specific service workshop, and customer skills courses that supplement the workshop. Through sharing benchmarking/best practices information and by sponsoring the annual conference, the CSP supplements training opportunities. Through recognizing outstanding service, the Agency highlights, encourages, and reinforces service excellence.

Expected Results

In support of the Customer Service Executive Order and various Presidential memorandums in FY 2000, the Agency will maintain leadership and coordination of the National CSP by providing:

- policy and guidance development;
- communication and liaison with Senior managers, the National Partnership for Reinventing Government (NPR), and other federal and state partners;
- best practices research;
- conversations with American reporting;
- direct and contractual support to the CSP committees and work groups;
- continuous support for guidelines and measurements;
- a third National Customer Service Conference;
- increased access to CSP information via the Intra and Internet.

EPA's Administrator Carol Browner has stated that "EPA will be a model for all regulatory agencies by fully integrating customer satisfaction measures into our strategic planning, budgeting and decision making, while recognizing the diversity of our customers and the need for balancing competing and conflicting interests. Above all, we will strengthen our ability to listen to the voice of our customers so that we can identify their needs and act upon them." The Customer Service Program supports the Administration's commitment to enhance customer service.

COSTS AND BENEFITS OF ECONOMICALLY SIGNIFICANT RULES IN FY 1999 OR FY 2000

Goal 1: Clean Air

Automobile and Light-Duty Truck Manufacturing (Surface Coating) NESHAP/VOC Reductions

This action will result in the reduction of HAPs and VOCs emitted by the automobile and light-duty truck manufacturing industry. The major HAPs emitted from surface coating operations include ethylene glycol monobutyl ether, methyl ethyl ketone, methyl isobutyl ketone, toluene, and xylene, among others. There are approximately 60 automobile and light-duty truck assembly plants in the U.S. This project is in the data gathering phase; thus, quantitative estimates of costs and benefits are not available at this time.

Industrial Combustion Coordinated Rulemaking - ICCR Project

The EPA is developing combustion-related regulations for five source categories. The source categories are: combustion turbines, internal combustion engines, industrial/commercial/institutional boilers, process heaters, and solid waste incinerators burning non-hazardous waste. These regulations are being developed under Sections 111, 112, and 129 of the CAA. Sections 111 and 129 require maximum achievable control technology (MACT) floors and MACT levels to be determined. MACT standards apply to both new and existing facilities. Section 111 requires the development of new source performance standards (NSPS). These regulations apply to new, modified, and reconstructed sources and do not apply to existing sources. These source categories are widespread and one or more of these source categories are located at virtually every manufacturing and chemical plant in the US. Section 112 standards apply to a list of 189 hazardous air pollutants (HAPs); Section 129 standards apply to 9 pollutants (dioxin and furans, mercury, cadmium, lead, particulate matter and opacity, sulfur dioxide, hydrogen chloride, oxides of nitrogen, and carbon monoxide) which are a combination of HAP's and criteria pollutants; and Section 111 applies to criteria pollutants. There is likely to be some regulatory interaction between these source categories since many are collocated at the same plant site. Therefore, EPA is undertaking a coordinated rulemaking with early and continuing stakeholder participation, including participation by small entity representatives. A coordinated participatory rulemaking offers benefits to all stakeholders including: the opportunity for stakeholders to shape regulatory development, more cost-effective regulations, avoidance of duplicative or conflicting regulations, simpler regulations, compliance flexibility, EPA and stakeholder resource savings in rule development, and an improved scientific basis for regulations. The benefits and costs resulting from the ICCR are not known at this time. Control Technologies and their efficiencies and costs are still being investigated. More should be known in early to mid 1999. It is expected that the costs and benefits could be large due to the fact that there are potentially hundreds of thousands of affected facilities located at almost all types of industrial facilities.

NESHAP: Integrated Iron and Steel

The Clean Air Act, as amended November 1990, requires the EPA to regulate categories of major and area sources of hazardous air pollutants (HAP). The EPA has determined that integrated iron and steel mills emit several of the 189 HAP listed (including compounds of chromium, lead, manganese, toluene, and polycyclic organic matter) in quantities sufficient to designate them as major sources. As a consequence, integrated iron and steel facilities are among the HAP-emitting source categories selected for regulation. The integrated iron & steel NESHAP will significantly reduce hazardous air pollutant metals and particulate emissions from these sources. The cost and benefits analysis for this NESHAP has not been completed, as a result this rule may not constitute an economically significant (major) rule under E.O. 12866.. This analysis should be completed in October 1999.

Control of Air Pollution from Marine Diesel Engines Rulemaking

This rulemaking will serve to reduce harmful emissions from marine diesel engines rated over 37 kW. The measurable benefit of the regulation will be an approximately 35 percent reduction in emissions of oxides of nitrogen and particulate matter from these engines. The costs of the rulemaking will be borne by the manufacturers of marine diesel engines and will likely be passed on in part to their customers in the form of higher prices. No direct costs will be borne by any government or household. Total estimated costs to society range from $40 million to $110 million per year (in 1998 dollars). A net present value over 20 years is calculated to be approximately $700 million when discounted at 7 percent. Monetized benefits estimates for this rulemaking are not yet available.

Heavy-duty Gasoline Engines/Vehicles Rulemaking

EPA proposed NOX plus NMHC standards for 2004 and later model year heavy-duty diesel and Otto-cycle (e.g. spark ignition / gasoline-fueled) engines. EPA finalized the standards for diesel engines (62 FR 54694, October 21, 1997) but did not finalize the standards for Otto-cycle engines. In a Supplemental Notice of Proposed Rulemaking, EPA will be proposing new HD Otto-cycle engine and vehicle standards. Currently, EPA has a vehicle program for vehicles up to 8,500 pounds gross vehicle weight (GVWR) and an engine-based program for engines used in vehicles with GVWRs above 8,500 pounds. EPA plans to propose to move complete HD vehicles (about 70 percent of HD gasoline engines) into the vehicle program. Examples of vehicles included in this category are large full size pickup, the largest sport utility vehicles, and full size cargo and commercial passenger vans. EPA will also be proposing engine-based standards for engines used in vehicles not covered by the vehicle program. The new standards would reduce emissions of oxides of nitrogen and hydrocarbons from these engines by about 75 percent from current levels beginning with the 2004 model year. Cost and benefits estimates are not yet available for this rule, however, EPA anticipates that it will be an economically significant (major) rule under E.O. 12866.

Tier II Light-duty Vehicle and Light-duty Truck Rulemaking

The Tier II rulemaking will be a significant rulemaking under the definitions in Executive Order 12866. This rulemaking will propose the next generation of emission standards for light-duty vehicles and light-duty trucks. The primary focus of this action will be reducing emissions of nitrogen oxides and non-methane hydrocarbons, pollutants which contribute to ozone pollution. Highway vehicles are significant contributors to ozone pollution, though tighter standards will also have additional air quality benefits. These standards cannot go into effect before the 2004 model year, as per Clean Air Act requirements. EPA is also planning on addressing more stringent standards for heavy-duty gasoline engines, effective no earlier than model year 2007, in this rulemaking since many of the technologies used to achieve better emissions performance of light-duty trucks could also be used to reduce emissions from heavy-duty gasoline engines. The rulemaking will also propose limitations on the sulfur content of gasoline. Sulfur has a detrimental impact on catalyst performance and could be a limiting factor in the introduction of advanced technologies on motor vehicles. There are also additional air quality benefits, such as particulate matter and sulfate reductions, associated with reducing sulfur levels in gasoline. This rulemaking is in a very early stage of development, and related cost and benefit estimates are not yet available. Therefore, it may not constitute an economically significant (major) rule under E.O. 12866.

Goal 2: Clean and Safe Water

NPDES Storm Water Phase II Rule

The proposed NPDES storm water phase II rule establishes a permitting program to regulate contaminated storm water discharges from small municipal separate storm sewer systems in urbanized areas and small construction sites (between one and five acres). There are some waivers built into the draft rule, reducing or eliminating application requirements where there is little or no environmental impact. For the rulemaking components that have been proposed, the Agency estimated total annual costs ranging from $141 million to $880 million (1997 dollars) . Benefits associated with the proposed rule include improvements to water quality and reduced human health risks. Estimated annual monetized benefits associated with financial, recreational, and health related improvements ranged from $175 million to $573 million (1997 dollars) annually. The Agency has identified additional benefit categories that it was unable to monetize and thus are not included in these estimates. The Agency received a wide range of comments through various public forums and expects that revisions will be made to these estimates. EPA plans to finalize this rule in October 1999.

Proposed Regulation Governing Cooling Water Intake Structures

EPA is developing regulations for proposal under Section 316(b) of the Clean Water Act (CWA), 33 U.S.C. Section 1326(b). The proposed regulation governing cooling water intake structures is unique in that it applies to the intake of water and not the discharge. Section 316(b) provides that any standard established pursuant to Sections 301 or 306 of the Clean Water Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available (BTA) for minimizing adverse

environmental impact. A primary purpose of Section 316(b) is to minimize the impingement and entrainment of fish and other aquatic organisms by a facility's cooling water intake. Impingement refers to the trapping of fish and other aquatic life in cooling water intake screens. Entrainment occurs when aquatic organisms, eggs and larvae are sucked into the cooling system, through the heat exchanger, and then pumped back out. EPA is currently estimating costs and benefits of this rule and will make them available when the rule is proposed.

National Primary Drinking Water Regulations: Disinfectants/Disinfection Byproducts Rule

The regulation for Stage 1 Disinfectant/Disinfection Byproducts (DBPs) is intended to expand existing public health protections and address concerns about risk trade-offs between pathogens and disinfection byproducts. EPA has estimated that the total annualized cost, for implementing the Stage 1 DBP rule is $702 million in 1998 dollars. This estimate includes annualized treatment costs to utilities ($593 million), start-up and annualized monitoring costs to utilities ($91.7 million), and startup and annualized monitoring costs to states ($17.3 million). Annualized treatment costs to utilities includes annual operation and maintenance costs ($362 million) and annualized capital costs assuming a 7 percent cost of capital as the discount rate ($231 million). While the benefits of this rule are difficult to quantify because of the uncertainty associated with risks from exposure to DBPs (and the resultant reductions in risk due the decreased exposure from DBPs), EPA believes that there is reasonable likelihood that benefits will exceed the costs. The potential economic benefits of the Stage 1 DBP rule derive from the increased level of public health protection and associated decreased level of risk. The quantification of the benefits resulting from DBP control is masked by the uncertainty in the understanding of the health risks. Epidemiological studies, suggest an association between bladder cancer and exposure to chlorinated surface water; however, these risks are uncertain. The lowest estimate from five selected epidemiological studies of the number of new bladder cancer cases per year attributable to chlorinated surface water is 1,100 cases, while the highest is 9,300 cases. In contrast, toxicological studies yield baseline estimates of 1 to 100 new cancer cases per year attributable to DBPs in surface water. The rule is estimated to reduce DBP levels in finished drinking water by 24% on average. The final DBP Stage I rule was signed in November 1998.

National Primary Drinking Water Regulations: Interim Enhanced Surface Water Treatment Rule

The regulation for Interim Enhanced Surface Water Treatment is intended to expand existing public health protections and address concerns about risk trade-offs between pathogens and disinfection byproducts. As reflected in the November, 1998 Interim Enhanced Surface Water Treatment Rule (IESWTR) Regulatory Impact Analysis, EPA estimated the national capital and annualized costs of possible IESWTR provisions would be $759 million and $307 million, respectively. These estimates include costs associated with improved treatment, turbidity monitoring, a disinfection benchmark, and sanitary surveys. Mean estimated *annual* benefits of the provisions range from $348 million to $1.6 billion , depending upon varied baseline and improved Cryptosporidium removal assumptions with corresponding reduced cases of cryptosporidiosis illness ranging from 110,000 to 463,000. The final IESWTR was signed in November 1998.

National Primary Drinking Water Regulations: Ground Water Rule

The Safe Drinking Water Act as amended in 1996 directs EPA to promulgate regulations requiring disinfection "as necessary" for ground water systems. The intention is to reduce microbial contamination risk from public water systems relying on groundwater. To determine if treatment is necessary, the rule will establish a framework to identify public water supplies vulnerable to microbial contamination and to develop and implement risk control strategies including but not limited to disinfection. From a public health perspective, the Ground Water Rule will reduce both endemic levels and outbreaks of illness. The economic analyses for this rule are still under development. EPA plans to propose this rule in September 1999.

National Primary Drinking Water Regulations: Arsenic

SDWA directs EPA to establish a maximum contaminant level (MCL) as close to the maximum contaminant level goal (MCLG) as feasible, considering treatment efficacy and costs. EPA must list affordable technologies or treatment techniques that achieve compliance with the MCL for three categories of small systems considering the quality of the source water. Furthermore, alternatives to central treatment, such as point-of-use and point-of-entry devices, can be considered for small systems that maintain control over operation and maintenance. At the time of proposal, EPA must seek comment on its analyses of costs of compliance and health risk reduction benefits likely to occur as the result of treatment to comply with the proposed MCL and any alternatives being considered. The cost-benefit analyses are still under development at this time. EPA plans to propose this rule in January 2000.

National Primary Drinking Water Regulations: Radon

Pursuant to the Safe Drinking Water Act as amended in 1996, EPA is required to: (1) withdraw the 1991 proposed radon in drinking water rule; (2) work with the National Academy of Sciences to conduct a risk assessment for radon in drinking water and assess the health risk reduction benefits associated with various mitigation methods of reducing radon in indoor air; (3) publish a radon health risk reduction and cost analysis for possible radon Maximum Contaminant Levels (MCLs) for public comment, by February, 1999; (4) propose a Maximum Contaminant Level Goal (MCLG) and National Primary Drinking Water Regulation (NPDWR) for radon by August, 1999; and (5) publish an MCLG and Final NPDWR for radon by August, 2000.

EPA is currently developing estimates of the anticipated costs and benefits associated with this regulation. Among other things, EPA will be evaluating the unit risk information (with the input of the National Academy of Sciences), the occurrence of radon in public water systems, the unit costs of various types of radon in water treatment systems, the characterization of the flows associated with "model" systems, the number of systems in various size categories, the costs and benefits associated with the health effects of radon, and models for integrating much of these data. Most of this information and supporting calculations are expected to be available by the time the Health Risk Reduction and Cost Analysis is published (February 1999).

Effluent Guideline for Industrial Laundries

The proposed effluent guidelines rulemaking for the industrial laundries industry would limit the discharges of pollutants into waters of the United States and into publicly owned treatment works (POTWs) by establishing pretreatment standards for existing sources (PSES). The proposed rule would benefit the environment by removing toxic pollutants that have adverse effects on human health and aquatic life. The standards would also reduce potential interference with POTW operations. The proposed PSES limitations would reduce the discharge of pollutants to waters of the U.S. by 5 million pounds per year. EPA estimates that these pollutant reductions would provide several types of benefits including: reduced incidences of cancer, recreational fishing improvements, non-use benefits, and reduced interference with POTW operations. EPA estimates annual benefits in the range of $2.9 million to $10.6 million (1997 dollars). Other benefits that are expected, but have not been expressed in monetary terms, include reduced noncancer health effects, and enhanced recreation other than fishing (e.g. swimming, boating). The estimated total annualized social cost for the standards is $139.4 million (1997 dollars), which incorporates capital costs of $470 million and annual operating and maintenance costs of $86 million using a 7 percent discount rate. EPA plans to issue this final rule in June 1999.

Goal 3: Safe Food

Ground Water and Pesticide Management Plan

(Final Action 09/99). This final regulation would establish Pesticide Management Plans (PMPs) as a new regulatory requirement for certain pesticides. Absent an EPA-approved Plan specifying risk-reduction measures, use of the chemical would be prohibited. The rule would also specify procedures and deadlines for development, approval and modification of plans. EPA anticipates four categories of costs entailed in requiring PMPs. Federal Program Costs are those of administering ground-water protection activities, such as the review of State or Tribal proposals. State Program Costs entail both capital and annual costs. Registrant and user impacts are the economic losses ascribed to the reduced use of the classified pesticides, as well as the costs (to the registrants) of complying with Federal, State and Tribal provisions. Benefits accrue from the reduced levels of pesticide residues in ground water, and a corresponding reduction in: 1) human and ecological risk; and 2) threats to the economic and intrinsic values of the ground-water resource. Enormous uncertainties attend the quantification of these benefits. Because the Food Quality Protection Act (FQPA) requires that EPA consider drinking water as part of dietary exposure, the Agency is analyzing implications for this regulation.

Pesticide Tolerance Reassessment Program (a series of regulatory actions issued over 10 years)

EPA will reassess pesticide tolerances and exemptions for raw and processed foods established prior to August 3, 1996, to determine whether they meet the "reasonable certainty of no harm" standard of the Federal Food, Drug and Cosmetic Act (FFDCA). FFDCA sec. 408(q), as amended by the Food Quality Protection Act, requires that EPA conduct this reassessment on a phased 10-year schedule. Based on its reassessment, EPA will take a series of regulatory actions to modify or revoke tolerances that do not meet the reasonable certainty of no harm standard.

Analysis of costs will be conducted as part of an economic analysis of the revocation/modification actions proposed. The FFDCA allows EPA to consider benefits only in a very limited manner in determining whether to retain or modify a pesticide tolerance. Actions taken as a result of the tolerance reassessment program will ensure that dietary exposures to pesticides will be safe, taking into account aggregate exposure from food, water and non-occupational sources, and considering the cumulative effects of substances have a common mode of toxicity.

Endocrine Disruptor Screening and Testing Program

The Food Quality Protection Act (FQPA) requires EPA to screen pesticides for estrogenic effects on human health. The Safe Drinking Water Act authorizes EPA to screen chemicals found in drinking water sources in similar manner. EPA proposed a screening program in August 1998, and FQPA mandated that it be implemented by August 1999 and report to Congress in August 2000. EPA established the Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) in October 1996, to provide advice and counsel to the Agency in implementing the screening and testing program. EDSTAC was comprised of 43 members representing industry, government, environmental and public health groups, labor academia, and other interested stakeholders. EPA was represented on EDSTAC by OPPTS, ORD and OW. EDSTAC has held its final meeting in June 1998. The Committee considered human health and ecological effects; estrogenic, androgenic, anti-estrogenic, ani-androgenic and thyroid effects in its deliberations and extended its scope to include industrial chemicals, drinking water contaminants and important mixtures as well as pesticides. EDSTAC will submit its final report to EPA in August 1998. EPA will propose its screening and testing strategy in August 1998 and will propose a more detailed implementation plan for public comment in fall of 1998.

Evidence is continuing to mount that wildlife and humans may be at risk from exposure to chemicals operating through a endocrine mediated pathway. Preliminary studies show decreases on IQ tests and increases in aggression and hyperactivity in children. Severe malformations of the genitals of boys has increased steadily over the last two decades. Although increases in cancers of endocrine sensitive tissues have been reported, no link has been made to show that chemicals are the cause. Wildlife effects linked to specific chemical exposures have been more thoroughly documented in the U.S., Europe, Japan, Canada and Australia. Evidence is sufficient for the U.S. to proceed on a two track strategy; research on the basic science regarding endocrine disruption and screening to identify which chemicals are capable of interacting with the endocrine system. The combination of research and test data developed by this program will enable EPA to take action to reduce chemical risks.

It is too early to project the costs and benefits of this program accurately. However, as a rough estimate, the screening battery is estimated to cost $200,000 per chemical. It is too early to determine how many chemicals will be screened in Tier 1 much less tested in Tier 2. It is also too early to tell the benefits-that is how many chemicals will be identified that are endocrine disruptors and their exposure reduced either by formal risks management or by voluntary exposure reduction or product substitution.

Goal 4: Preventing Pollution in Communities Homes and Workplaces

Proposed Lead Rulemaking Under TSCA Section 402, Lead-Based Paint Activities (Final rule Remodeling & Renovation 09/01; Final Rule Debris 11/00; Final Rule Buildings and Structures).

The Residential Lead-Based Hazard Reduction Act of 1992 (TitleX) amended TSCA by adding a new Title IV. TSCA Section 402, Lead-Based Paint Activities Training and Certification directs EPA to promulgate: (a) regulations governing lead-based paint activities to ensure that individuals engaged in such activities are properly trained, that training programs are accredited, and that contractors engaged in such activities are certified ; (b) a Model State program which may be adopted by any State which seeks to administer and enforce a State Program for the requirements established under TSCA Section 402; (c) a rule addressing lead risks from renovation and remodeling activities or state when no regulation is necessary; and (d) a rule establishing a fee schedule for the lead based paint training, certification, and accreditation activities addressed in the rules developed under TSCA Section 402. Additionally, in response to concerns that high disposal costs would discourage lead abatements, EPA is using its authority under TSCA Section 402 (a) to address the disposal of lead-based paint debris that will result from the lead-based paint activities regulated under TSCA Section 402. To minimize duplication of waste management requirements, EPA is developing a companion RCRA rule to suspend temporarily hazardous waste management regulations applicable to lead-based paint debris which will be subject to the new TSCA standards.

For the Section 402(a)/404(Residential) rule, the costs ($16 million in the initial year, $10 million in subsequent years) have been provided in the final economic impact analysis that was prepared in conjunction with the final rule. For the remainder of the Section 402 rules, costs will be estimated in the draft economic impact analyses that will be prepared for the proposed rules. Since benefits depend on private sector implementation of certain lead hazard abatement activities which are not mandated by any of these rules, benefits will be difficult to quantify.

TSCA Section 403; Identification of Dangerous Levels of Lead (Final Rule 09/99)

TSCA Section 403 requires EPA to promulgate regulations that identify lead-based paint hazards, lead-contaminated dust and lead-contaminated soil. EPA published an interim guidance document in 1995, to provide public and private decision-makers with guidance on identifying an prioritizing lead-based paint hazards for control. This interim guidance will continue to serve as EPA's official policy until the final TSCA Section 403 rule is promulgated. EPA proposed the Section 403 Rule in June 1998. Net benefits to society associated with the proposed standards were estimated to equal $42.5 billion over a fifty year period.

Polychlorinated Biphenyls (PCBs) Disposal Amendments (Final Rule on Use Authorizations 03/99; Notice/Decisions on Import Issue 09/99)

This rulemaking will make over 90 modification, additions, and deletions to the existing PCB management program under the Toxic Substances Control Act (TSCA). A notice of proposed rulemaking was published on December 6, 1994, and covered the manufacture (including import) processing, distribution in commerce, export use, disposal, and marking of PCBs. On Jun 29, 1998, EPA issued a final rule involving the disposal related provisions. The other provisions, regarding use authorizations and imports, will be addressed in separate actions.

EPA projects significant cost savings from authorizations for existing uses and the disposal of large-volume wastes such as PCB-contaminated environmental media. In addition, certain administrative requirements should increase the speed of remediation of contaminated sites and accelerate the removal from use of PCBs. EPA projects minimal implementation costs and is reviewing comments which highlight areas for additional cost savings over the proposal. EPA estimates that millions of tons of PCB-contaminated environmental media will be remediated under this rule, thus preventing large quantities of this long-lived, bioaccoumulating chemical from entering the food chain.

Chemical Right-to-Know (RTK) Initiative

Vice President Gore announced the Chemical RTK Initiative to encourage the provision of information about the toxicity of commercial chemicals. There are three key components to this initiative: (1) baseline toxicity testing for 2,800 widely used commercial chemicals; (2) additional health effects testing for chemicals to which children are disproportionately exposed; and (3) the listing and lowering thresholds for persistent, bioaccumulative, toxic chemicals reported to TRI.

The benefits of the Chemical Right-to-Know Initiative are unknown, but may be substantial in terms of assisting risk management and avoidance decisions. The cost of the baseline testing is approximately $200,000 per chemical. More detailed testing, as envisioned for the Children's Health testing portion of this initiative is expected to impose additional costs.

Goal 5: Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response

Revised Standards for Hazardous Waste Combustion Facilities

The Combustion MACT Standards rulemaking was proposed in April 1996, with the final rulemaking currently scheduled for signature in 1999. This is a joint action that invokes the authorities of both the Clean Air Act (CAA) and RCRA. The Final Rule will set technology-based emission limits for hazardous waste incinerators, cement kilns, and LWAKs, using the Maximum Achievable Control Technologies (MACT) provisions under Sec. 112 of the CAA.

Aggregate compliance costs for all sources to meet the final recommended standards are estimated to average about $75 million per year. Individual combustion systems are likely to

experience annual compliance costs ranging from $244,000 to $1.0 million, depending upon equipment retrofit requirements. An estimated two (2) cement kilns and approximately thirteen (13) on-site incinerators may stop burning hazardous waste in response to implementation of the final recommended standards.

The MACT standards are expected to provide both human health and ecological benefits. Preliminary benefits have been monetized for both cancer and non-cancer effects. Ecological benefits have not been monetized. Human health benefits for the final standards are currently estimated at about $25 million per year. Other benefits potentially attributable to the final Rule, such as improved visibility were not estimated.

Goal 7: Community Right-to-Know

TRI; Addition of Oil and Gas Exploration and Production to the Toxic Release Inventory (Final Rule 12/00)

The original Toxics Release Inventory (TRI) required reporting from facilities in Standard Industrial Classification (SIC) codes 20-39. These SIC codes cover facilities whose primary economic activity was classified as manufacturing. This requirement was specified under the Emergency Planning and Community Right-To-Know Act (EPCRA). EPCRA provides the Administrator with the authority to add or delete SIC codes and the discretion to add particular facilities based on a broad set of factors. EPA has recently expanded this original list of covered industries. EPA began additional analyses to determine whether facilities which perform exploration and production of oil and gas should also be added to the list of facilities covered under EPCRA. No final decision on this issue has been made.

Based on the current status of the project, anticipated costs are unknown. Estimated costs for compliance with EPCRA reporting requirements are available, but until further evaluation is completed no estimates are available for the impact of the resulting requirements on any industries that may be added. Generally, anticipated benefits will be in the form of making available more complete information regarding the release and disposition of toxic chemicals in the environment.

TRI; Chemical Expansion; Finalization of Deferred Chemicals (Final Action 12/00)

On November 30, 1994, EPA added 286 chemicals and chemical categories to EPCRA Section 313 list, including 39 chemicals as part of two delineated categories. Each chemical and chemical category was found to meet the statutory criteria described in EPCRA. At this time, EPA deferred final action on 40 chemicals and one chemical category until a later date. These were deferred because the comments received on them raised difficult technical or policy issues which required additional time to address. EPA chose not to delay final action on the 286 chemical and chemical categories because of the additional time needed to address the issues surrounding the smaller group of 40 chemicals and one chemical category; rather, EPA believed it to be in the spirit

of right-to-know to proceed with the final rulemaking of the additional chemicals and chemical categories.

The final total costs are not yet known, since the final listing decisions have not yet been made. The addition of any of these chemicals or the chemical category will result in additional costs to the reporting community. The additional information reported in TRI increases the public's knowledge regarding the levels of pollutants released to the environment and pathways of exposure. It allows the public to make informed decisions on where to work and live; enhances the ability of corporate lenders and purchasers to more accurately determine a facility's potential liabilities; and assists Federal, State, and local authorities making better decisions on acceptable levels of toxics in communities.

TRI: Pollution Prevention Act Information Requirements (Final Action 06/00)

The Pollution Prevention Act of 1990 (PPA) requires the addition of several data elements to the Toxic Chemical Release Inventory (TRI) reporting requirements. It requires owners or operators of certain facilities that manufacture, process, or otherwise use listed toxic chemicals to annually report their releases of these chemicals to each environmental medium. The PPA mandates that facilities also report on source reduction and recycling activities relating to the toxic chemicals beginning with the 1991 reporting year. Since 1991 covered facilities have been providing this information to EPA in Section 8A, Source Reduction and Recycling Activities, of EPA Form R. EPA's proposed regulation would provide definitions and instructions for reporting the PPA data elements on the EPA Form R.

Because of the inconsistencies in the PPA data currently reported on the Form R, communities are unable to accurately compare the risks related to release and recycling activities between different facilities. By providing covered facilities with clear guidance for reporting this information, the public will be better equipped to determine and compare the risks associated with toxic chemicals being released and managed in their community.

EPA estimates industry currently incurs a cost of $61.3 million annually to report PPA data on Form R. This estimate does not include the costs related to the seven industries newly subject to EPCRA 313. The cost to process source reduction and waste management data equals $2.7 million each year. This action is not expected to add to these existing costs, and may actually result in a reduction to the overall industry burden and costs.

TRI; Reporting Threshold Amendment; Toxic Chemicals Release Reporting; Community Right-to-Know (Final Action 09/99)

The Toxic Release Inventory (TRI) currently requires reporting from facilities which manufacture or process at least 25,000 pounds of a listed chemical, or otherwise use 10,000 pounds of a listed chemical. These thresholds were initially established under the Emergency Planning and Community Right-to-know Act (EPCRA). EPCRA gives the Administrator the power to establish a threshold amount for a toxic chemical different from the amount established by paragraph (1) and

that such altered thresholds may be based on classes of chemicals. EPA is considering lowering the thresholds for those chemicals which it determines to be highly toxic at very low dose levels and/or have physical, chemical, or biological properties that make the chemicals persist for extended periods in the environment, and/or bioaccumulate through the food chain. Persistent bioaccumulative toxic chemicals are of particular concern in ecosystems such as the Great Lakes Basin due to the long retention time of the individual lakes and the cycling of the chemicals from on component of the ecosystem to another. EPA is currently conducting analysis to determine which chemicals present the specific problems described above, and to determine what the altered threshold value(s) should be.

Currently communities do not have access to TRI data on chemicals that, although released in relatively small quantities, pose a potential risk to human health and the environment because they persist and bioaccumulate. By lowering the reporting thresholds for such chemicals the public will be able to determine if such chemicals are being released into their communities and whether any action should be taken to reduce potential risks.

The anticipated costs related to this action are unknown at present. At this point the Agency is still unsure how low to set reporting thresholds or for what specific list of chemicals the lower reporting thresholds should apply. The information reported in TRI increases the knowledge levels of pollutants released to the environment and pathways to exposure; allows the public to make informed decisions on where to work and live; enhances the ability of corporate lenders and purchasers to more accurately determine a facility's potential liability; and assists Federal, State, and local authorities in making better decisions on acceptable levels of toxics in communities.

TRI: Review of Chemicals on the Original TRI List (Final Rule 12/00)

When TRI was established by Congress in 1986, the statutory language placed 309 chemicals and 20 categories of chemicals on the TRI list; that is referred to as the original TRI list. The chemicals on the original list were taken from two existing lists of toxic substances: the Maryland Chemical Inventory Report List of Toxic or Hazardous Substances, and the New Jersey Environmental Hazardous Substances list. This action constitutes the first systematic review of toxicology and environmental data for all the chemicals on the original TRI list to determine whether data for those chemicals conform with the statutory criteria for listing of chemicals on TRI. Chemicals for which data do not meet the statutory criteria will be delisted.

TRI provides information to industry, governments and the public on chemicals that can cause harm to health or the environment. The review of toxicology and environmental data for all chemicals on the original TRI list will ensure that the list focuses only on those chemicals that pose meaningful possibilities of risks to human health or the environment, increasing the effectiveness of the TRI.

The anticipated costs to industry related to this action are unknown at present. Costs to industry would be reduced if chemicals are removed from the TRI list. Benefits would result from any reduction in reporting burden as a result of the delisting of a chemical.

NON-APPROPRIATED FUNDS

OVERVIEW

Non-appropriated funds are monies which pay for discreet Agency activities supported by fees. These funds are available to the Agency and do not require an appropriation. The Environmental Protection Agency (EPA) has two accounts for such non-appropriated funds. These are 1) the Reregistration and Expedited Processing Revolving Fund and 2) the Revolving Fund for Certification and Other Services.

The 1988 amendments to FIFRA required the Agency to review and reregister all pesticides that were registered before November 1984. To supplement appropriated funding for the Pesticide Registration Program, two types of fees were established on the pesticide industry, Federal, state and local governments: (1) a Reregistration Fee and (2) an annual Maintenance Fee. Fee receipts are deposited into the Reregistration and Expedited Processing Revolving Fund available to EPA without annual appropriation. For this reason, EPA does not request dollars from this fund, commonly called the "FIFRA Fund", in the annual President's Budget. The Reregistration Fee expired in 1992, but Maintenance Fees will continue until 2001. From 1999 to the year 2000, $16,000,000 in annual Maintenance Fees will be collected and in the year 2001, $14,000,000 will be collected. EPA continues to fund part of the Pesticide Reregistration Program through its annual appropriations.

The Federal Food, Drug and Cosmetic Act (FFDCA) of 1963 requires EPA to establish tolerance levels and exemptions for pesticide residues on raw agricultural commodities. Under section 408 of FFDCA, the Agency is authorized to collect fees to recover the costs of processing petitions for these pesticide tolerances. The fees are paid by companies/registrants requesting establishment of a permanent or temporary pesticide tolerance at the time of the request and work is not begun until verification of the fees receipt is made. Fee receipts, until 1997, were deposited into the Revolving Fund for Certification and Other Services, commonly called the "Tolerance Fund" which are available to EPA without an annual appropriation. With enactment of the Food Quality Protection Act of 1996, fee receipts are now deposited into the Reregistration and Expedited Processing Revolving Fund. FQPA also requires the reassessment of all pesticide tolerances established before FQPA enactment. This new task is to be supported in the aggregate by a restructured tolerance fee, which will cover both tolerance petitions and tolerance reassessments. For 2000, the Agency will work to finalize the new fee regulation scheduled to be proposed in 1999. In 2000, the amount the Agency will collect will depend on the timing of the promulgation of the tolerance fee rule.

PROGRAM AND ACTIVITY HIGHLIGHTS

Reregistration and Expedited Processing Revolving Fund

Beginning in 1997, this non-appropriated revolving fund included $2,000,000 in new tolerance fees collected under the Food Quality Protection Act of 1996, plus the collection of the annual Pesticide Maintenance Fees. In 2000, estimated fee collections for the annual maintenance fee will be $16,000,000. In 2000, EPA will promulgate the needed rules to increase tolerance fees to ensure that the tolerance setting process will be as self-supporting as possible.

The Agency's emphasis on pesticide reregistrations will continue in 2000 and is reflected in the appropriated budget request to complete twenty (20) Reregistration Eligibility Decisions. In addition, the Agency continues to establish tolerances for pesticide residues in or on food for feed crops in the United States under The Food Quality Protection Act of 1996. The Agency expects to conduct 105 tolerance petition actions in 2000.

Revolving Fund for Certification and Other Services

The Food Quality Protection Act of 1996 requires new tolerance fees be deposited into the Registration and Expedited Processing Revolving (FIFRA) Fund. In 1999, tolerance fees are no longer deposited in the Revolving Fund for Certification and Other Services. The Agency expects to outlay any remaining fund balance in 1999.

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Acid Rain -CASTNet	$4,000.0	$4,000.0
Science & Technology	$4,000.0	$4,000.0
Acid Rain -Program Implementation	$9,951.3	$12,183.3
Environmental Program & Management	$9,951.3	$12,183.3
Administrative Law	$2,324.3	$2,193.4
Environmental Program & Management	$2,324.3	$2,193.4
Agricultural Worker Protection	$4,365.2	$5,738.1
Environmental Program & Management	$4,365.2	$5,738.1
Air Toxics Research	$19,681.7	$20,561.6
Science & Technology	$19,681.7	$20,561.6
Air,State,Local and Tribal Assistance Grants: Other Air Grants	$155,901.8	$167,222.0
State and Tribal Assistance Grants	$155,901.8	$167,222.0
Assessments	$87,738.8	$88,970.3
Hazardous Substance Superfund	$87,738.8	$88,970.3
Assistance Agreement Audits	$6,830.5	$6,632.0
Inspector General	$3,428.7	$3,230.2
Hazardous Substance Superfund	$3,401.8	$3,401.8
Assistance Agreement Investigations	$2,650.4	$2,728.4
Inspector General	$2,650.4	$2,728.4
ATSDR Superfund Support	$76,000.0	$64,000.0
Hazardous Substance Superfund	$76,000.0	$64,000.0
Brownfields	$91,538.9	$91,667.5
Environmental Program & Management	$1,265.2	$1,393.8
Hazardous Substance Superfund	$90,273.7	$90,273.7
CCTI: RESEARCH	$10,000.0	$0.0
Science & Technology	$10,000.0	$0.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Center for Environmental Statistics (CEIS)	$3,965.8	$8,054.4
Environmental Program & Management	$3,965.8	$8,054.4
Chesapeake Bay (CWAP)	$19,630.1	$18,899.3
Environmental Program & Management	$19,630.1	$18,899.3
Childrens Health, Program Development and Coordination	$6,157.5	$5,744.8
Environmental Program & Management	$6,157.5	$5,744.8
Civil Enforcement	$84,324.4	$91,198.3
Environmental Program & Management	$81,763.9	$88,548.7
Science & Technology	$589.9	$574.6
Oil Spill Response	$1,234.0	$1,334.7
Hazardous Substance Superfund	$736.6	$740.3
Civil Enforcement - AFO (CWAP-related activity)	$0.0	$1,462.0
Environmental Program & Management	$0.0	$1,462.0
Civil Rights/Title VI Compliance	$1,637.1	$1,331.7
Environmental Program & Management	$1,637.1	$1,331.7
Clean Air Partnership Fund	$0.0	$200,000.0
State and Tribal Assistance Grants	$0.0	$200,000.0
Research (CWAP-related activity)	$1,406.0	$6,757.8
Science & Technology	$1,406.0	$6,757.8
Climate Change Research	$16,670.5	$22,833.6
Science & Technology	$16,670.5	$22,833.6
Climate Change Technology Initiative: Buildings	$38,800.0	$80,100.0
Environmental Program & Management	$38,800.0	$80,100.0
Climate Change Technology Initiative: Carbon Removal	$0.0	$3,400.0
Environmental Program & Management	$0.0	$3,400.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Climate Change Technology Initiative: Industry	$18,600.0	$55,600.0
Environmental Program & Management	$18,600.0	$55,600.0
Climate Change Technology Initiative: State and Local Climate Change	$2,900.0	$5,000.0
Environmental Program & Management	$2,900.0	$5,000.0
Climate Change Technology Initiative: Transportation	$31,750.0	$61,900.0
Environmental Program & Management	$4,800.0	$12,000.0
Science & Technology	$26,950.0	$49,900.0
Coastal Environmental Monitoring	$0.0	$6,549.0
Science & Technology	$0.0	$6,549.0
Common Sense Initiative	$7,091.3	$6,141.4
Environmental Program & Management	$6,224.3	$5,519.6
Science & Technology	$867.0	$621.8
Community Right to Know (Title III)	$4,683.5	$5,099.4
Environmental Program & Management	$4,683.5	$5,099.4
Compliance Assistance and Centers	$23,490.2	$18,397.2
Environmental Program & Management	$23,118.7	$17,865.5
Oil Spill Response	$274.8	$342.7
Hazardous Substance Superfund	$96.7	$189.0
Compliance Incentives	$4,075.6	$3,646.0
Environmental Program & Management	$3,865.2	$3,414.0
Hazardous Substance Superfund	$210.4	$232.0
Compliance Monitoring	$56,838.9	$64,170.3
Environmental Program & Management	$48,472.1	$54,347.0
Science & Technology	$4,568.4	$4,758.5
Hazardous Substance Superfund	$3,798.4	$5,064.8
Contract Audits	$4,950.6	$5,381.6
Inspector General	$4,245.1	$4,673.1
Hazardous Substance Superfund	$705.5	$708.5

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Contract and Procurement Investigations	$2,913.0	$2,975.8
Inspector General	$1,844.1	$1,906.9
Hazardous Substance Superfund	$1,068.9	$1,068.9
Contracts Management	$24,986.0	$27,503.9
Environmental Program & Management	$16,232.7	$16,833.7
Leaking Underground Storage Tanks	$69.6	$69.6
Hazardous Substance Superfund	$8,683.7	$10,600.6
Criminal Enforcement	$33,786.5	$35,635.4
Environmental Program & Management	$23,671.0	$25,068.9
Science & Technology	$3,327.7	$3,425.4
Hazardous Substance Superfund	$6,787.8	$7,141.1
Design for the Environment	$4,554.0	$3,886.1
Environmental Program & Management	$4,554.0	$3,886.1
Drinking Water Consumer Awareness	$1,365.8	$1,467.9
Environmental Program & Management	$1,365.8	$1,467.9
Drinking Water Implementation	$31,688.0	$31,803.8
Environmental Program & Management	$31,688.0	$31,803.8
Drinking Water Regulations	$33,886.2	$43,484.9
Environmental Program & Management	$31,767.3	$41,312.9
Science & Technology	$2,118.9	$2,172.0
Effluent Guidelines (CWAP)	$22,365.8	$23,193.0
Environmental Program & Management	$22,365.8	$23,193.0
EMPACT	$14,047.7	$17,983.3
Environmental Program & Management	$7,658.0	$10,744.1
Science & Technology	$6,389.7	$7,239.2
Employee Integrity Investigations	$953.4	$981.6
Inspector General	$953.4	$981.6

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Endocrine Disruptor Research	$12,230.0	$12,735.3
Science & Technology	$12,230.0	$12,735.3
Endocrine Disruptor Screening Program	$4,106.8	$7,668.9
Environmental Program & Management	$4,106.8	$7,668.9
Enforcement Training	$4,435.8	$5,117.2
Environmental Program & Management	$3,774.7	$4,456.1
Hazardous Substance Superfund	$661.1	$661.1
Environment and Trade	$4,514.6	$4,236.8
Environmental Program & Management	$4,514.6	$4,236.8
Environmental Education	$7,767.6	$8,426.1
Environmental Program & Management	$7,767.6	$8,426.1
Environmental Finance Center Grants (EFC)	$1,065.0	$940.0
Environmental Program & Management	$1,065.0	$940.0
Environmental Justice	$1,307.3	$1,311.1
Environmental Program & Management	$1,307.3	$1,311.1
Environmental Monitoring and Assessment Program, EMAP	$33,255.0	$33,955.0
Science & Technology	$33,255.0	$33,955.0
Environmental Technology Verification (ETV)	$6,990.5	$7,749.5
Science & Technology	$6,990.5	$7,749.5
Existing Chemical Data, Screening, Testing and Management	$12,870.0	$23,045.6
Environmental Program & Management	$12,870.0	$23,045.6
Facility Operations: Agency Rental/ Direct Lease	$170,571.8	$193,223.6
Environmental Program & Management	$133,357.0	$153,148.0
Leaking Underground Storage Tanks	$723.3	$723.3
Oil Spill Response	$511.7	$511.7
Inspector General	$3,236.6	$0.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Hazardous Substance Superfund	$32,743.2	$38,840.6
Facility Operations: Agency Utilities	$10,015.2	$11,567.9
Environmental Program & Management	$9,985.7	$11,538.4
Hazardous Substance Superfund	$29.5	$29.5
Facility Operations: Repairs and Improvements	$15,428.0	$20,410.5
Building and Facilities	$15,428.0	$20,410.5
Facility Operations: Security	$12,962.2	$13,037.2
Environmental Program & Management	$12,219.7	$12,294.7
Hazardous Substance Superfund	$742.5	$742.5
Federal Air Toxics Standards	$17,620.3	$14,902.9
Environmental Program & Management	$17,620.3	$14,902.9
Federal Facilities	$28,641.6	$28,720.4
Hazardous Substance Superfund	$28,641.6	$28,720.4
Federal Preparedness	$11,060.2	$11,060.2
Hazardous Substance Superfund	$11,060.2	$11,060.2
Financial Statement Audits	$4,187.5	$4,296.2
Inspector General	$3,300.6	$3,409.3
Hazardous Substance Superfund	$886.9	$886.9
Global Toxics	$932.3	$2,967.0
Environmental Program & Management	$932.3	$2,967.0
GLOBE	$0.0	$1,000.0
Environmental Program & Management	$0.0	$1,000.0
Grants Management	$8,568.8	$9,455.7
Environmental Program & Management	$7,331.5	$8,098.4
Leaking Underground Storage Tanks	$211.3	$211.3
Hazardous Substance Superfund	$1,026.0	$1,146.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Grants to States for Lead Risk Reduction	$13,712.2	$13,712.2
State and Tribal Assistance Grants	$13,712.2	$13,712.2
Great Lakes (CWAP)	$5,381.6	$4,366.3
Environmental Program & Management	$5,381.6	$4,366.3
Great Lakes National Program Office (CWAP)	$14,614.6	$13,367.5
Environmental Program & Management	$14,614.6	$13,367.5
Gulf of Mexico (CWAP)	$3,798.9	$4,290.6
Environmental Program & Management	$3,798.9	$4,290.6
Hazardous Substance Research:Hazardous Substance Research Centers	$1,067.2	$1,092.5
Science & Technology	$1,067.2	$0.0
Hazardous Substance Superfund	$0.0	$1,092.5
Hazardous Substance Research:Superfund Innovative Technology	$7,663.1	$7,114.6
Science & Technology	$7,663.1	$0.0
Hazardous Substance Superfund	$0.0	$7,114.6
Hazardous Waste Research	$6,619.3	$7,249.6
Science & Technology	$6,619.3	$7,249.6
Human Health Research	$50,323.8	$55,836.7
Science & Technology	$50,323.8	$55,332.7
Hazardous Substance Superfund	$0.0	$504.0
Human Resources Management	$21,932.0	$24,139.3
Environmental Program & Management	$19,486.1	$22,169.1
Science & Technology	$326.0	$226.0
Leaking Underground Storage Tanks	$36.3	$36.2
Hazardous Substance Superfund	$2,083.6	$1,708.0
Immediate Office of the Administrator	$2,791.3	$3,729.8
Environmental Program & Management	$2,791.3	$3,729.8
Indoor Air Research	$2,836.1	$0.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Science & Technology	$2,836.1	$0.0
Indoor Environments : Asthma	$1,135.5	$12,323.7
Environmental Program & Management	$1,135.5	$11,346.9
Science & Technology	$0.0	$976.8
Indoor Environments: ETS	$1,050.0	$2,194.3
Environmental Program & Management	$1,050.0	$2,194.3
Indoor Environments: Schools	$2,921.0	$9,946.7
Environmental Program & Management	$2,886.0	$9,119.2
Science & Technology	$35.0	$827.5
Information Technology Management	$22,963.2	$24,803.4
Environmental Program & Management	$19,065.7	$21,145.0
Hazardous Substance Superfund	$3,897.5	$3,658.4
International Capacity Building	$7,400.0	$10,400.0
Environmental Program & Management	$7,400.0	$10,400.0
Lake Champlain (CWAP)	$2,000.0	$1,000.0
Environmental Program & Management	$2,000.0	$1,000.0
Lead Risk Reduction Program	$16,911.3	$14,986.3
Environmental Program & Management	$16,911.3	$14,986.3
Leaking Underground Storage Tanks (LUST)Cooperative Agreements	$59,883.0	$58,700.7
Leaking Underground Storage Tanks	$59,883.0	$58,700.7
Long Island Sound (CWAP)	$900.0	$500.0
Environmental Program & Management	$900.0	$500.0
Mobile Sources	$47,824.5	$51,521.6
Science & Technology	$47,824.5	$51,521.6
Multilateral Fund	$11,362.0	$21,000.0
Environmental Program & Management	$11,362.0	$21,000.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
National Estuaries Program/Coastal Watersheds (CWAP)	$16,544.3	$17,048.8
Environmental Program & Management	$16,544.3	$17,048.8
National Nonpoint Source Program Implementation (CWAP)	$15,476.7	$15,198.8
Environmental Program & Management	$15,476.7	$15,198.8
National Program chemicals: PCBs, Asbestos, Fibers,and Dioxin	$3,011.9	$3,289.2
Environmental Program & Management	$3,011.9	$3,289.2
NEPA Implementation	$9,401.6	$9,697.7
Environmental Program & Management	$9,401.6	$9,697.7
New Chemical Review	$13,409.6	$13,926.9
Environmental Program & Management	$13,409.6	$13,926.9
New Construction :RTP New Building Project	$36,000.0	$49,070.0
Environmental Program & Management	$0.0	$5,241.0
Science & Technology	$0.0	$7,129.0
Building and Facilities	$36,000.0	$36,700.0
New Construction: New Headquaters Project	$15,945.3	$18,396.3
Environmental Program & Management	$8,367.3	$9,918.3
Building and Facilities	$5,520.0	$5,520.0
Hazardous Substance Superfund	$2,058.0	$2,958.0
NIEHS Superfund Support	$60,000.0	$48,526.7
Hazardous Substance Superfund	$60,000.0	$48,526.7
NPDES Program (CWAP)	$35,142.8	$46,338.8
Environmental Program & Management	$35,142.8	$46,338.8
Oil Spills Preparedness, Prevention and Response	$11,988.0	$12,437.5
Oil Spill Response	$11,988.0	$12,437.5
Other Federal Agency Superfund Support	$10,000.0	$11,035.0
Hazardous Substance Superfund	$10,000.0	$11,035.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Pacific Northwest (CWAP)	$713.6	$823.9
Environmental Program & Management	$713.6	$823.9
Particulate Matter Monitoring Network (non-grant)	$25,000.0	$14,613.0
Environmental Program & Management	$7,000.0	$6,613.0
Science & Technology	$18,000.0	$8,000.0
Particulate Matter Monitoring Network Grants	$50,700.0	$42,535.0
State and Tribal Assistance Grants	$50,700.0	$42,535.0
Particulate Matter Research	$55,656.8	$61,855.6
Science & Technology	$55,656.8	$61,855.6
Partnership with Industrial and Other Countries	$6,176.4	$8,234.0
Environmental Program & Management	$6,176.4	$8,234.0
Pesticide Applicator Certification and Training	$5,313.6	$6,765.6
Environmental Program & Management	$5,313.6	$6,765.6
Pesticide Registration+A62	$30,157.2	$34,687.1
Environmental Program & Management	$27,716.9	$32,812.2
Science & Technology	$2,440.3	$1,874.9
Pesticide Reregistration	$35,289.2	$38,102.7
Environmental Program & Management	$32,640.2	$36,091.8
Science & Technology	$2,649.0	$2,010.9
Rereg. & Exped. Proc. Rev Fund	$0.0	$0.0
Pesticide Residue Tolerance Reassessments	$9,540.8	$10,844.0
Environmental Program & Management	$9,429.7	$10,726.6
Science & Technology	$111.1	$117.4
Rereg. & Exped. Proc. Rev Fund	$0.0	$0.0
Pesticides Program Implementation Grant	$13,114.6	$13,114.6
State and Tribal Assistance Grants	$13,114.6	$13,114.6

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Pfiesteria (CWAP)	$2,500.0	$500.0
Environmental Program & Management	$2,500.0	$500.0
Planning and Resource Management	$69,120.1	$71,581.6
Environmental Program & Management	$41,098.4	$42,333.2
Leaking Underground Storage Tanks	$720.9	$694.9
Hazardous Substance Superfund	$27,300.8	$28,553.5
Pollution Prevention Incentive Grants to States	$5,999.5	$5,999.5
State and Tribal Assistance Grants	$5,999.5	$5,999.5
Pollution Prevention Program	$8,872.3	$9,581.2
Environmental Program & Management	$8,872.3	$9,581.2
Program Audits	$10,264.4	$10,509.6
Inspector General	$7,283.3	$7,528.5
Hazardous Substance Superfund	$2,981.1	$2,981.1
Program Integrity Investigations	$911.5	$927.8
Inspector General	$439.8	$456.1
Hazardous Substance Superfund	$471.7	$471.7
Project XL	$6,941.3	$7,143.1
Environmental Program & Management	$6,941.3	$7,143.1
RCRA Corrective Action	$18,167.4	$22,755.5
Environmental Program & Management	$18,167.4	$22,755.5
RCRA Permitting	$15,388.6	$16,773.0
Environmental Program & Management	$15,388.6	$16,773.0
RCRA State Grants	$98,598.2	$98,602.5
State and Tribal Assistance Grants	$98,598.2	$98,602.5
Recycling	$4,980.8	$5,079.3
Environmental Program & Management	$4,980.8	$5,079.3

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Regional Geographic Program	$8,070.6	$11,780.5
Environmental Program & Management	$8,070.6	$11,780.5
Regional Management	$42,535.0	$42,818.4
Environmental Program & Management	$30,303.6	$30,937.7
Hazardous Substance Superfund	$12,231.4	$11,880.7
Regional Program Infrastructure	$65,373.2	$71,556.0
Environmental Program & Management	$46,303.5	$53,414.1
Leaking Underground Storage Tanks	$310.3	$285.4
Oil Spill Response	$26.1	$26.2
Inspector General	$582.5	$0.0
Hazardous Substance Superfund	$18,150.8	$17,830.3
Regional Science and Technology	$6,021.0	$7,659.8
Environmental Program & Management	$2,923.1	$4,371.6
Hazardous Substance Superfund	$3,097.9	$3,288.2
Reinventing Environmental Information (REI)	$15,054.9	$34,783.3
Environmental Program & Management	$15,054.9	$34,783.3
Reinvention Programs, Development and Coordination	$4,334.1	$4,378.1
Environmental Program & Management	$4,334.1	$4,378.1
Risk Management Plans	$7,258.3	$11,804.6
Environmental Program & Management	$7,258.3	$11,804.6
Rural Water Technical Assistance	$13,050.0	$688.0
Environmental Program & Management	$13,050.0	$688.0
Safe Drinking Water Research	$47,728.1	$41,468.2
Science & Technology	$47,728.1	$41,468.2
SBREFA	$760.3	$777.3
Environmental Program & Management	$760.3	$777.3
Small Business Ombudsman	$1,110.3	$1,120.3

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Environmental Program & Management	$1,110.3	$1,120.3
Small, Minority, Women-Owned Business Assistance	$2,064.4	$2,338.4
Environmental Program & Management	$2,064.4	$2,338.4
Source Reduction	$2,728.8	$3,073.4
Environmental Program & Management	$2,728.8	$3,073.4
Source Water Protection (CWAP-related activity)	$11,685.8	$11,501.9
Environmental Program & Management	$11,685.8	$11,501.9
South Florida/Everglades (CWAP)	$3,099.3	$3,084.6
Environmental Program & Management	$3,099.3	$3,084.6
State Nonpoint Source Grants (CWAP)	$200,000.0	$200,000.0
State and Tribal Assistance Grants	$200,000.0	$200,000.0
State PWSS Grants	$93,780.5	$93,780.5
State and Tribal Assistance Grants	$93,780.5	$93,780.5
State Pesticides Enforcement Grants	$19,511.4	$19,911.6
State and Tribal Assistance Grants	$19,511.4	$19,911.6
State Pollution Control Grants (Section 106) (CWAP)	$115,529.3	$115,529.3
State and Tribal Assistance Grants	$115,529.3	$115,529.3
State Radon Grants	$8,158.0	$8,158.0
State and Tribal Assistance Grants	$8,158.0	$8,158.0
State Toxics Enforcement Grants	$7,364.2	$7,364.2
State and Tribal Assistance Grants	$7,364.2	$7,364.2
State Underground Injection Control Grants	$10,500.0	$10,500.0
State and Tribal Assistance Grants	$10,500.0	$10,500.0
State Water Quality Cooperative Agreements (CWAP)	$19,000.0	$19,000.0
State and Tribal Assistance Grants	$19,000.0	$19,000.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
State Wetlands Program Grants (CWAP)	$15,000.0	$15,000.0
State and Tribal Assistance Grants	$15,000.0	$15,000.0
Superfund - Cost Recovery	$30,494.1	$30,494.1
Hazardous Substance Superfund	$30,494.1	$30,494.1
Superfund - Justice Support	$29,000.0	$28,663.5
Hazardous Substance Superfund	$29,000.0	$28,663.5
Superfund - Maximize PRP Involvement (including reforms)	$89,473.6	$89,234.5
Hazardous Substance Superfund	$89,473.6	$89,234.5
Superfund Remedial Actions	$588,190.0	$592,842.5
Hazardous Substance Superfund	$588,190.0	$592,842.5
Superfund Removal Actions	$199,419.1	$207,399.9
Hazardous Substance Superfund	$199,419.1	$207,399.9
Sustainable Development Challenge Grants	$4,701.8	$4,714.8
Environmental Program & Management	$4,701.8	$4,714.8
Toxic Release Inventory / Right-to-Know (RtK)	$19,799.6	$18,811.5
Environmental Program & Management	$19,799.6	$18,811.5
Tribal Capacity	$3,812.7	$3,894.9
Environmental Program & Management	$3,812.7	$3,894.9
Tribal General Assistance Grants	$42,585.4	$42,585.4
State and Tribal Assistance Grants	$42,585.4	$42,585.4
Tropospheric Ozone Research+A82	$20,083.4	$7,217.9
Science & Technology	$20,083.4	$7,217.9
UIC Program	$11,744.7	$11,815.9
Environmental Program & Management	$11,744.7	$11,815.9

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
Underground Storage Tanks (UST)	$6,077.9	$6,345.3
Environmental Program & Management	$6,077.9	$6,345.3
Urban Environmental Quality and Human Health	$0.0	$3,395.0
Environmental Program & Management	$0.0	$3,395.0
U.S. - Mexico Border	$4,929.4	$5,056.3
Environmental Program & Management	$4,929.4	$5,056.3
UST State Grants	$10,544.7	$11,944.7
State and Tribal Assistance Grants	$10,544.7	$11,944.7
Waste Combustion	$7,346.7	$7,297.7
Environmental Program & Management	$7,346.7	$7,297.7
Waste Minimization	$2,195.3	$2,943.2
Environmental Program & Management	$2,195.3	$2,943.2
Water Infrastructure: Alaska Native Villages	$30,000.0	$15,000.0
State and Tribal Assistance Grants	$30,000.0	$15,000.0
Water Infrastructure:Boston Harbor	$50,000.0	$0.0
State and Tribal Assistance Grants	$50,000.0	$0.0
Water Infrastructure:Bristol County	$2,610.0	$3,000.0
State and Tribal Assistance Grants	$2,610.0	$3,000.0
Water Infrastructure:Clean Water State Revolving Fund (CW-SRF)	$1,350,000.	$800,000.0
State and Tribal Assistance Grants	$1,350,000.	$800,000.0
Water Infrastructure:Drinking Water State Revolving Fund (DW-SRF)	$775,000.0	$825,000.0
State and Tribal Assistance Grants	$775,000.0	$825,000.0
Water Infrastructure:Mexico Border	$50,000.0	$100,000.0
State and Tribal Assistance Grants	$50,000.0	$100,000.0
Water Infrastructure:New Orleans	$6,525.0	$10,000.0

Key Programs by Appropriation
(Dollars in Thousands)

	FY 1999 Enacted	FY 2000 Request
State and Tribal Assistance Grants	$6,525.0	$10,000.0
Water Quality Criteria and Standards (CWAP)	$17,842.5	$22,280.7
Environmental Program & Management	$17,842.5	$22,280.7
Watershed Research	$8,376.1	$8,478.6
Science & Technology	$8,376.1	$8,478.6
Wetlands (CWAP)	$16,110.6	$18,124.5
Environmental Program & Management	$16,110.6	$18,124.5

STATE and TRIBAL ASSISTANCE GRANTS
(Dollars in Thousands)

Grant	FY 1998 ENACTED	FY 1999 ENACTED	FY 2000 PRES BUD
Air & Radiation			
State and Local Assistance	$181,933.0	$195,533.0	$198,690.0
Tribal Assistance	$10,168.8	$11,068.8	$11,068.8
Radon	$8,158.0	$8,158.0	$8,158.0
	$200,259.8	$214,759.8	$217,916.8
Water			
Pollution Control (Section 106)	$95,529.3	$115,529.3	$115,529.3
Nonpoint Source	$105,000.0	$200,000.0	$200,000.0
Wetlands Program	$15,000.0	$15,000.0	$15,000.0
Water Quality Cooperative Agrmts	$20,000.0	$19,000.0	$19,000.0
	$235,529.30	$349,529.3	$349,529.3
Drinking Water			
PWSS	$93,780.5	$93,780.5	$93,780.5
UIC	$10,500.0	$10,500.0	$10,500.0
	$104,280.5	$104,280.5	$104,280.5
Hazardous Waste			
H.W. Financial Assistance	$98,598.2	$98,598.2	$98,598.2
Underground Storage Tanks	$10,544.7	$10,544.7	$11,944.7
	$109,142.9	$109,142.9	$110,542.9
Pesticides & Toxics			
Pesticides Program Implementation	$13,114.6	$13,114.6	$13,114.6
Lead Grants	$13,712.2	$13,712.2	$13,712.2
	$26,826.8	$26,826.8	$26,826.8
Multimedia			
Pollution Prevention	$5,999.5	$5,999.5	$5,999.5
Pesticides Enforcement	$17,511.6	$19,511.7	$19,911.6
Toxics Enforcement	$6,864.2	$7,364.2	$7,364.2
Indian General Assistance Program	$38,585.4	$42,585.3	$42,585.4
	$68,960.7	$75,460.7	$75,860.7
TOTALS	**$745,000.0**	**$880,000.0**	**$884,957.0**

NOTE: FY 2000 Straw is $2.8 M less than FY 1999 Pres Bud.
(+$ 5.4 M various Tribal grants - $ 8.2 M Air Grants)

1 - Increase for PM Fine Grant ($4 M)
2 - Decrease to hit FY 98 OMB Tribal Grant target - $11,300 K - $250 K = $11,050 K)
3 - Increase for TMDLs
4 - Increase for New Legislation (FQPA Compliance State Grants)
5 - Increase for all Indian grants (+$11,050 K from OMB Passback plus +$20,000 K from $79 M from Deputy Administrator)

U. S. Environmental Protection Agency
Object Classification
(Dollars in Millions)

	Account and Object Class	Actuals 1998	Estimate 1999	Request 2000
Science and Technology				
	Direct obligations			
	Personnel compensation	183	182	199
12.10	Travel and transportation of persons	6	5	5
12.20	Transportation of things	1	1	1
12.33	Communications, utilities, and miscellaneous charg	5	5	5
12.40	Printing and reproduction	1	1	1
12.51	Advisory and assistance services	6	7	7
12.52	Other services	26	124	17
12.53	Purchases of goods and services from Government	43	75	45
12.54	Operation and maintenance of facilities	10	11	11
12.55	Research and development contracts	68	75	70
12.57	Operation and maintenance of equipment	20	22	20
12.60	Supplies and materials	10	11	10
13.10	Equipment	28	30	30
14.10	Grants, subsidies, and contributions	220	235	221
19.90	Subtotal, Direct obligations	627	784	642
	Reimbursable obligations	53	50	47
	TOTAL OBLIGATIONS	680	834	689
Oil Spill Response				
	Direct obligations			
	Personnel Compensation	6	8	9
12.31	Rental payments to GSA	1	1	1
12.52	Other services	6	2	2
12.53	Purchases of goods and services from Government	1	1	1
12.55	Research and development contracts	1	1	1
14.10	Grants, subsidies, and contributions	2	2	2
19.90	Subtotal, Direct obligations	17	15	16
	Reimbursable obligations	25	40	40
	TOTAL OBLIGATIONS	42	55	56

U. S. Environmental Protection Agency
Object Classification
(Dollars in Millions)

	Account and Object Class	Actuals 1998	Estimate 1999	Request 2000
Environmental Programs and Management				
	Direct obligations			
	Personnel compensation	830	1001	1052
12.10	Travel and transportation of persons	28	22	28
12.20	Transportation of things	2	2	2
12.31	Rental payments to GSA	106	112	116
12.32	Rental payments to others	12	21	22
12.33	Communications, utilities, and miscellaneous charg	13	10	10
12.40	Printing and reproduction	10	8	8
12.51	Advisory and assistance services	39	31	32
12.52	Other services	353	416	408
12.53	Purchases of goods and services from Government	83	66	68
12.54	Operation and maintenance of facilities	15	12	12
12.55	Research and development contracts	1	1	1
12.57	Operation and maintenance of equipment	31	24	25
12.60	Supplies and materials	12	9	9
13.10	Equipment	42	33	34
14.10	Grants, subsidies, and contributions	270	213	220
19.90	Subtotal, Direct obligations	1847	1981	2047
	Reimbursable obligations	36	80	79
	Below reporting threshold	1	1	1
	TOTAL OBLIGATIONS	1884	2062	2127
Working Capital Fund				
	Reimbursable obligations			
21.11	Full-time permanent	4	4	4
21.21	Civilian personnel benefits	1	1	1
22.20	Transportation of things	2	1	1
22.33	Communications, utilities, and miscellaneous charg	22	22	22
22.52	Other services	17	31	16
22.57	Operation and maintenance of equipment	52	52	52
23.10	Equipment	12	10	10
	TOTAL OBLIGATIONS	110	121	106

U. S. Environmental Protection Agency
Object Classification
(Dollars in Millions)

	Account and Object Class	Actuals 1998	Estimate 1999	Request 2000
Hazardous Substance Superfund				
	Direct obligations			
	Personnel compensation	240	317	256
12.10	Travel and transportation of persons	11	10	12
12.20	Transportation of things	1	1	1
12.31	Rental payments to GSA	30	29	30
12.32	Rental payments to others	3	5	5
12.33	Communications, utilities, and miscellaneous charg	5	5	5
12.40	Printing and reproduction	0	0	1
12.51	Advisory and assistance services	11	10	11
12.52	Other services	239	668	272
12.53	Purchases of goods and services from Government	498	470	500
12.54	Operation and maintenance of facilities	4	4	4
12.55	Research and development contracts	4	4	4
12.57	Operation and maintenance of equipment	8	8	8
12.60	Supplies and materials	4	4	4
13.10	Equipment	21	20	20
14.10	Grants, subsidies, and contributions	206	195	206
14.20	Insurance claims and indemnities	9	8	11
19.90	Subtotal, Direct obligations	1294	1758	1349
	Allocation Account			
31.11	Full-time permanent	21	23	23
31.21	Civilian personnel benefits	6	7	6
32.10	Travel and transportation of persons	2	3	2
32.31	Rental payments to GSA	1	1	1
32.52	Other services	27	30	29
32.60	Supplies and materials	1	1	1
33.10	Equipment	1	1	1
34.10	Grants, subsidies, and contributions	80	87	86
39.90	Subtotal, Allocation Account	139	153	149
	Below reporting threshold	1	0	2
	Reimbursable obligations	90	300	300
	TOTAL OBLIGATIONS	1524	2211	1800

U. S. Environmental Protection Agency
Object Classification
(Dollars in Millions)

	Account and Object Class	Actuals 1998	Estimate 1999	Request 2000
LUST Trust Fund				
	Direct obligations			
	Personnel Compensation	5	6	5
12.31	Rental payments to GSA	1	1	1
12.52	Other services	1	1	1
12.55	Research and development contracts	1	1	1
14.10	Grants, subsidies, and contributions	56	66	64
19.90	Subtotal, Direct obligations	64	75	72
99.95	Below reporting threshold	1	0	0
	TOTAL OBLIGATIONS	65	75	72
State and Tribal Assistance Grants				
	Direct obligations			
12.52	Other services	5	5	5
12.53	Purchases of goods and services from Government	21	20	20
14.10	Grants, subsidies, and contributions	3397	4542	2813
	TOTAL OBLIGATIONS	3423	4567	2838
Office of Inspector General				
	Direct obligations			
	Personnel compensation	24	27	24
12.10	Travel and transportation of persons	2	2	1
12.31	Rental payments to GSA	3	1	2
12.53	Purchases of goods and services from Government	2	2	2
13.10	Equipment	1	1	0
19.90	Subtotal, Direct obligations	32	33	29
	Reimbursable obligations	12	12	11
	TOTAL OBLIGATIONS	44	45	40

U. S. Environmental Protection Agency
Object Classification
(Dollars in Millions)

	Account and Object Class	Actuals 1998	Estimate 1999	Request 2000
Buildings and Facilities				
	Direct obligations			
12.54	Operation and maintenance of facilities	12	8	26
13.20	Land and structures	105	69	37
	TOTAL OBLIGATIONS	117	77	63