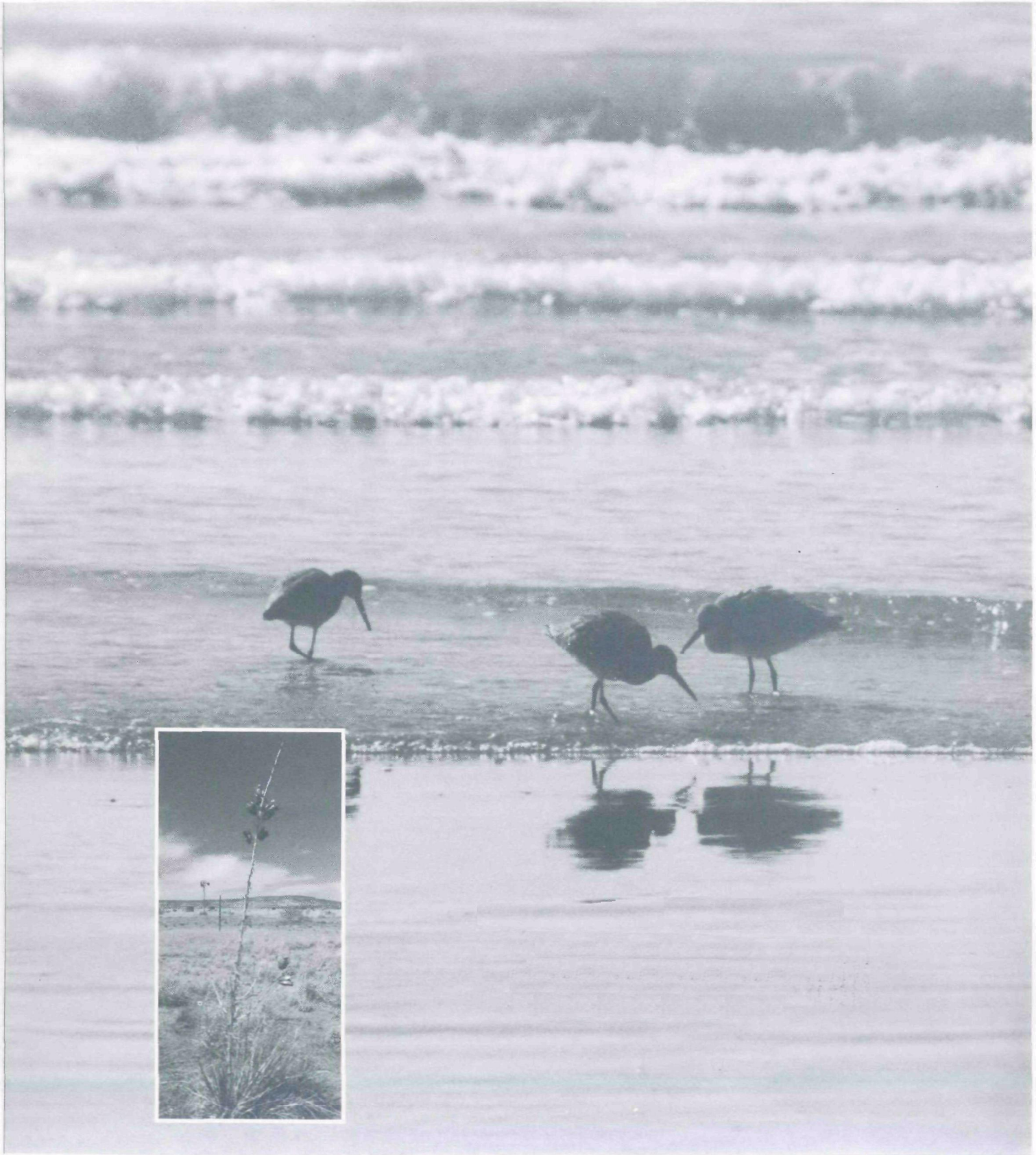




FY 1999 Final Annual Plan



U.S. Environmental Protection Agency
FY 1999 Final Annual Plan
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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 1999 Final Annual Plan 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 presented its FY 1999 budget as its Annual Plan. While the initial FY 1999 Annual Plan represented the President's Budget Request, the FY 1999 Final Annual Plan reflects the Agency's enacted budget.

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 in measurable and quantifiable form the intermediate 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.

GOAL CHAPTERS

The FY 1999 Final Annual Plan is organized by the Agency's 10 Strategic Goals. Within each Goal chapter, you will find the following sections:

- **Background and Context:** Sets the broad context for the Goal and briefly explains why the Goal is of National importance.
- **Means and Strategy:** Describes the Agency's approach to achieving the strategic Goal.
- **Resource Summary:** Provides a broad overview of the resources for FY 1999 by Goal, Objective, and Appropriation.
- **Strategic Objective:** Includes all the Objectives under each Goal and links the Objectives with:
- **Key Programs:** Resources levels are listed for Key Programs which help to achieve the Objective. The Key Programs do not account for all resources in the Objective.
- **Annual Performance Goals and Measures:** Objective sections contain "*Congressional*" *Annual Performance Goals*, which are commitments by the Agency to Congress to achieve certain levels of performance. The accompanying *Performance Measures* provide the means for determining the extent to which annual goals and multi-year objectives are achieved.
- **External Factors:** This section addresses the external-Agency factors that could have a substantial impact on the achievement of the Annual Performance Goals. External factors may include the 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.

- **Verification and Validation:** 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.

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 in this Annual Performance Plan are based upon the resource levels in the Agency's enacted FY 1999 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 1999 activities will contribute to completion of work in FY 1999 or beyond. Likewise, some FY 1999 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.

Annual Plan Overview

For over 25 years, the Environmental Protection Agency 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 EPA's plan for FY 1999 builds on that success and invests in programs that deliver consistently better environmental protection at less cost. The EPA's FY 1999 Final Annual Plan highlights significant programs and activities the Agency will undertake with its enacted budget of \$7.590 billion and 18,385 FTE.

This Annual Plan represents the EPA's new approach to planning and budgeting, which links goals and objectives to the human, capital, and technological resources required to achieve them. The EPA's FY 1999 Final Annual Plan is another step forward in the Agency's full participation in the Government Performance and Results Act (GPRA), which is designed to increase the effectiveness and accountability of Federal Agencies.

KEY PROGRAMS AND INITIATIVES

The EPA is committed to providing the greatest degree of environmental protection at the lowest possible cost and regulatory burden to citizens and businesses. The Agency has several key initiatives which are designed to address environmental risks effectively while maintaining the Administration's commitment to a strong economy and a streamlined Federal government.

Many of these initiatives are supported across the Agency and involve a number of strategic goals and objectives. They all work to support the Agency's mission to reduce risk to human health and safeguard the environment for future generations.

ENSURE CLEAN AND SAFE WATER

The President has made the protection of America's water supply and waterways a national priority. To meet this commitment, the FY 1999 enacted budget supports the Agency's involvement in the Clean Water Action Plan as well as strong support for the Nation's water infrastructure through State Revolving Funds:

- Clean Water Action Plan: The EPA will play a key role in the Clean Water Action Plan (CWAP), focusing on three challenges to restore and protect the Nation's waterways: preventing polluted runoff; protecting public health; and ensuring community-based watershed management. This initiative is funded in the Agency's Annual Plan at \$605 million. The Agency also provides for an additional \$20 million in CWAP related activities such as source water protection, the

Index of Watershed Indicators, and research.

This initiative increases grants to States to implement water quality improvement projects as well as other Agency activities such as the restoration and protection of our Nation's wetlands.

- Upgrading the Nation's Water Quality Infrastructure: The budget proposes \$775 million in capitalization grants for Drinking Water State Revolving Funds (SRFs), which make low-interest loans to help municipalities meet the requirements of the Safe Drinking Water Act Amendments. The funds will help ensure that Americans have a safe, clean drinking water supply -- our first line of defense in protecting public health. The budget also include \$1.350 billion in capitalization grants to Clean Water SRFs to help municipalities comply with the Clean Water Act, thus helping to reduce beach closures and keep our

waterways safe and clean. The combined SRF proposal, with continued outyear capitalization, will meet the Administration's long-term goal to provide about \$2.5 billion a year in loans to needy communities.

MEETING THE GLOBAL WARMING CHALLENGE

The United States has made a commitment to lead the world in reducing greenhouse gas emissions through market forces, new technology and energy efficiency. The *Climate Change Technology Initiative (CCTI)*, funded in the EPA's budget at \$109.5 million in FY 1999, will help America continue to meet its global responsibility to lead the world in emissions reductions. CCTI is an inter-agency initiative led by EPA and the Department of Energy to support research and technology advancements in energy efficiency, renewable energy, and carbon-reduction technologies.

IMPLEMENTING STRONGER CLEAN AIR STANDARDS

This budget invests \$65.7 million in a national network of Particulate Matter Monitors to help the Nation meet the health based air quality standard for fine particles. This investment level honors the Administration's commitment to States to fund the costs of deploying a new fine particulate monitoring network and to provide them the tools necessary to carry out their monitoring efforts. The EPA will also be conducting analyses to determine the chemical constituents of PM 2.5 and better identify and understand the sources and characteristics of the pollution. This effort will lead to cleaner, safer air for all Americans.

PROTECTING HUMAN HEALTH

One of the President's foremost policy concerns is the protection of human health through the reduction of environmental threats. To reduce environmental threats and protect future generations, the Agency focuses on areas where it can provide the greatest amount of protection, such

as the cleanup of toxic waste sites and the protection of children from toxins in the environment.

- Cleaning up Toxic Waste Sites: The budget continues a commitment to clean up toxic waste sites with \$1.5 billion for Superfund cleanups. Combined with continuing administrative reforms, these funds will help meet the President's pledge to clean up the most hazardous waste sites.
- Focusing on Health Risks to Children: The Agency has made the protection of children's health a fundamental goal of public health and environmental protection in the U.S. This annual plan builds on that commitment with a \$33 million investment (an \$8 million increase over 1998) for the Assessing Health Risks to Children Agenda. This is a high-priority for the Agency since children face significant and unique health threats because they are often more heavily exposed and more vulnerable than adults to toxins in the environment. When we protect the health of children, we protect the health of all Americans. Major activities include establishing, with HHS, five Children's Environmental Research Centers, ensuring that EPA's public health regulations consider children's health, and providing information to parents to better protect their children from environmental hazards.
- Reducing Risks Posed by Persistent, Bioaccumulative, and Toxic Pollutants: The Agency is strengthening its efforts to address the health threat presented by persistent, bioaccumulative, and toxic (PBT) pollutants. This initiative is funded at \$9.3 million in the 1999 Revised Annual Plan (a \$6.3 million increase over 1998). The Agency will conduct research and coordinate strategies to reduce the risks posed by PBTs using the full range of regulatory, voluntary, programmatic, enforcement, compliance and research tools. PBT risk mitigation activities will

include analysis of economic impact, pollution prevention strategies, exploration of safe substitute chemical alternatives and dissemination of public information. This multi-year initiative will reduce PBTs in the environment and reduce the risks these toxins pose to human health.

INVESTING IN SCIENCE FOR SOUND DECISION-MAKING

Environmental research is critical for developing the scientific understanding and technological tools to allow the Nation to enhance environmental quality for current and future generations. The Agency's FY 1999 enacted budget includes \$562 million for EPA's Office of Research and Development (ORD). This investment will provide a scientific basis for developing cost-effective environmental policies, create the knowledge base for citizens to make wise environmental decisions, and enable new and better approaches to environmental protection.

REVITALIZING COMMUNITIES THROUGH THE BROWNFIELDS INITIATIVE

The FY 1999 enacted 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 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.

STRENGTHENING PARTNERSHIPS WITH INDIAN TRIBES

This Annual Plan continues the Agency's commitment to carrying out its trust responsibilities to Federally-recognized tribes with a budget of \$174 million (a \$35 million increase over 1998). The Indian Program includes cross-Agency activities

designed to ensure the protection of public health and the tribal homeland environment in a manner consistent with a government-to-government relationship. The Indian Program is a priority for the Agency because the sub-standard environmental conditions of many tribal homelands pose threats to human health, Tribal economies, and ecosystems. The program will enhance environmental protection by increasing the number of partnerships with tribal governments, providing infrastructure assistance, and helping to resolve trans-boundary environmental issues.

IMPROVING PUBLIC ACCESS TO INFORMATION

All U.S. citizens have a right to know about the pollutants in their environment -- including the condition of the air they breathe and the water they drink, as well as the health effects of the chemicals used in the food and products they buy. Access to environmental information also helps make American citizens involved and informed environmental decision makers, and promotes creative and lasting solutions to environmental problems. EPA's participation in the President's Environmental Monitoring for Public Access and Community Tracking (EMPACT) initiative, funded at \$14 million in this Annual Plan, helps to carry out this commitment to provide the public with crucial information on environmental conditions.

SUMMARY

The EPA's 1999 Final Annual Plan embodies the Agency's commitment to protect human health and safeguard the environment, while continuing on the nation's path of unprecedented economic growth. As the Agency strengthens its relationships with the public, the regulated community, and its governmental partners, it will provide a more effective and efficient system of environmental protection. These partnerships, along with a commitment to identify and solve the Nation's most pressing environmental problems, will help us leave a cleaner, safer environment for generations to come.

Strategic Goal: 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.

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

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. Exacerbates respiratory illness especially in active children, aggravates respiratory illnesses such as asthma and causes damage to vegetation and visibility problems.
- Carbon monoxide. Interferes with the delivery of oxygen to body tissues, affecting particularly people with cardiovascular diseases.
- Sulfur dioxide. Aggravates the symptoms of asthma and is a major contributor to acid rain.
- Nitrogen oxides. 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, respiratory illness in children; affects the environment through visibility impairment.

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 (CAA) lists 188 pollutants or chemical groups as hazardous air pollutants and targets sources emitting them for regulation.

Examples of air toxics include heavy metals like 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 air sheds.

Compared to information for the criteria pollutants, the information concerning potential health effects of the 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 referenced previously, almost 60 percent are classified by EPA as known, probable or possible carcinogens.

Some Maximum Achievable Control Technology (MACT) standards, particularly the coating rules, typically achieve concurrent reduction in both Volatile Organic Compounds (VOC) and HAP emissions. The standards reduce the emissions created by evaporation of solvents from the coatings and these solvents often contain both HAP and VOC. Air toxic and particulate matter

pollution share common sources. In some cases particulates are also hazardous air pollutants.

One of the more documented ecological concerns associated with toxic air pollutants is the potential for some to damage aquatic ecosystems. In some cases, deposited air pollutants can be significant contributors to overall pollutant loadings entering water bodies.

The Clean Air Act Amendments of 1990 established an emissions trading program to control emissions from electric power plants that cause acid rain and other environmental and public health problems. Emissions of sulfur dioxide (SO₂) and nitrogen oxide (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, SO₂ 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 (1988-1996)

	Air Quality Concentration % Change 1987-1996	Emissions % Change 1987-1996
Carbon Monoxide (CO)	-37%	-18%
Lead	-75%	-50%
Nitrogen Oxides (NO _x)	-10%	+3%
Ozone (VOC)	-15%	-18%
PM ₁₀ *	-25%	-12% ⁺
Sulfur Dioxide SO _x	-37%	-14%

SOURCE: National Air Quality and Emissions Trend Report, 1996.

* Based on 1988 to 1996 data.

⁺ Includes only directly emitted particles. Secondary PM formed from SO_x, NO_x, and other gases comprises a significant fraction of ambient PM.

The above table 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.

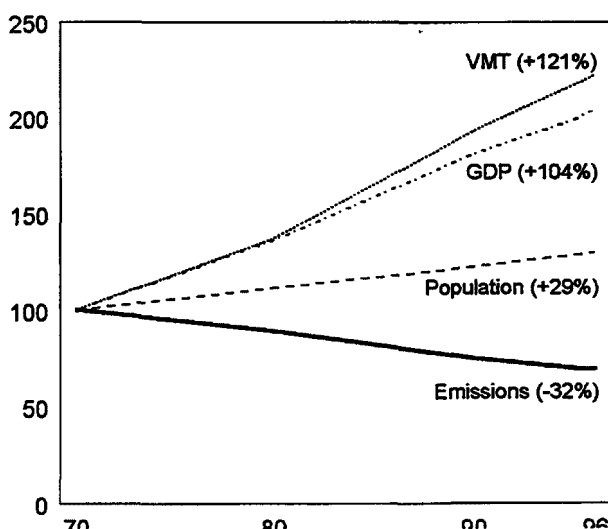
Nationally, the 1996 air quality levels are the best on record for all six criteria pollutants. In fact, all the years in the 1990s have had better air quality than all the years in the 1980's, showing a steady trend of improvement.

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.

While progress has been made, it is important to not lose sight of the magnitude of the air pollution problem that still remains. Based upon monitoring data submitted to EPA's data base, approximately 46 million people in the United

States reside in counties that did not meet the air quality standard for at least one of the National Ambient Air Quality Standards (NAAQS) pollutants for the single year 1996.

Percent of 1970 Value



Above: Total U.S. population, vehicle miles traveled, U.S. gross domestic product, and aggregate emissions, 1970-1996.

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 also lays out a specific roadmap for achieving those goals - what we the Agency and our partners -- states and tribes -- 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 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 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 for ozone and fine particles, and we believe it will take more than an individual state's efforts to achieve the needed emission reductions. We will work with states and tribes 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 giving states the time to identify measures that will get them 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 the NO_x Trading program to build on the Acid Rain program to help states and localities reduce emissions at the lowest cost.
- Fostering technical innovation 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 the Clean Air Act: public outreach to educate people on the air problems and encourage them to work to solve them; Ozone Transport Assessment Group (OTAG)-type groups 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 Regulatory Negotiations to bring in many interested parties to work on a problem and address a specific regulatory issue.

Research

The Agency is seeking to understand further the root causes of the air toxics environmental and human health problems in urban areas, 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 to 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 will also work with states/locals and tribes to ensure that work they are doing on the PM and ozone standards effectively targets both pollutants, as well as regional haze, to maximize 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 locals to develop strategies to meet the standards.

STATUTORY AUTHORITY

Clean Air Act (CAA) and Amendments

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Clean Air	\$525,639.6	\$536,368.0
Attain NAAQS for Ozone and PM	\$361,648.7	\$384,863.2
EPM	\$86,102.3	\$81,847.5
S&T	\$128,926.6	\$147,060.1
STAG	\$146,619.8	\$155,955.6
Reduce Emissions of Air Toxics	\$97,546.9	\$90,700.3
EPM	\$52,651.7	\$46,904.8
S&T	\$22,800.7	\$21,551.4
STAG	\$22,094.5	\$22,244.1
Attain NAAQS for CO, SO ₂ , NO ₂ , Lead	\$44,878.2	\$42,184.1
EPM	\$16,750.5	\$17,276.4
S&T	\$113.2	\$113.2
STAG	\$28,014.5	\$24,794.5
Acid Rain	\$21,565.8	\$18,620.4
EPM	\$13,035.8	\$11,010.7
S&T	\$4,000.0	\$4,002.1
STAG	\$4,530.0	\$3,607.6
Total Workyears:	1,777.1	1,762.3

Strategic Objective: Attain NAAQS for Ozone and PM

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Particulate Matter Monitoring Network (non-grant)	\$25,000	\$25,000
Particulate Matter Monitoring Network Grants	\$50,700	\$50,735
Air, State, Local and Tribal Assistance Grants: Other Air Grants	\$95,920	\$155,867
Mobile Sources	\$54,824	\$45,975
Sustainable Development Challenge Grants	\$7,687	\$0
*resources moved to Goal 8/Office of the Administrator in FY1999 enacted		
Urban Environmental Quality and Human Health	\$440	\$0
EMPACT	\$3,537	\$2,622
Tribal Capacity	\$3,813	\$3,813
Research: Tropospheric Ozone Research	\$19,763	\$20,083
Research: Particulate Matter Research	\$37,587	\$55,657

Annual Performance Goals and Measures

ONE-HOUR OZONE STANDARD REVOKED

By 1999: 8 additional areas currently classified as non-attainment will have the 1-hour ozone standard revoked because they meet the old standard.

Performance Measures:	Target:
Publish Notice Revoking 1-Hour Standard	8 Areas
National Guidance on Ozone SIP	1 Issued
States submit designations of areas for attainment of the ozone standards	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 1998, as indicated in the 1997 air quality trends report, 38 areas were in non-attainment. The trends are updated each year with a one-year lag time (i.e., the 2000 information will be available in 2002).

PM-2.5 MONITORS

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

Performance Measures:	Target:
National Guidance on PM-2.5 SIP and Attainment Demonstration Requirements.	1 Issued
Cumulative total number of monitoring sites deployed.	1500 sites

Baseline: The Agency began working with the states to develop a PM-2.5 monitoring network in 1997 with the first monitors put in place in 1998.

RESEARCH: PM HEALTH EFFECTS

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

Performance Measures:	Target:
Reports (1) describing research designed to test a hypothesis about mechanisms of PM-induced toxicity; 2) characterize factors affecting PM dosimetry in humans; 3) ID PM characteristics (composition) .	30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Reduce Emissions of Air Toxics

Key Programs

(Dollars in Thousands)

	99 Pres Bud	99 Enacted
Air, State, Local and Tribal Assistance Grants: Other Air Grants	\$22,095	\$22,244
Federal Air Toxics Standards	\$26,863	\$14,092
Mobile Sources	\$1,768	\$1,736
EMPACT	\$205	\$172
Research: Air Toxics Research	\$21,015	\$19,682

Annual Performance Goals and Measures

AIR TOXIC EMISSIONS

By 1999: Reduce air toxic emissions by 12% in FY 1999, resulting in a cumulative reduction of 25% from 1993 levels.

Performance Measures:

Target:

Obtain data for building the 1999 National Toxics Inventory

1 Inventory

Air Toxics Emissions reduced from 1993

25 Percent

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. We revise air toxics emission data every three years to generate inventories for 1993, 1996, 1999, etc with a lag time of approximately two years (i.e., the 1999 inventory will be available in 2001).

RESEARCH: HEALTH ASSESSMENTS

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

Performance Measures:**Target:**

Complete four toxicological reviews and assessments (RfC, RfD, cancer unit risks) of high priority to the Air Program 5 Assessments

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Attain NAAQS for CO, SO₂, NO₂, Lead***Key Programs***

(Dollars in Thousands)

	99 Pres Bud	99 Enacted
Air, State, Local and Tribal Assistance Grants: Other Air Grants	\$28,015	\$24,795
Mobile Sources	\$113	\$113

Annual Performance Goals and Measures**NAAQS**

By 1999: Certify that 14 of the 58 estimated remaining non-attainment areas have achieved the NAAQS for carbon monoxide, sulfur dioxide, or lead.

Performance Measures:**Target:**

Regions take Final Action on CO Re-designation

7 Final Actions

Regions take Final Action on SO₂ Re-designation

5 Final Actions

Regions take Final Action on Pb Re-designation

2 Final Actions

Baseline: As a result of the Clean Air Act Amendments of 1990, 48 areas were designated as non-attainment of the CO standard. In 1996, as indicated in the most recent air trends report, 29 areas were non-attainment. Six areas have been re-designated during 1997-1998. The air quality trends data is updated each year with a one-year lag time (i.e., the 2000 information will be available in 2002). As a result of the Clean Air Act Amendments of 1990, 54 areas were designated as non-attainment of the SO₂ standard. In 1996, as indicated in the most recent trends, 34 areas were non-attainment. The air quality trends data is updated each year with a one-year lag time (i.e., the 2000 information will be available in 2002). As a result of the Clean Air Act Amendments of 1990, 13 areas were designated as non-attainment of the lead standard. In 1996, as indicated in the most recent air trends report, 10 areas were in non-attainment. The air quality trends data is updated each year with a one-year lag time (i.e., the 2000 information will be available in 2002). There is one area in non-attainment for NO_x.

Strategic Objective: Acid Rain

Key Programs

(Dollars in Thousands)

	99 Pres Bud	99 Enacted
Air, State, Local and Tribal Assistance Grants: Other Air Grants	\$4,530	\$3,608
Acid Rain -Program Implementation	\$3,502	\$9,951
Acid Rain -CASTNet	\$4,000	\$4,000

Annual Performance Goals and Measures

EMISSIONS REDUCTION

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

Performance Measures:

Target:

SO₂ Emissions

4,000,000 Tons Reduced

NO_x Reductions

300,000 Tons Reduced

Baseline: The base of comparison for assessing progress on the 2000 annual performance goals is emissions levels before implementation of Title IV of the Clean Air Act Amendments in 1990. Emissions levels that would have resulted without implementation of Title IV of the CAAA were based on projection inventories of NO_x emissions assuming growth without controls.

EXTERNAL FACTORS

Federal and state government 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 a strong partnership between the states and EPA. States will play a pivotal role by providing information and working with EPA on standard setting.

A variable that we have to consider in developing programs to achieve the Clean Air goal is the weather. In developing their clean air strategies, states and locals consider the normal meteorological patterns. However, a hot, dry summer may prevent areas from gaining the three full years of clean air data needed to gain attainment.

Additionally, clean air strategies attempt to predict changing demographics, transportation patterns, impacts of urban sprawl and industrial demands; an increase or large shift in any of these areas can significantly impact air quality.

Accomplishing the Acid Rain objective's target for a decrease in ambient concentration and deposition of nitrates assumes that other sources of nitrogen oxides (e.g. 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.

Because air pollution crosses local and state lines and in some cases, crosses our borders with Canada and Mexico, the problems are both national and international in scope. Successfully achieving clean air goals will require extensive multi-state and even multi-country planning, coordination and implementation efforts.

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 30 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.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

Attain NAAQS for Ozone and PM

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 AIRS Air Quality Subsystem are used to determine if non-attainment areas have the requisite three years of clean air data needed for re-designation. The National Emission Trends database is 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 re-designation 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 three criteria pollutants: Volatile Organic Compounds (VOC), CO and NO_x for each of the categories of vehicles 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 State Implementation Plans (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 Inspection/maintenance (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 programs and completion of the National Highway System Designation Act (NHSDA) program evaluations.

For the Reformulated Fuels Gasoline (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.

Quality Assurance/Quality Control (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 the Federal Reference Method Performance Evaluation Program, co-located 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) provides consistent methods of estimating emissions data and developed consistent quality assurance methods for use by the states to 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. 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, and protocols, the 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 American Society for Testing and Materials (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.

The Office of Research and Development Management Information System (OMIS) will be another accountability tool used to monitor and track performance measures. The GPRA structure will be incorporated into OMIS to ensure consistent maintenance and reporting, resulting in greater accuracy and consistency of information to users.

Reduce Emissions of Air Toxics

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 ten 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 techniques include material balances, and emission factors (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 ten-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.

QA/QC Procedures

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 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 gap-filling. In 1999, we will conduct internal QA/QC 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 VOC/PM data.

Research

(See above Research section under Attain NAAQS for Ozone and PM.)

Attain NAAQS for CO, SO₂, NO₂, Lead

Data sources:

- EPA AIRS Air Quality Subsystem;
- EPA National Emission Trends Database;
- EPA Flexible Regional Emissions Data System.

Data from the National Emission Trends Database and the AIRS Air Quality Subsystem are used to determine if non-attainment areas have the requisite three years of clean air data needed for re-designation. The National Emission Trends database will be used to determine if the states have reduced their CO, SO₂, and lead emissions. The Findings and Required Elements Data System (FREDS) system tracks the progress of states and Regions in reviewing and approving the required elements of the state implementation plans also needed for re-designation 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, 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/Local Air Monitoring System (SLAMS) is 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.

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, EPA will post all state, tribal, and local emissions data in a compiled data base so that all interested parties can provide a much more intense review of the inventory. The Emission Inventory Improvement Program (EIIP), which provides consistent methods of estimating emissions data and developed consistent quality assurance methods for use by the states, will improve the quality of state emissions data.

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.

Acid Rain

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 SO₂, NO_x and CO₂ 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 SO₂, NO_x, CO₂ and emissions.

QA/QC procedures:

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.

Strategic Goal: 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.

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 1996 National Water Quality Inventory 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.

Twenty (20) percent of assessed rivers and streams and 25 percent of lake acres are not safe for recreational activities (e.g., swimming). Finally, 16 percent of assessed rivers and streams and 8 percent of lake acres are not meeting drinking water standards. 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 are generally the result of human activities.

EPA needs to motivate people to be responsible in their day-to-day decisions that affect the quality of their rivers, streams, lakes, wetlands, and estuaries.

MEANS AND STRATEGY

To help achieve the Nation's clean and safe water goal, EPA will expand implementation of the watershed approach in carrying out its statutory authorities under the Safe Drinking Water Act Amendments of 1996 and the Clean Water Act.

Protecting watersheds involves participation by a wide variety of stakeholders, a comprehensive assessment of the condition of the watershed, and implementation of solutions based on the assessment of conditions and stakeholder input. Full involvement of stakeholders at all levels of

government, the regulated community, and the public 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.

The Safe Drinking Water Act Amendments of 1996 charted a new and challenging course for EPA,

states, tribes, and water suppliers. One of the central provisions of the Amendments is a significantly strengthened source water protection program, which builds directly on the watershed approach. Other provisions include new requirements for 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.

The Amendments also established a new Drinking Water State Revolving Fund (DWSRF) program to assist public water systems in meeting drinking water standards. They also provided for assistance to small systems to build or strengthen technical, managerial, and financial capacity. Finally they established an operator certification program and require "right-to-know" reports for all customers of public water systems.

EPA has increased its efforts to provide tools and information to assist states and tribes in protecting their residents from health risks associated with contaminated recreational waters and non-commercially 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. These decisions address the need for additional pollution reductions where standards are not being met in watersheds.

EPA will continue to develop and revise national effluent guideline limitations and standards, manage the Clean Water State Revolving Fund (CWSRF) program and other funding mechanisms, and streamline the National Pollutant Discharge Elimination System (NPDES) permit program. EPA will also continue reorienting all its point source programs to focus and coordinate efforts on a watershed basis.

The 1996 Clean Water Needs Survey estimates the Nation's water infrastructure financing need at almost \$140 billion. The CWSRF is a significant financial tool for addressing this need and achieving clean and safe water. With over \$13 billion worth of capitalization grants, all 50 states and U.S. territories have benefited from this and other wastewater funding.

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. In addition, EPA is continuing to increase and advocate the use of CWSRF funds for eligible nonpoint source and estuary projects.

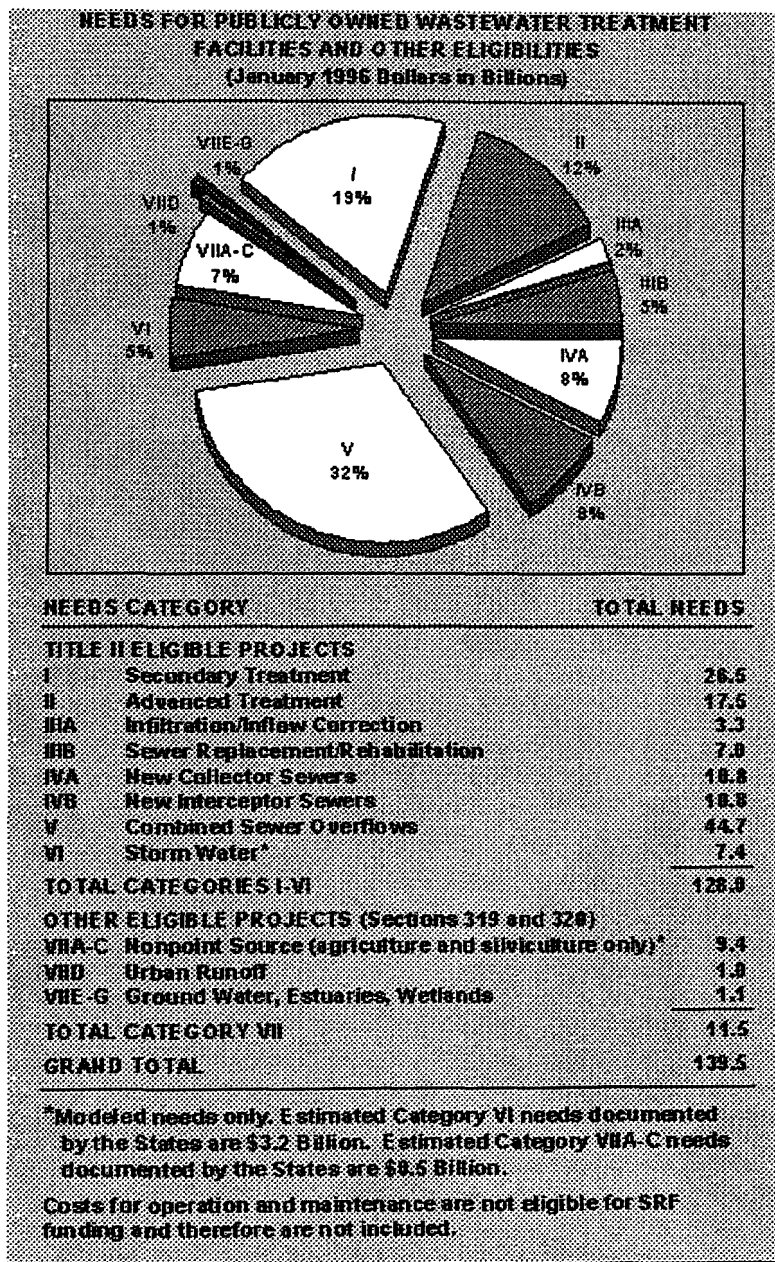
EPA is assisting states and tribes to characterize risks, rank priorities, and implement a mix of voluntary and regulatory approaches through state nonpoint source management programs. State and tribal nonpoint source programs are being strengthened to ensure that beneficial uses of water are achieved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

States will also 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 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 work together 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.

Research

EPA's research efforts will continue to strengthen the scientific basis for drinking water standards through the use of improved methods and new data to better evaluate the risks associated with exposure to chemical and microbial contaminants in drinking water. To support the Safe Drinking Water Act (SDWA) and its 1996 Amendments, the Agency's drinking water research program 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. Research will also include increasing the focus on filling key data gaps and developing methods for chemicals and microbial pathogens. 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

STATUTORY AUTHORITY

- Clean Air Act
- Clean Air Act Amendments (CAA)
- Clean Vessel Act
- Clean Water Act (CWA)
- Coastal Wetlands Planning, Protection, and Restoration Act of 1990
- Coastal Zone Act Reauthorization Amendments of 1990
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Endangered Species Act
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Great Lakes Water Quality Agreement
- Marine Plastic Pollution, Research and Control Act (MPPRCA) of 1987
- Marine Protection, Research and Sanctuaries Act (MPRSA)
- National Environmental Policy Act (NEPA)
- National Invasive Species Act of 1996
- North American Wetlands Conservation Act
- Ocean Dumping Ban Act of 1988
- Pollution Prevention Act (PPA)
- Ramsar Convention on Wetlands (1971)
- Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act (SDWA)
- Shore Protection Act of 1988
- Toxic Substances Control Act (TSCA)
- Water Resource Development Act (WRDA)

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.

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Clean and Safe Water	\$2,815,308.5	\$3,418,339.7
Safe Drinking Water, Fish and Recreational Waters	\$1,026,835.1	\$1,092,624.2
EPM	\$101,726.1	\$110,067.9
S&T	\$45,828.5	\$49,847.0
STAG	\$879,280.5	\$932,709.5
Conserve and Enhance Nation's Waters	\$300,672.5	\$339,236.8
EPM	\$135,543.9	\$166,215.1
S&T	\$15,599.3	\$19,492.4
STAG	\$149,529.3	\$153,529.3
Reduce Loadings and Air Deposition	\$1,487,800.9	\$1,986,478.7
EPM	\$127,453.8	\$133,781.6
S&T	\$7,347.1	\$8,376.1
STAG	\$1,353,000.0	\$1,844,321.0
Total Workyears:	2,465.9	2,496.1

Strategic Objective: Safe Drinking Water, Fish and Recreational Waters

Key Programs (Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Drinking Water Regulations	\$38,860	\$33,886
Drinking Water Implementation	\$30,917	\$31,688
UIC Program	\$11,269	\$11,745
Rural Water Technical Assistance	\$232	\$9,955
State PWSS Grants	\$93,781	\$93,781
State Underground Injection Control Grants	\$10,500	\$10,500
Source Water Protection (CWAP – related)	\$13,001	\$11,686
Water Infrastructure :Drinking Water State Revolving Fund (DW-SRF)	\$775,000	\$775,000
EMPACT	\$769	\$1,291
Environmental Justice	\$881	\$881
Research: Safe Drinking Water Research	\$43,702	\$47,728
Project XL	\$391	\$391

Annual Performance Goals and Measures

DRINKING WATER HEALTH STANDARDS

By 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:

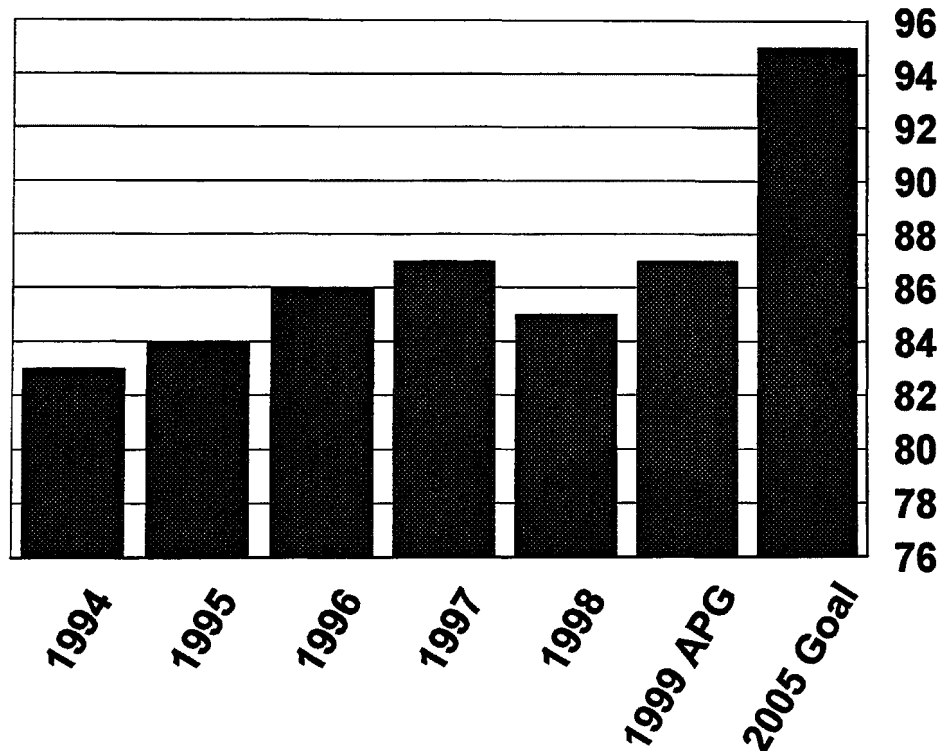
Population served by CWSs that will receive drinking water for which there have been no violations during the year of any federally enforceable health-based standard that were in place by 1994.

Target:

89% 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 FY 1999 President's Budget.

Percent of Population Served By Community Water Systems that Meet all Health based Standards



STANDARDS FOR DRINKING WATER CONTAMINANTS

By 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).

Performance Measures:**Target:**

Regulations promulgated that establish protective levels for high-risk contaminants

2 Rules

Baseline: These are new regulations.

SOURCE WATER PROTECTION

By 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:**Target:**

CWSs with ground or surface water protection programs in place

4,400 CWSs

Baseline: In 1998, 2,750 community water systems implemented programs to protect their source water resources.

RESEARCH: CRITICAL DOSE-RESPONSE DATA

By 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.

Performance Measures:**Target:**

Data on first city study on microbial enteric disease.

30-SEP-99

Complete hazard i.d./screening studies on reproductive/developmental effects of selected DBPs.

30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Conserve and Enhance Nation's Waters

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Water Quality Criteria and Standards (CWAP)	\$19,670	\$17,843
Wetlands (CWAP)	\$17,489	\$16,111
National Estuaries Program (CWAP)	\$16,399	\$16,544
South Florida (Everglades) (CWAP)	\$3,076	\$3,099
Chesapeake Bay (CWAP)	\$18,880	\$19,630
Great Lakes (CWAP)	\$6,355	\$5,382
Gulf of Mexico (CWAP)	\$4,284	\$3,799
Long Island Sound (CWAP)	\$500	\$900
Pfiesteria (CWAP)	\$500	\$2,500
Pacific Northwest (CWAP)	\$821	\$714
Lake Champlain (CWAP)	\$1,000	\$2,000
State Pollution Control Grants (Section 106) (CWAP)	\$115,529	\$115,529
State Water Quality Cooperative Agreements (CWAP)	\$19,000	\$19,000
State Wetlands Program Grants (CWAP)	\$15,000	\$15,000
EMPACT	\$0	\$649

Annual Performance Goals and Measures

UNIFIED WATERSHED ASSESSMENTS

By 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.

Performance Measures:**Target:**

States that are conducting or have completed unified watershed assessments

50 States

Baseline: This is the first time Unified Watershed Assessments have been done. The baseline is zero.**WATERSHED RESTORATION**

By 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:**Target:**

Watersheds/community-based wetlands/river corridors restoration projects funded by EPA's STAR Program. (Cumulative total).

44 Watersheds

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

RESEARCH: AQUATIC STRESSORS

By 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.

Performance Measures:**Target:**

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

30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Reduce Loadings and Air Deposition

Key Programs (Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Rural Water Technical Assistance	\$1,456	\$3,095
Effluent Guidelines (CWAP)	\$23,716	\$22,366
NPDES Program (CWAP)	\$43,409	\$35,142.8
State Nonpoint Source Grants (CWAP)	\$200,000	\$200,000
National Nonpoint Source Program Implementation (CWAP)	\$15,076	\$15,477
Water Infrastructure: Clean Water State Revolving Fund (CW-SRF)	\$1,075,000	\$1,350,000
Water Infrastructure: Alaska Native Villages	\$15,000	\$30,000
Water Infrastructure: Boston Harbor	\$50,000	\$50,000
Water Infrastructure: Bristol County	\$3,000	\$2,610
Water Infrastructure: New Orleans	\$10,000	\$6,525
Sustainable Development Challenge Grants	\$2,015	\$0*
Urban Environmental Quality and Human Health	\$815	\$0
Project XL	\$174	\$174
Common Sense Initiative	\$1,339	\$0
Research: Watershed Research	\$7,347	\$8,376

*Resources in 1999 Enacted Budget were transferred to Goal 8

Annual Performance Goals and Measures

SECONDARY TREATMENT OF WASTEWATER

By 1999: Another 3.4 million people will receive the benefits of secondary treatment of wastewater, for a total of 179 million.

Performance Measures:

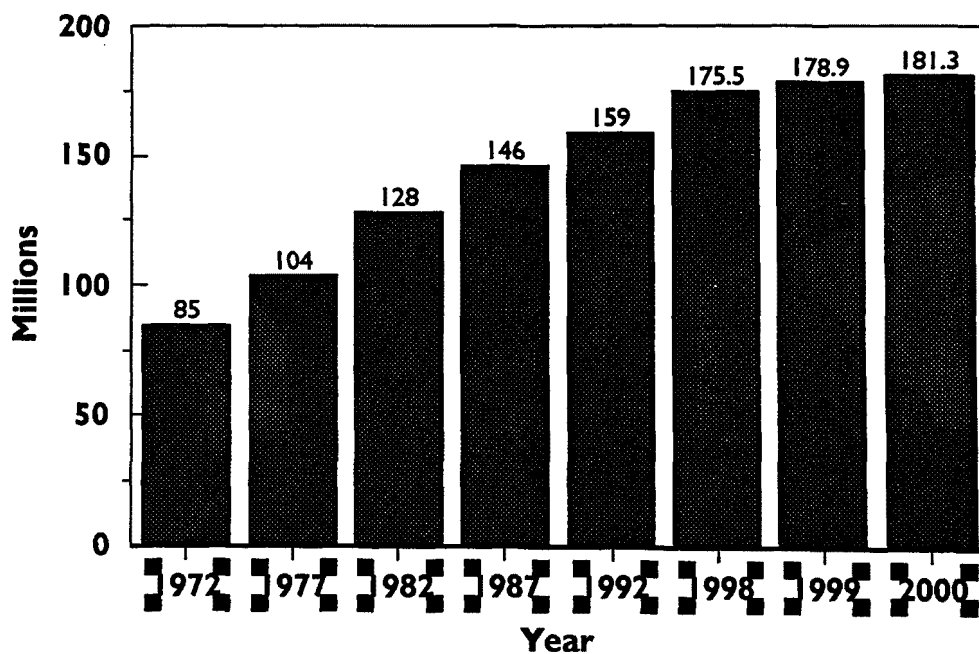
Target:

Additional people who will receive the benefits of secondary or better treatment of wastewater

3.4 M People

Baseline: In July 1998, 175.5 million people were receiving secondary treatment of wastewater according to EPA's Clean Water Needs Survey Database. Note that the cumulative total (179 million people) reflects revised estimates.

U.S. POPULATION SERVED BY SECONDARY TREATMENT OR BETTER



COMBINED SEWER OVERFLOWS/STORM WATER CONTROLS

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

Performance Measures:**Target:**

Communities that will have local watersheds improved by controls on CSOs and storm water

220
Communities

Baseline: No baseline information exists prior to FY 1999.

NONPOINT SOURCE PROGRAMS

By 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:**Target:**

States and Territories that have upgraded their NPS programs (incorporating the 9 key elements outlined in national grant guidance), thereby ensuring implementation of an effective program.

10 States

Baseline: In 1998, 2 states upgraded their nonpoint source programs.

RESEARCH: WATERSHED MANAGEMENT TOOLS

By 2003: Deliver support tools, such as watershed models, enabling resource planners to select consistent, appropriate watershed management solutions and alternative, less costly wet-weather flow control technologies.

Performance Measures:**Target:**

Model Linking Urban Stormwater Management Models and Geographic Information System (GIS).

30-SEP-00

Baseline: Development of "formal" baseline information for EPA research is currently underway.

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 establishes 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 our stakeholders, incorporate their views, and keep the process moving, while focusing on our mutual goal of public health protection has taken the meaning of partnership to a new level. 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 states and tribes, EPA has increased funding for grants to states and tribes to run their drinking water programs by approximately 60% since FY 1993.

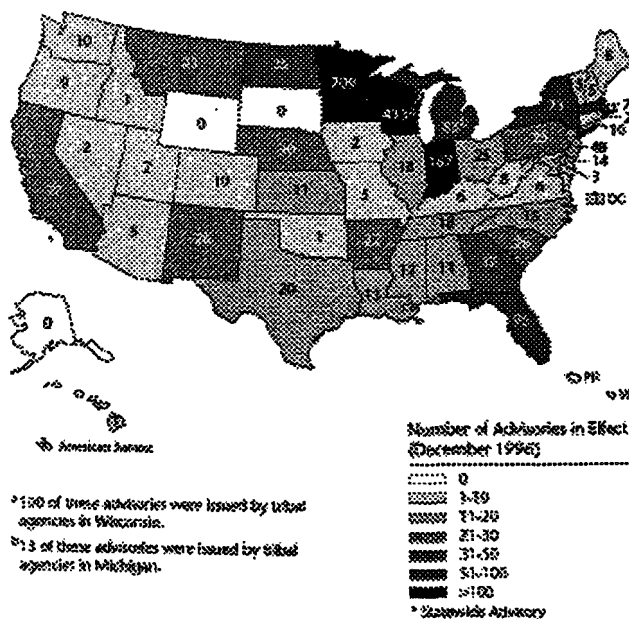
EPA is investing substantially in areas to provide technical assistance and training to the states on the small systems variances and exemptions. EPA is also investing in consumer confidence report rules promulgated in 1998 as well as the health-based, microbial regulations that will

be promulgated early in 1999. Without adequate state staff and resources to work with community water systems, there is a risk that the overall objective of protection of public health and its specific annual performance goals for the drinking water and ground water program will not be met.

The 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

Fish Consumption Advisories in the United States



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 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 to maximize the expected benefits in drinking water and ground water programs in future fiscal years.

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 adequate state and local resources.

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

One way of determining whether we have reduced the consumption of contaminated fish and shellfish is to find out if people eat the fish they catch from waters where fish advisories have been issued. In order to determine whether we have

reduced exposure to contaminated recreational waters, we also need to know if people comply with beach closure notices when they are issued. Acquiring statistical information for such determinations is difficult.

Without comprehensive, consistent monitoring of all the Nation's waters, we do not know how many surface 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. The Index of Watershed Indicators provides reasonable and defensible assessments of water quality, and we will continue to depend upon and provide support to our partners and stakeholders in their efforts to improve measurement tools and capabilities. State 305(b) assessments also provide an adequate representation of individual states water quality conditions, however 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.

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 Combined Sewer Overflows (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.

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 in the Agency's Annual Plan. 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, violations of 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.

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 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).

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 conducts itself 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. In addition to completing the design and development of SDWIS/FED modules, significant management attention and staff resources will be focused on expanding ways to strengthen QA/QC. The Agency has already initiated action in this area through its ongoing stakeholder process 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.

Currently, progress in establishing local source water protection measures is tracked by State program managers, and reported every other year to EPA through a Congressionally-mandated report on State Wellhead Protection Programs. EPA will be working with States in 1999 to gain agreement to use this approach to track progress by water systems utilizing surface waters as well as those systems that are ground water based. EPA will also be gaining agreement to report such information as a condition

in their State Revolving Fund (SRF) work plans which would then make such data collection subject to audit.

Over the longer term, EPA is working to have progress in community source water protection measured at the individual system level through inclusion into the SDWIS reporting requirements and such reporting would then be subject to that system's QA/QC regimen.

Performance data related to NPDES permits will be tracked largely through the Agency's Permit Compliance Systems data base which is managed by the Office of Enforcement and Compliance Assurance (OECA). Data entered into this system by the Regions and states is subjected to data entry quality assurance (QA) procedures to verify that the information is consistent with facility-provided information. Quality assurance of facility-reported information is provided programs such as facility inspections. 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.

The data source for the total population receiving the benefits of secondary wastewater treatment is the Clean Water Needs Survey Database. States enter data into this database following a strict EPA protocol. Before the information is accepted into the database, EPA reviews and approves the data following a strict review protocol. When data problems are detected, follow-up with the states occurs to resolve the problems.

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.

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 available 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.

The performance measure addressing people benefiting from secondary wastewater treatment or better has two data sources: the Clean Water Needs Survey database (CWNS) and the Permits Compliance Systems (PCS). The CWNS provides the population information and PCS provides information on new facilities that are providing secondary treatment or greater.

States enter data into the CWNS database following a strict EPA protocol. Before the information is accepted into the data base, EPA reviews and approves the data following a strict review protocol. When data problems are detected, follow-up with the states occurs to resolve the problems.

Data entered into the Permit Compliance System by the Regions and states 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. 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.

Research

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.

Strategic Goal: Safe Food

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

BACKGROUND AND CONTEXT

The U.S. Environmental Protection Agency (EPA) plays a major role in the lives of all Americans by ensuring the safety of the food supply. 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 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 food. Tolerance requirements apply equally to domestically-produced and 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 all pesticide residues in food, 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.

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 safe levels is the essence of the Safe Food goal.

MEANS AND STRATEGY

The Agency has a dual strategy to: 1) encourage the introduction of new, safer pesticide ingredients (including new biological agents) within the context of new pest-management practices; while 2) systematically reducing the use of the currently registered pesticides with the highest potential to cause adverse health effects. FIFRA mandates Special Review, re-registration 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 ten-fold safety factor to ensure protection of children and infants.

In 1999, the Agency will continue to register new pesticides that prevent or reduce risk compared to those currently on the market. Progressively replacing older, higher-risk pesticides is one of the most effective methods for curtailing unwanted health and ecosystem impacts while preserving food production rates.

Another priority in 1999 will be testing and screening of existing pesticides to establish new tolerance levels, where appropriate, and to evaluate their potential for disrupting endocrine systems in animals or in humans. The emphasis will be on balancing the need for pesticides, allowing for smooth transitions to alternatives, with the risks of use and exposure.

EPA uses its FIFRA registration authorities and the FFDCA mechanism (to establish legally permissible food-borne exposure levels, or tolerances), in tandem to systematically manage the risks posed by such exposures. Using the comprehensive review of existing pesticide use (according to the benchmark of contemporary risk-assessment practices) entailed in re-registration, together with the FQPA requirement to comprehensively reassess and update existing tolerances on a six-year schedule, 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.

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 is the broader effort of preventing the misuse of agricultural pesticides, which EPA shares in partnership with USDA, FDA and the states.

More information about EPA's food safety efforts is available on the Office of Pesticides Program's website at <http://www.epa.gov/pesticides>.

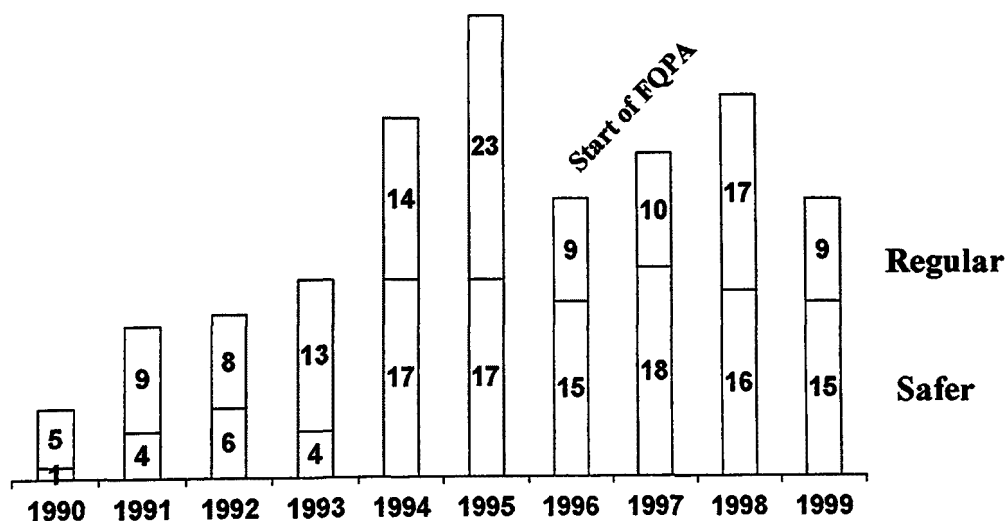
Research

FQPA identifies the need for science to evaluate all potential routes and pathways of exposures to pesticides and their effects on human health. Research will center on such initiatives as assessing the risk of exposures of varying frequency and duration. Research will also compare the effects of exposure to a mixture of pesticides and other toxic chemicals with exposure to the individual chemicals.

STATUTORY AUTHORITY

- Federal Fungicide, Insecticide and Rodenticide Act (FIFRA)
- Federal Food, Drug and Cosmetic Act (FFDCA)
- Food Quality Protection Act (FQPA) of 1996

New Pesticide Registrations



Regular: Conventional Chemicals and Antimicrobials
Safer: Biopesticides and Reduced Risk Chemicals

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Safe Food	\$65,205.9	\$67,546.4
Reduce Agricultural Pesticides Risk	\$26,477.5	\$29,139.0
EPM	\$23,479.3	\$26,243.8
S&T	\$2,998.2	\$2,895.2
Reduce Use on Food of Pesticides Not Meeting Standards	\$38,728.4	\$38,407.4
EPM	\$37,276.6	\$30,587.9
S&T	\$1,451.8	\$7,819.5
Total Workyears:	692.0	702.4

Strategic Objective: Reduce Agricultural Pesticides Risk**Key Programs**

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Pesticide Registration	\$16,166	\$17,492
Pesticide Re-registration	\$4,170	\$4,253
Endocrine Disruptor Screening Program	\$1,164	\$1,164
Pesticide Residue Tolerance Reassessments	\$977	\$976

Annual Performance Goals and Measures

PESTICIDE RISK

By 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:

Target:

Register safer chemicals and biopesticides	15 Registrations
New Chemicals	9 Registrations
Amendments	2000 Actions
Me-toos	600 Actions
New Uses	90 Actions
Inerts	45 Actions
Special Registrations	370 Actions
Tolerance Petitions	95 Actions

Baseline: Risk levels for pesticides registered 1995 or before; targets are annual and as such, have no baseline.

Strategic Objective: Reduce Use on Food of Pesticides Not Meeting Standards

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Pesticide Re-registration	\$25,274	\$20,718
Endocrine Disruptor Screening Program	\$1,418	\$1,418
Pesticide Residue Tolerance Reassessments	\$8,561	\$8,564

Annual Performance Goals and Measures

PESTICIDE TOLERANCES

By 1999: Under pesticide re-registration, 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:

Target:

Tolerance Reassessment

1850 Actions

REDs

34 Decisions

Product Re-registration

750 Actions

Baseline: 9,700 tolerances developed prior to 1996

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.

Much of the success of EPA programs also depends on the voluntary cooperation of the private sector and the 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. 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.

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.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

The performance measures for this goal include program outputs for the Registration program and are used as an indirect measure of reducing risk. New pesticides and tolerance settings undergoing registration under the FQPA standard are deemed to be less risky than those which were registered before FQPA, because the new registrations have to meet a more stringent health standard. Additionally, the registration of reduced risk pesticides could potentially reduce the use of the higher risk pesticides, and in doing so, reduce risk. Specific outputs include the numbers of new registered pesticides, new uses of existing pesticides, inert ingredients, "me-toos" or pesticides produced by more than one manufacturer, special registrations and newly registered safer chemicals and biopesticides.

The performance measures are tracked internally by the Office of Pesticides (OPP) and the information is readily available to the public. The database used to track Registration outputs is the Pesticides Regulatory Action Tracking System (PRATS), which we update as an action is completed. The Chemical Review Management System (CRMS) tracks study requirements for company submission information. PRATS and CRMS thus provide internal means for ensuring that goals are being met. Additional information on pesticide usage is available from the National Pesticide Residue Database (NPRD).

Other performance measures for this goal include outputs for the Re-registration 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 re-registration actions. Outputs include the number

of tolerance reassessments, re-registration eligibility decisions (REDS) which are a portion of the re-registration process, and the final product re-registrations completed in a given year.

Research

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.

Strategic Goal: 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.

BACKGROUND AND CONTEXT

The diversity and fragility of America's environments (communities, homes, workplaces and ecosystems) requires EPA to adopt a multifaceted 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 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 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 over 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, EPA forms partnerships with industry to find sensible solutions to prevent pollution.

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 1999. This new initiative will provide the public with information on the basic health and environmental effects of the 3000 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 are 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 1999 will be increased attention on documenting and taking action to reduce risk from chemicals that persist, bioaccumulate and 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.

Under this Goal, EPA ensures that pesticide use not only results in safe food, but also causes 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 Agency fosters the safe, effective use of anti-microbial agents. EPA works to ensure the comprehensive protection of non-target organisms and endangered species in particular, and to reduce the contribution of pesticides to specific ecological threats such as endocrine disruption or pollutant loading in geographic areas.

EPA also 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 both the urban and rural environments.

In several cases achieving the strategic objectives under this goal is a shared responsibility with other federal 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

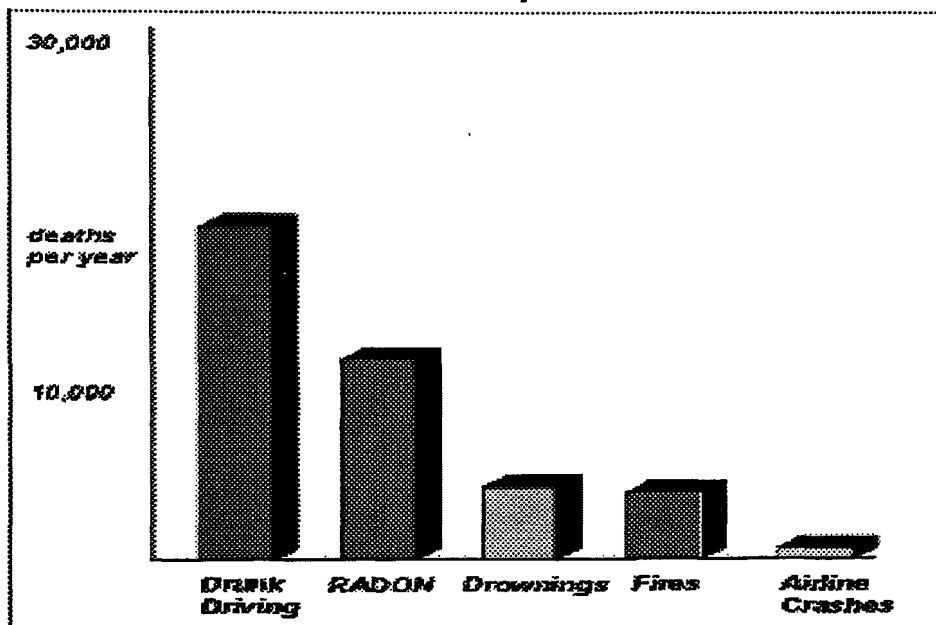
Centers for Disease Control; HUD) to monitor and reduce environmental lead levels. Likewise, the results of EPA's efforts to reduce indoor air exposures are measured by public-health agencies.

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.

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



Radon is estimated to cause about 14,000 deaths per year. However, this number could range from 7,000 to 30,000 deaths per year. The numbers of deaths from other causes are taken from 1990 National Safety Council reports.

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.

This Goal focuses on how Americans live in communities and features the particular commitment of promoting environmental protection in Indian country, as consistent with our trust relationship

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.

In addition, research under this goal will characterize indoor air factors that contribute to the onset and exacerbation of asthma. More information on EPA's research programs can be found on <http://www.epa.gov/>.

STATUTORY AUTHORITY

- Clean Air Act (CAA) section 309 (42 U.S.C. 7609)
- Clean Water Act (33 U.S.C. 1251-1387)]
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42
- Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001-11050)
- Federal Food, Drug and Cosmetic Act (FFDCA)
- Federal Fungicide, Insecticide and Rodenticide Act (FIFRA)
- Indian General Assistance Program (GAP) Act as amended (42 U.S.C. 4368b)
- Pollution Prevention Act (PPA)
- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901-6992k)
- Safe Drinking Water Act sections 1412 and 1417 (42 U.S.C. 300g-1, 300g-6)
- Solid Waste Disposal Act as amended by the Hazardous and Solid Waste Amendments of 1984.
- Superfund Amendments and Reauthorization Act of 1986 (SARA) Title IV, "Radon Gas and Indoor Air Quality Research Act"
- Toxic Substances Control Act (TSCA)

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems	\$259,721.3	\$237,789.8
Reduce Public and Ecosystem Exposure to Pesticides	\$48,998.9	\$43,178.2
EPM	\$35,020.7	\$29,219.0
S&T	\$863.6	\$844.6
STAG	\$13,114.6	\$13,114.6
Reduce Lead Poisoning	\$30,844.6	\$30,817.4
EPM	\$17,132.4	\$17,105.2
STAG	\$13,712.2	\$13,712.2
Safe Handling and Use of Commercial Chemicals and Microorganisms	\$44,750.6	\$42,443.2
EPM	\$32,007.1	\$31,206.6
S&T	\$12,743.5	\$11,236.6
Healthier Indoor Air	\$34,017.6	\$29,629.4
EPM	\$20,874.7	\$16,662.1
S&T	\$4,984.9	\$4,809.3
STAG	\$8,158.0	\$8,158.0
Improve Pollution Prevention Strategies, Tools, Approaches	\$26,829.8	\$21,884.0
EPM	\$20,830.3	\$15,884.5
STAG	\$5,999.5	\$5,999.5
Decrease Quantity and Toxicity of Waste	\$23,429.1	\$18,852.5
EPM	\$22,350.3	\$15,779.5
STAG	\$1,078.8	\$3,073.0
Assess Conditions in Indian Country	\$50,850.7	\$50,985.1
EPM	\$8,265.3	\$8,399.8
STAG	\$42,585.4	\$42,585.3
Total Workyears:	1,122.8	1,124.9

Strategic Objective: Reduce Public and Ecosystem Exposure to Pesticides

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Pesticide Registration	\$10,253	\$7,451
Pesticide Re-registration	\$4,860	\$4,856
Endocrine Disruptor Screening Program	\$268	\$268
Agricultural Worker Protection	\$4,769	\$4,365
Pesticide Applicator Certification and Training	\$5,516	\$5,314
Pesticides Program Implementation Grant	\$13,115	\$13,115

Annual Performance Goals and Measures

PESTICIDES AND POLLUTANTS REDUCTION

By 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 pesticides poisoning reported nationwide.

Performance Measures:	Target:
Environmental Stewardship Strategies.	42 complete
Incidences of pesticides poisonings	15% Reduction (cumulative)
Labor Population will be adequately trained	38% Trained (cumulative)
Pesticides w/high probability to leach/persist in groundwater	10% managed

Baseline: 1995 reporting for adverse effects data and for number of workers trained. Stewardship figures are cumulative. Baseline for ground water contamination managed is under development.

Strategic Objective: Reduce Lead Poisoning

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Lead Risk Reduction Program	\$16,929	\$16,911
Grants to States for Lead Risk Reduction	\$13,712	\$13,712

Annual Performance Goals and Measures

LEAD-BASED PAINT TRAINING

By 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:

Target:

State programs developed for the training, accreditation and certification of lead-based paint abatement professionals. 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

Baseline: Number of states in which either federal or state program will be established.

Strategic Objective: Safe Handling and Use of Commercial Chemicals and Microorganisms

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Endocrine Disruptor Screening Program	\$1,600	\$1,257
New Chemical Review	\$14,140	\$13,410
Existing Chemical Data, Screening, Testing and Management	\$12,491	\$12,870
National Program chemicals: PCBs, Asbestos, Fibers, and Dioxin	\$3,301	\$3,012

Annual Performance Goals and Measures

CHEMICAL AND MICROORGANISM SAFETY

By 1999: Ensure that of the approximately 1,800 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:

Target:

TSCA Pre-Manufacture Notice Reviews.

1,800 Notices

Baseline: Expected number of chemicals to be submitted in 1999.

Strategic Objective: Healthier Indoor Air

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
State Radon Grants	\$8,158	\$8,158
Indoor Environments: ETS	\$1,183	\$1,050
Indoor Environments: Schools	\$6,789	\$2,921
Indoor Environments : Asthma	\$2,589	\$1,136
EMPACT	\$905	\$0
Research: Indoor Air Research	\$3,012	\$2,836

Annual Performance Goals and Measures

HEALTHIER RESIDENTIAL INDOOR ENVIRONMENTS

By 1999: 700,000 additional people will live in healthier residential indoor environments.

Performance Measures:

Target:

People Living in Healthier Indoor Air

700,000 People

Baseline: 1. The baseline for people living in homes built with radon resistant features is 600,000 in 1994. 2. The baseline for the number of children exposed to ETS is 19,500,000 in 1994. 3. The baseline for the number of people living in radon mitigated homes is 780,000 in 1994.

Strategic Objective: Improve Pollution Prevention Strategies, Tools, Approaches

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Design for the Environment	\$4,844	\$4,554
Pollution Prevention Program	\$9,676	\$8,872
Pollution Prevention Incentive Grants to States	\$6,000	\$6,000
Common Sense Initiative	\$1,179	\$429

Annual Performance Goals and Measures

TRI POLLUTANTS REDUCTION

By 1999: The quantity of Toxic Release Inventory pollutants released, treated or combusted for energy recovery will be reduced by 200 million pounds, or two percent, from 1998 reporting levels.

Performance Measures:

Reduction of TRI pollutants released

Target:

200 million
pounds

Baseline: Previous end level for reduction reported in most recent TRI data (1997).

Strategic Objective: Decrease Quantity and Toxicity of Waste

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
RCRA State Grants	\$1,079	\$3,073
Waste Minimization	\$2,399	\$2,195
Source Reduction	\$5,505	\$2,729
Recycling	\$5,489	\$4,981
Urban Environmental Quality and Human Health	\$220	\$0
Common Sense Initiative	\$1,782	\$634

Annual Performance Goals and Measures

MUNICIPAL SOLID WASTE

By 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:

Target:

Millions of tons of municipal solid waste diverted.

62 million tons

Daily per capita generation of municipal solid waste.

4.3 lbs. MSW

Baseline: 1990 levels established at 17% of MSW diverted and 4.3 pounds MSW per capita daily generation.

Strategic Objective: Assess Conditions in Indian Country

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Tribal General Assistance Grants	\$42,585	\$42,585

Annual Performance Goals and Measures

TRIBAL AGREEMENTS

By 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:

Target:

Tribal environmental baseline information collected

10% Baseline

Tribes with Tribal/EPA environmental agreements or identified environmental priorities.

10 Tribes

Baseline: EPA completed the design of a system to collect and manage data on environmental conditions in Indian country at the end FY 1998. The data assessment process will be initiated in FY 1999. In 1998, a total of 35 tribes had EPA/Tribal Environmental Agreements or similar plans.

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 timeframe 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 timeframe 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 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 (new products, amendments, uses, etc.), so its projection of regulatory workload is subject to change.

Success in improving indoor air quality depends upon the work of many federal and state agencies, and ultimately on the Agency's ability to provide useful information to individuals so that they may intelligently identify and avert risks to health in the household, workplace, schools and other indoor settings.

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 could be impacted by the increased flexibility provided to states to redirect resources under the National Environmental Performance Partnership System

(NEPPS). If states redirect resources away from this area, it would impact both annual performance and progress in implementing the Agency's strategic plan. To mitigate this potential issue, EPA is working with the Environmental Council of States (ECOS) to develop core measures beyond FY 1998 and coordinating with states to develop, for example, 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 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 (U.S. 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.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

Reduce Public and Ecosystem Exposure of Pesticides

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.

Reduce Lead Poisoning

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.

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. The results, scheduled for release in 2002, will be used to measure the success of EPA's lead program. The verification and validation of data from NHNES 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 the awareness and any changes in behavior of the regulated community as a result of these regulations.

For example, at the end of 1998, EPA will have established a training, certification, and accreditation program for lead-based paint professionals in states that do not seek approval from the Agency to administer their own program (about 15-20 states are not expected to seek authorization). For more information: (<http://www.epa.gov/opptintr/lead/leadcert.htm>). In 1999, following an outreach effort to increase awareness of state residents on EPA's certification program, the Agency will measure the success of this regulation in certifying professionals.

The success will be determined by the degree of awareness of the program among professionals who are likely to become certified. Similar evaluations will be developed for other regulations.

Safe Handling and Use of Commercial Chemicals and Microorganisms)

Performance will be measured by the number of new chemicals Pre-Manufacture Notice submissions (PMN's) that are determined by EPA to be safe and not to require EPA management controls. PMN's 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 to mitigate through actions such as labeling or banning of 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 (CRTK) initiative and the Endocrine Disruptor screening and testing project (<http://www.epm.gov/endocrine>) 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 CRTK initiative can easily be measured by tracking the number of chemicals for which EPA has received another accountability tool used to verify and validate performance measures. The recently developed GPRA structure will be incorporated into OMIS to ensure consistent maintenance and

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.

EPA has several strategies to validate and verify performance measures in the area of environmental science and research. The Agency has implemented a risk-based research planning process to use risk assessment and risk management as principle priority-setting criteria. EPA conducts annual research program reviews to both evaluate the status and accomplishments of its research, and to determine planning priorities.

Chief among the Agency's validation and verification mechanisms is a rigorous peer review process. In a July 1997 memorandum, EPA's Deputy Administrator states that peer review will be expanded "to include both the major work products provided in the past and ... all scientific and technical products supporting Agency decisions...". This expanded and strengthened focus on peer review will help ensure that the performance measures listed here are verified and validated by external organizations. The Agency utilizes peer review throughout the research planning and implementation process, both to ensure that planned research addresses critical knowledge issues within EPA's mission and to assess the quality of scientific research plans, products, and proposals. This is accomplished through the use of independent entities.

The Office of Research and Development Management Information System (OMIS) will be reporting, resulting in greater accuracy and consistency of information to users.

Healthier Indoor Air

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 (CRCPD). CRCPD conducts a biennial telephone survey of randomly selected households in which the primary decision maker is asked questions which include their awareness of radon, whether they have tested their home for radon, whether they have taken steps to mitigate elevated levels of radon, whether there are children aged six and under in the home, and if so, whether smoking goes on inside the home. The study is performed by CRCPD for its own uses, and quality control and assurance procedures are the responsibility of CRCPD and its survey contractor. The Agency survey of the radon industry will determine the amount of residential testing and mitigation completed by radon service providers (<http://www.epm.gov/iag>). This survey will supplement the residential telephone survey, and will be conducted by EPA and its contractor. Quality assurance and control procedures will be designed in accordance with Agency standards. The Agency purchases the results of an annual survey of home builders which assesses the extent to which residential builders are employing radon-resistant construction techniques. Quality assurance and control procedures are the responsibility of the National Association of Home Builders.

ETS

To ascertain the number of children aged 6 and under exposed to ETS in their homes, the program utilizes the biennial survey conducted by the Conference of Radiation Control Program Directors, as described above. In addition, the Agency uses the Department of Health and Human Services National Health Interview Survey, which poses a similar question to a national sample of households, as a

check on the accuracy of the CRCPD study results.

Schools

The number of schools that implement the Indoor Air Quality (IAQ) "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, (<http://www.epa.gov/iag/schools/index.html>). The accuracy of this database is dependent upon the reliability of personnel filling out the information form and their understanding of the steps taken in their school(s) to implement EPA's multi-step guidance. Because this is a voluntary program, the Agency has no authority to verify the accuracy or comprehensiveness of information provided by school personnel. 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.

Improve Pollution Prevention Strategies, Tools, Approaches

Toxics Release Inventory (TRI) data:

Industrial facilities in specified Standard Identification Codes (SIC) are required to provide TRI data for chemicals listed by law or regulation. The data are estimates by the reporting facility of the quantities of toxic chemicals in production-related wastes that are released to the environment (including 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. In 1999, nearly 28,000 facilities are expected to provide TRI data.

The source reduction performance measure (see Goal #1, above) relies 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, 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 (<http://www.epa.gov/opptintr/tri>). The latest survey, completed in 1998, showed that errors in reporting source reduction activities varied by industry sector and resulted primarily from misinterpretations (by facilities) 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 additional 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.

In addition to those facilities reporting under TRI, EPA will utilize data from a variety of 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. This can be as simple as collecting data on the amount of a particular chemical used within an industry (for

example, perchloroethylene used in drycleaning) 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 to produce outreach materials for industry.

Decrease Quantity and Toxicity of Waste

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. In all instances appropriate verification and validation procedures are in place (<http://www.epa.gov/epaoswer/osw/index.htm>).

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; and 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, while states and EPA regions submit essentially complete BRS databases, 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. The documentation identifies which information, for example, is mandatory versus optional and describes how to enter the data into the system. All information is provided to the appropriate state and EPA regional user of the system. 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 (Resource Conservation and Recovery Act Information System 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.

Assess Conditions in Indian Country

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 (<http://www.epa.gov/indian/Programs.htm>).

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.

Research

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.

Strategic Goal: 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.

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 1999, 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.

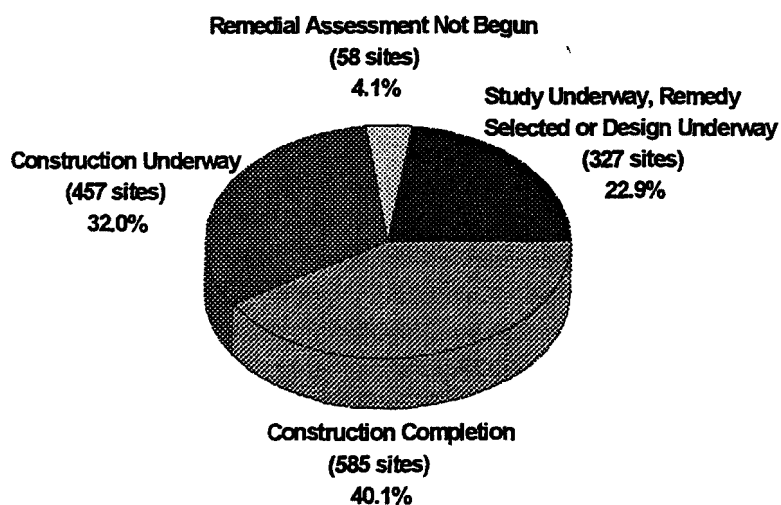
MEANS AND STRATEGY

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, Brownfield, Resource Conservation and Recovery Act (RCRA), and underground storage tank (UST) sites.

National Priorities List Status

(End of FY 1998)



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. For more information about these programs refer to the following home pages: <http://www.epa.gov/swerrims> and <http://www.epa.gov/oeca/hazsol.html>

Another principal objective of this goal is to prevent, reduce, and respond to

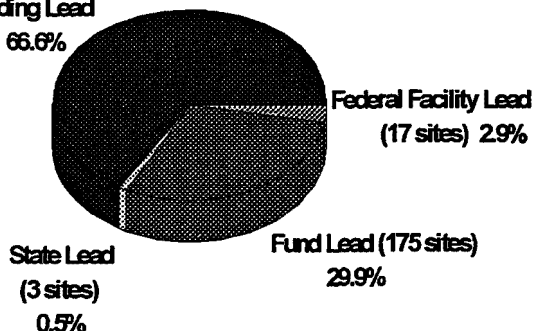
releases, spills, accidents or emergencies. Through the UST, RCRA, and Oil programs, the Agency and its partners manage the practices of thousands of facilities to prevent dangerous releases to the environment. When releases do occur, EPA and its partners will have the capabilities to successfully respond.

Goal 5 has been restructured by combining the original objectives 2 and 3 of the Strategic Plan into this objective. More information on these programs can be found at the home page: <http://www.epa.gov/osw>

Lead Party At The Time Of Construction Completion

FY 1998

Responsible Party or
Mixed Funding Lead
(390 sites) 66.6%



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, multi-pathway exposure modeling and risk assessment.

Greater information about research and development activities can be found at the following Internet address:
<http://www.epa.gov/ordntrmt/ord>

STATUTORY AUTHORITY

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986
- CERCLA (42 U.S.C. 9601-9675)
- CERCLA, as amended, 42 U.S.C.A. Section 9660
- CERCLA Section 104 (a)
- CERCLA Section 104 (b)
- CERCLA Section 104 (b)(1)
- CERCLA Section 104 (d)(1)
- CERCLA Section 111 (a)(1)
- CERCLA Section 311 (c), 42 U.S.C. 9660 []
- CERCLA Section 311 (b)(9)(A)
- CERCLA Section 311 (b)(3)
- Title III (Emergency Planning and Community Right-to-Know Act) of CERCLA, as amended by Superfund Amendments and Reauthorization Act (SARA) of 1986.
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), section 104.
- Solid Waste Disposal Act as amended by Hazardous and Solid Waste Amendments of 1984
- Resource Conservation and Recovery Act (RCRA), as amended, 42 U.S.C.A. Section 6981.
- RCRA, as amended, 42 U.S.C.A. Section 6981
- The 1984 Hazardous and Solid Waste Amendment to RCRA
- OPA 33 U.S.C.A. Section 276
- Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)
- 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 Act of 1980, as amended under the Resource Conservation and Recovery Act of 1976.
- Clean Air Act, Section 112(r).
- Clean Air Act, 42 U.S.C.A., Section 7403.
- Clean Water Act (CWA), Section 311.
- Oil Pollution Act (OPA), 33 U.S.C. 2701-2761.
- Safe Drinking Water Act of 1974: National Primary Interim Drinking Water Regulations (1976), MCL
- 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 WIPPs
- 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)
- Section 102 of the National Environmental Policy Act, 42 U.S.C. Section 4332
- The Defense Base Closure and Realignment Act of 1990, Section 2905 (a) (1) (E) (10 U.S.C. 2687 Note).

STATUTORY AUTHORITY (CONTINUED)

- 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.
- 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).

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Better Waste Management, Restoration of Contaminated Waste Sites, and Emergency Response	\$2,256,934.3	\$1,655,913.5
Reduce or Control Risks to Human Health	\$2,076,119.9	\$1,491,141.1
EPM	\$42,645.0	\$42,301.1
EPM-REIM	\$0.0	\$0.0
S&T	\$6,761.2	\$49,809.4
STAG	\$28,400.6	\$24,808.8
LUST	\$69,128.7	\$70,418.7
OIL	\$962.0	\$962.0
SF	\$1,928,222.4	\$1,302,841.1
Prevent , Reduce and Respond to Releases, Spills, Accidents or Emergencies	\$180,814.4	\$164,772.4
EPM	\$111,190.9	\$93,966.8
S&T	\$9,229.4	\$8,797.6
S&T-REIM	\$0.0	\$0.0
STAG	\$36,126.6	\$38,038.4
OIL	\$15,818.2	\$13,496.9
SF	\$8,449.3	\$10,472.7
Total Workyears:	4,304.8	4,316.9

Strategic Objective: Reduce or Control Risks to Human Health

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
RCRA Corrective Action	\$22,871	\$18,167
RCRA State Grants	\$28,401	\$24,809
Federal Preparedness	\$1,500	\$1,500
Leaking Underground Storage Tanks (LUST) Cooperative Agreements	\$57,700	\$59,883
Superfund Remedial Actions	\$1,056,615	\$588,190
Superfund Removal Actions	\$328,434	\$199,419
Federal Facilities	\$28,642	\$28,642
Assessments	\$92,720	\$87,739
Brownfields	\$90,882	\$89,606
ATSDR Superfund Support	\$64,000	\$76,000
NIEHS Superfund Support	\$48,527	\$60,000
Other Federal Agency Superfund Support	\$10,492	\$10,000
EMPACT	\$921.7	\$398
Superfund - Maximize PRP Involvement (including reforms)	\$96,267	\$91,042
Superfund - Cost Recovery	\$30,494	\$30,494
Superfund - Justice Support	\$29,664	\$29,000
Research: Hazardous Substance Research: Hazardous Substance Research Centers	\$1,094	\$1,067
Research: Hazardous Substance Research: Superfund Innovative Technology Evaluation (SITE)	\$7,683	\$7,663
Common Sense Initiative	\$0	\$136

Annual Performance Goals and Measures

COST RECOVERY

By 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.

Performance Measures:

Target:

Address Cost Recovery at all NPL & Non-NPL sites w/tot. past costs = or > \$200K

100% Cases

Baseline: In FY 97 the Agency will have addressed Cost Recovery at all NPL & Non-NPL sites with total past costs equal or greater than \$200,000.

PRP COMMITMENTS

By 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:

Target:

Section 106 Civil Actions

38 Agreements

Orphan Share Offers at all eligible work settlement negotiations much obliged

100%
Settlements

De Minimis Settlements

23 Settlements

Remedial Admin. Orders

19 Orders

Baseline: In FY 97 approximately 70% of new remedial work at NPL sites (excluding Federal facilities) was initiated by private parties.

LUST CLEANUPS

By 1999: Complete 22,000 Leaking Underground Storage Tank (LUST) cleanups.

Performance Measures:**Target:**

LUST cleanups completed.

22,000 USTs

Baseline: EPA completed a total of 178,297 LUST cleanups through 1997.**SUPERFUND SITES CONSTRUCTION**

By 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:**Target:**

Construction completions.

85 completions

Baseline: EPA and its partners completed 585 construction completions from 1982 through 1998.**RCRA FACILITIES**

By 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:**Target:**

High priority RCRA facilities with human exposures to toxins controlled.

83 facilities

High priority RCRA facilities with toxic releases to groundwater controlled.

45 facilities

Baseline: EPA established a baseline of 1,700 high-priority corrective action facilities in January 1999.**BROWNFIELDS SITE ASSESSMENT GRANTS**

By 1999: EPA will fund Brownfields site assessments in 100 more communities, thus reaching 300 communities by the end of 1999.

RESEARCH: INNOVATIVE TECHNOLOGIES

By 2001: Demonstrate and verify the performance of 18 innovative technologies by 2001, emphasizing remediation and characterization of groundwater and soils.

Performance Measures:

Target:

Delivery of the Annual SITE Program Report to Congress

30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Prevent, Reduce and Respond to Releases, Spills, Accidents or Emergencies

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
RCRA Permitting	\$11,931	\$10,332
RCRA State Grants	\$25,582	\$27,494
Waste Combustion	\$8,003	\$7,347
Accident Safety/Prevention	\$1,010	\$0
Risk Management Plans	\$11,871	\$7,258
Federal Preparedness	\$8,037	\$9,560
Community Right to Know (Title III)	\$5,351	\$4,684
Underground Storage Tanks (UST)	\$6,701	\$6,078
UST State Grants	\$10,545	\$10,545
Oil Spills Preparedness, Prevention and Response	\$14,183	\$11,988
Project XL	\$110	\$113
Common Sense Initiative	\$177	\$130
Civil Enforcement	\$1,271	\$1,234
Compliance Assistance and Centers	\$0	\$275
Research: Hazardous Waste Research	\$7,051	\$6,619

Annual Performance Goals and Measures

SPILL PREVENTION, CONTROL AND COUNTERMEASURE

By 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:

Target:

Facilities in SPCC compliance.

190 facilities

Baseline: More than 300 facilities were in compliance in 1998.

WASTE MANAGEMENT FACILITIES PERMITTING

By 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:

Target:

RCRA hazardous waste management facilities with permits or other approved controls in place.

122 facilities

Baseline: EPA and its partners identified hazardous waste management facilities as of 1997. The baseline will be finalized in 1999.

RESEARCH: CUMULATIVE EXPOSURE-RISK ASSESSMENT

By 1999: Complete prototype model for assessing cumulative exposure-risk assessment integrating the environmental impact of multiple chemicals through multiple media and pathways.

Performance Measures:

Target:

Beta version for comprehensive modeling system.

30-SEP-99

HWIR Human and Ecosystems Site (Generic) Exposure-Risk Assessment Screening Model, 30-SEP-99 peer reviewed and applied to HWIR listed chemical exit levels.

Baseline: Development of "formal" baseline information for EPA research is currently underway.

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 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 achieving construction completions, cost recoveries, and maximizing PRP participation in clean-up efforts are heavily dependent on the progress of PRP, state or Tribal negotiations 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 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 management plan (RMP) review program to more states in 1999 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 a number of factors, including: 1) In most cases, states have received authorization (hazardous waste management program) or approval (municipal solid waste landfill permit program) and are primary implementers of these programs. As such, EPA relies heavily on states to perform many of the activities needed to achieve these targets. 2) The technology of Continuous Emissions Monitors (CEMs) could affect the ability of combustion facilities to monitor emissions and provide data in a cost-effective manner. The Agency is coordinating with ORD, DOE, and private industry in these efforts. 3) The increased flexibility provided to states to redirect resources under the National Environmental Performance Partnership System (NEPPS). If states redirect resources away from this area, it would impact both annual performance and progress implementing the Agency's strategic plan.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

The Office of Underground Storage Tanks (OUST) uses the following processes to verify and validate 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. EPA has defined the various roles and responsibilities of key individuals who are responsible for development, operation and maintenance of CERCLIS.

The headquarter[s] sponsor of CERCLIS 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 responsibility of the Information Management Center, under the EPA's Office of Emergency and Remedial Response (OERR), 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.

The CERCLIS database 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.

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.

Two audits, one by the Office Inspector General (OIG) and the other by Government Accounting Office (GAO), were done this past year to assess the validity of the data in CERCLIS. The OIG audit report "Superfund Construction Completion reporting", No. EISGF7-05-0102-8100030, 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. 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 1999, the Agency will begin 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 begin 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.

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 system. The Brownfields Management System 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 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.

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 for which potential needs for corrective actions have been identified.

For validation and verification within 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.

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.

Because the RCRA statute provides for delegation of program implementation to the states, the majority of data for the RCRA information system (RCRIS) and the Biennial Reporting System (BRS), originates with and is received from the states. In addition 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 impracticable 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.

The RCRA program is currently in the process of reinventing its information management needs and systems through a joint initiative with the states called WIN/INFORMED. The scope of the WIN/INFORMED project covers the activities and information currently supported by the RCRIS and BRS data systems. The RCRA program has been divided into areas for analysis and design/construction of new systems. Each 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 analysis. The systems will be designed flexibly so where the program is still identifying data needed to support a program activity, that information can later be incorporated into the system after it has been fully developed by the program.

The WIN/INFORMED project is scheduled to be completed by the end of the calendar year 2002. Analysis, design and construction will occur over different times for each of the program areas. BRS information will be analyzed in the Waste Activity Monitoring (WAM) area which is scheduled to begin in June, 1999. System construction for WAM will be completed in 2001. Permitting/Corrective Action information will be analyzed in the Permitting/Corrective Action (PCA) area which is scheduled to begin in January, 2000. System construction for PCA will be completed during 2002.

Non-hazardous waste management is delegated to the states. Federal guidance is provided, but no actual federal program implementation exists. For this reason, 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.

Since states have implementation authority for MSW programs, they know best the extent of compliance within their jurisdictions. To measure progress, the Agency must rely on the ability and willingness of state regulatory programs to share this knowledge.

Measuring the number of facilities that have permits or other forms of approval issued to them directly relates to the number of facilities with approved controls in place. Approved controls means compliance with the requirements of federal regulations, Agency approved state permit program, or other system of prior approval and conditions. In 1999, emphasis will be placed on approving State programs that will lead to all MSW disposal facilities having approved controls in place.

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.

Research

Under Objectives 1 and 2, 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.

Strategic Goal: 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 environmental concern.

BACKGROUND AND CONTEXT

Air, water, and waste pollution crossing our borders 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

Ecosystems and transboundary pollutants pose serious environmental hazards to people, communities and wildlife. These transboundary pollutants are transported through air, water and toxic substances and are not confined by international boundaries. As a result, domestic actions alone are inadequate to achieve some of EPA's most important environmental goals.

To achieve our Agency goal of reducing cross-border environmental risks requires us to work with other countries to address external sources of pollution impacting human health and the environment of our nation.

EPA will use a variety of approaches to prevent harm to the global environment and ecosystems including:

- 1) formal 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) promoting public/private partnership programs to reduce greenhouse gas emissions.

Research

EPA's Global Change Research Program is currently undergoing a major redirection towards a more assessment-oriented program, with primary emphasis on understanding the potential consequences of climate variability and change on human health, ecosystems, and socioeconomic systems in the United States. EPA will also make assessments of opportunities to reduce the risks or take advantage of the opportunities presented by climate variability and change.

STATUTORY AUTHORITY

- 1990 Great Lakes Critical Programs Act
- Clean Water Act (CWA) (33 U.S.C. 1251-1387)
- Clean Air Act (CAA) Title VI, Parts A and D (42 U.S.C. 7401-7431, 7501-7515)
- Clean Water Act, 33 U.S.C. 1251 et seq. - Section 104
- Pollution Prevention Act of 1990, 42 U.S.C. 13101 et seq. - Sections 6602, 6603, 6604, 6605
- Solid Waste Disposal Act, 42 U.S.C. 6901 et seq. - Section 8001
- 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
- U.S. Global Change Research Program Act of 1990
- United Nations Framework Convention on Climate Change
- National Climate Program Act (1997)
- 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
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)
- 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)
- Federal Food, Drug and Cosmetic Act (FFDCA).
- 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 World Trade Organization Agreements
- World Trade Organization Agreements
- North American Free Trade Agreement
- North American Agreement on Environmental Cooperation
- Treaties: The Boundary Waters Treaty of 1909 and 1987 Great Lakes Water Quality Agreement

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Reduction of Global and Cross-border Environmental Risks	\$398,286.4	\$229,366.9
Reduce Transboundary Threats: Shared North American Ecosystems	\$120,392.3	\$71,025.9
EPM	\$20,392.3	\$21,025.9
STAG	\$100,000.0	\$50,000.0
Climate Change	\$232,960.4	\$127,968.9
EPM	\$163,237.5	\$74,347.9
S&T	\$69,722.9	\$53,621.0
Stratospheric Ozone Depletion	\$26,914.3	\$17,033.8
EPM	\$26,914.3	\$17,033.8
Protect Public Health and Ecosystems From Persistent Toxics	\$6,883.2	\$4,125.8
EPM	\$6,883.2	\$4,125.8
Achieve Cleaner and More Cost-Effective Practices	\$11,136.2	\$9,212.5
EPM	\$11,136.2	\$9,212.5
Total Workyears:	530.2	522.4

Strategic Objective: Reduce Transboundary Threats – Shared North American Ecosystems

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Great Lakes National Program Office (CWAP)	\$13,315	\$14,615
Water Infrastructure: Mexico Border	\$100,000	\$50,000
U.S. - Mexico Border	\$4,707	\$10,643
Partnership with Industrial and Other Countries	\$1,642	\$784

Annual Performance Goals and Measures

MEXICAN BORDER

By 1999: 1 additional water/wastewater projects along the Mexican border will be certified for design-construction.

Performance Measures:

Target:

Projects certified for design-construction along the Mexican Border

1 Project

Baseline: As of 1998, 24 Mexican border projects were either certified for design-construction or had received grants or IAGs.

Strategic Objective: Climate Change

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Climate Change Technology Initiative: Buildings	\$78,100	\$38,800
Climate Change Technology Initiative: Transportation	\$58,900	\$31,750
Climate Change Technology Initiative: Industry	\$51,600	\$18,600
Climate Change Technology Initiative: Carbon Removal	\$3,400	\$0
Climate Change Technology Initiative: State and Local Climate Change Program	\$5,000	\$2,900
Climate Change Technology Initiative: International Capacity Building	\$8,400	\$7,400
Partnership with Industrial and Other Countries	\$160	\$409
Research: CCTI RESEARCH (Office of Air and Radiation)	\$0	\$10,000
Research: Climate Change Research	\$22,817	\$16,671

Annual Performance Goals and Measures

U.S. GREENHOUSE GAS EMISSIONS

By 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:	Target:
Methane Programs - Annual Greenhouse Gas Reductions	8.5 MMTCE
HFC/PFC Programs - Annual Greenhouse Gas Reductions	11.5 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
Annual Greenhouse Gas Reduction (Climate Wise) – Production of 1999 US Greenhouse Gas Inventory.	4.4 MMTCE
Annual Greenhouse Gas Reductions (Transportation)	1.9 MMTCE

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.

RESEARCH: CLIMATE CHANGE ASSESSMENT

By 1999: Conduct preliminary assessment of consequences of climate change at three geographical locations: (Mid-Atlantic, Gulf Coast, and upper Great Lakes).

Performance Measures:

Target:

Conduct preliminary assessment of regional scale consequences of climate change at three geographic locations (Mid-Atlantic, Gulf Coast, and upper Great Lakes).	09/30/99 assessment
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Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Stratospheric Ozone Depletion

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Multilateral Fund	\$21,000	\$11,362
EMPACT	\$382	\$671
Partnership with Industrial and Other Countries	\$160	\$337

Annual Performance Goals and Measures

CFC AND HALON REDUCTION

By 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:

Target:

Domestic Consumption of Class II HCFCs

<208,400 MTs

Domestic Exempted Production and Import of Newly Produced Class I CFC s and Halons

<130,000 MTs

Baseline: The base of comparison for assessing progress on the annual erformance 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.

Strategic Objective: Protect Public Health and Ecosystems From Persistent Toxics

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Global Toxics	\$3,312	\$932
Partnership with Industrial and Other Countries	\$0	\$100

Annual Performance Goals and Measures

PERSISTENT ORGANIC POLLUTANTS

By 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:

Target:

Agreed USG policies on selection criteria for Persistent Organic Pollutants

09/30/99
negotiations

Baseline: POPs treaty negotiations are underway. Anticipate negotiations concluded 2001. Treaty ratification 2003-2005.

Strategic Objective: Achieve Cleaner and More Cost-Effective Practices

Key Programs

(Dollars in thousands)

Enacted	1999 Pres Bud	1999
Environment and Trade	\$3,178	\$4,515
Partnership with Industrial and Other Countries	\$7,800	\$4,547

Annual Performance Goals and Measures

INTERNATIONAL TRAINING MODULES, ENVIRONMENTAL TECHNOLOGIES EXPORTS

By 1999: Deliver 30 international training modules; implement 6 tech assistance/ technology dissemination projects; implement 5 co-op policy development project; & disseminate info products on US environmental technologies and techniques to 2500 foreign customers

Performance Measures:	Target:
Number of training modules delivered	30 modules
Number of tech assistance or tech dissemination projects carried-out	6 projects
Number of info products disseminated to foreign customers	2500 products
Number of capacity building activities scheduled for initiation in FY 2000 and beyond	2 reports

Baseline: During FY 1999, deliver 30 international training modules; implement 6 technical assistance or technology dissemination projects; implement 5 cooperative policy development projects; and disseminate information products on US environmental technologies and techniques to 2,500 foreign customers. 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.

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 with 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 U.S. investment 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.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

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 are required to comply with the Agency's standards for quality assurance and control. Project data is entered into the Great Lakes Environmental Monitoring Database (GLEND), and project information generated through grants and contracts.

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 performance from indirect

performance measures. 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.

EPA has several strategies to validate and verify performance measures for the Climate change Program. 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.

Stratospheric ozone measurements are based on atmospheric models and data provided by the National Aeronautics and Space Administration (NASA), 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.

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.

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.

The Office of Research and Development Management Information System (OMIS) will be another accountability tool used to monitor and track performance measures. The GPRA structure will be incorporated into OMIS to ensure consistent maintenance and reporting, resulting in greater accuracy and consistency of information to users.

Strategic Goal: Expansion of Americans' Right to Know

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.

BACKGROUND AND CONTEXT

Providing all Americans with access to sound environmental information and informing 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 the public has 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 burden of health consequences from poor environmental conditions.

The Agency believes the public has the right to receive adequate knowledge of and be represented in public policy and environmental decision-making processes.

MEANS AND STRATEGY

Access to environmental information enables the public to make informed decisions about their local environment. It also promotes creative and lasting solutions to environmental risks, opportunities for preventing pollution, and sustainable solutions to environmental problems.

The principal accomplishment of this goal will be to empower state, local, and tribal governments and the public by providing information to enable them to make informed decisions regarding environmental issues in their communities. EPA will improve the quality and increase the quantity of general environmental education, outreach and data availability.

EPA will also expand the content of its data holdings, improve the quality and usability of the data, and ensure the data are widely available through the Internet and other sources.

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 obtain access to the decision-making process as it relates to their local environment.

In addition, EPA relies upon key information management reforms that are essential to support the Agency's new approaches to environmental

protection. Examples of key management reforms designed to improve the availability of major systems and subsequent information collection and data integration. The Agency is promoting the implementation of advanced technology, including the Internet, to disseminate environmental information at the local level.

In the longer term, new technology, unanticipated complexity or magnitude of technological, partnership or environmental problems or newly identified environmental problems and 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 or no control. As such, success of EPA programs depends on the voluntary cooperation and collaboration of the private sector and the general public and is ultimately determined by increased understanding and actions by the public about their environment. We believe that with increased education, outreach and data availability, the public will be able to participate in the decisions to solve the Nation's environmental problems.

environmental performance data to the public include implementation of data standards for

Research

EPA's research efforts under this goal include the President's Environmental Monitoring for Public Access and Community Tracking (EMPACT) Program, and the Integrated Risk Information System (IRIS).

EMPACT is a cross-Agency program established to pilot strategies to provide time relevant, multi-media environmental information to a broad spectrum of the American public in metropolitan areas across the nation.

IRIS is an EPA database of Agency consensus health information on environmental contaminants which is used extensively EPA Program Offices and Regions where consistent, reliable toxicity information is needed for credible risk assessments. Also under this goal, guidance and support will be provided to risk assessors through the provision of risk assessment guidelines, expert consultation and support, and risk assessment training.

STATUTORY AUTHORITY

- Clean Air Act (CAA) and amendments (42 U.S.C. 7601-7671q)
- Clean Water Act (CWA) and amendments (33 U.S.C. 1251-1387)
- Clinger-Cohen Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. 9601-9675)
- Computer Security Act
- Congressional Review Act (CRA)
- CPRKA of 1986
- Electronic Freedom of Information Act
- Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001-11050)
- Environmental Education Act
- Environmental Research, Development, and Demonstration Act (ERDDA) of 1981
- Executive Order 12866
- Federal Advisory Committee Act (FACA) (5 U.S.C. App.)
- Federal Food, Drug and Cosmetic Act (FFDCA) Section 408 (21 U.S.C. 346A)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 136-136y)
- FMFIA

STATUTORY AUTHORITY (CONTINUED)

- Food Quality Protection Act (FQPA)
- Freedom of Information Act (FOIA) (5 U.S.C. 552) Results Act (GPRA)
- National Environmental Education
- Government Performance and Results Act
- North American Agreement on Environmental Cooperation
- Paperwork Reduction Act and Paperwork Reduction Act Amendment of 1995 (44 U.S.C. 3501-3520)
- Plain Language Executive Order
- Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)
- Privacy Act
- Regulatory Flexibility Act (RFA)
- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901-6992k)
- Safe Drinking Water Act (SDWA) and amendments (42 U.S.C. 300f-300j-26)
- SARA
- Small Business Regulatory Enforcement Fairness Act (SBREFA)
- Toxic Substances Control Act (TSCA) (15 U.S.C. 2601-2692)
- Unfunded Mandates Reform Act

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Expansion of Americans' Right to Know About their Environment	\$158,923.3	\$133,467.4
Increase Quality/Quantity of Education, Outreach, Data Availability	\$75,522.7	\$67,818.7
EPM	\$73,094.2	\$65,865.8
SF	\$2,428.5	\$1,952.9
Improve Public's Ability to Reduce Exposure	\$49,959.0	\$42,247.7
EPM	\$49,959.0	\$42,247.7
Enhance Ability to Protect Public Health	\$33,441.6	\$23,401.0
EPM	\$12,834.5	\$11,640.6
S&T	\$20,221.3	\$11,517.3
SF	\$385.8	\$243.1
Total Workyears:	736.2	720.8

Strategic Objective: Increase Quality/Quantity of Education, Outreach, Data Availability

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
EMPACT	\$7,230	\$1,202
Superfund - Maximize PRP Involvement (including reforms)	\$364	\$364
Information Technology Management	\$6,744	\$4,235
Reinventing Environmental Information (REI)	\$17,704	\$12,548
SBREFA	\$703	\$760
Small Business Ombudsman	\$987	\$1,110
Center for Environmental Statistics (CEIS)	\$4,355	\$3,966
Environmental Education	\$8,478	\$7,768
GLOBE	\$1,000	\$0

Annual Performance Goals and Measures

ENVIRONMENTAL JUSTICE

By 1999: Provide over 100 grants to assist communities with understanding and addressing Environmental Justice issues.

Performance Measures:

Target:

EJ Community Grants

100 Grants

Baseline: The percentage of enforcement policy & 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. These documents provide information to populations suffering disproportionately from adverse health & environmental effects. In 1999 each region will be required to report on the meetings held in disproportionately disadvantaged communities & this information will provide a baseline for future years.

ONE-STOP REPORTING

By 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:**Target:**

Number of States participants in the One Stop Reporting Program.

29 States

Baseline: 29 State participants in 1999.

Strategic Objective: Improve Public's Ability to Reduce Exposure

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Drinking Water Consumer Awareness	\$2,304	\$1,366
Pesticide Registration	\$5,460	\$5,214
Pesticide Re-registration	\$5,108	\$5,462
Toxic Release Inventory / Right-to-Know (RtK)	\$19,752	\$19,800
EMPACT	\$5,000	\$614

Annual Performance Goals and Measures

RIGHT TO KNOW REPORTING REQUIREMENTS

By 1999: Increase compliance with right to know reporting requirements by conducting 1,300 inspections and undertaking 200 enforcement actions.

Performance Measures:**Target:**

Section 313 Inspections

600 Inspections

EPCRA APO Complaints

200 APO
Complaints

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..

CONSUMER CONFIDENCE REPORT REGULATION AND IMPLEMENTATION TOOLS

By 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:

Target:

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

Baseline: The final rule for drinking water consumer confidence reports was promulgated in August 1998.

ENHANCING COMMUNITY RIGHT TO KNOW AND EFFICIENTLY PROCESSING INFORMATION FROM INDUSTRY

By 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:

Target:

TRI Public Data Release

1997 Rept.
Published

Form R's Processed

110,000 Forms

Baseline: Number of facilities reporting and number of chemicals included in TRI compared with prior year; types of public access methods and percent magnetic reporting prior year.

Strategic Objective: Enhance Ability to Protect Public Health

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Small, Minority, Women-Owned Business Assistance	\$2,149	\$2,064
Research: EMPACT	\$15,002	\$6,390

Annual Performance Goals and Measures

RESEARCH: GRANTS TO EMPACT CITIES

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:

Target:

Award 5-7 grants to EMPACT cities to implement timely and high quality environmental monitoring technologies.

5-7 Grants

Baseline: Perfor. 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 on-going and sustainable manner. Development of "formal" baseline information for EPA research is currently underway.

EXTERNAL FACTORS

EPA relies heavily on partnerships with 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 obtain access to the decision-making process as it relates to their local environment. Key management reforms are being implemented to improve the availability of environmental performance data to the public, including establishing data standards for major systems, information collection and data integration.

The Agency is promoting the implementation

of advanced technology, including the Internet, to disseminate environmental information at the local level. New technology, unanticipated complexity or magnitude of technological, partnership or environmental issues and priorities could all effect the time frame for achieving the Goal 7 objectives.

The ability of the Agency to achieve its strategic goal of expansion of American's right to environmental information is influenced by factors the Agency has only partial or no control over. The success of EPA programs depends on the voluntary cooperation and collaboration of the

private sector and the general public. The success of the Agency public outreach efforts is ultimately

determined by increased understanding and actions by the public about their environment.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

Data Availability

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.

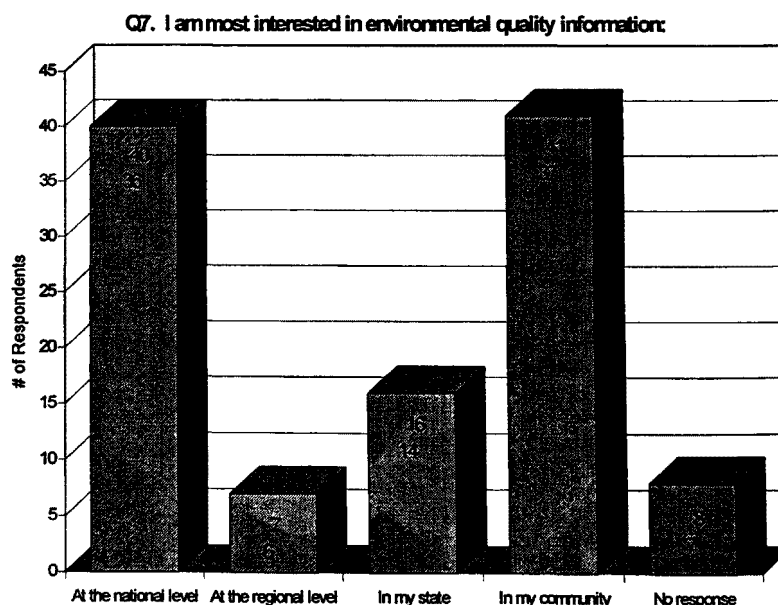
The Agency's Public Access Project, currently being implemented, is designed to make all policies, guidance and site-specific determinations available to the public through the Internet.

For instance, the data from the Sector Facility Indexing Project (SFIP), which is based on numerous reviews by EPA, states and industry, captures 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.

Data Enhancement

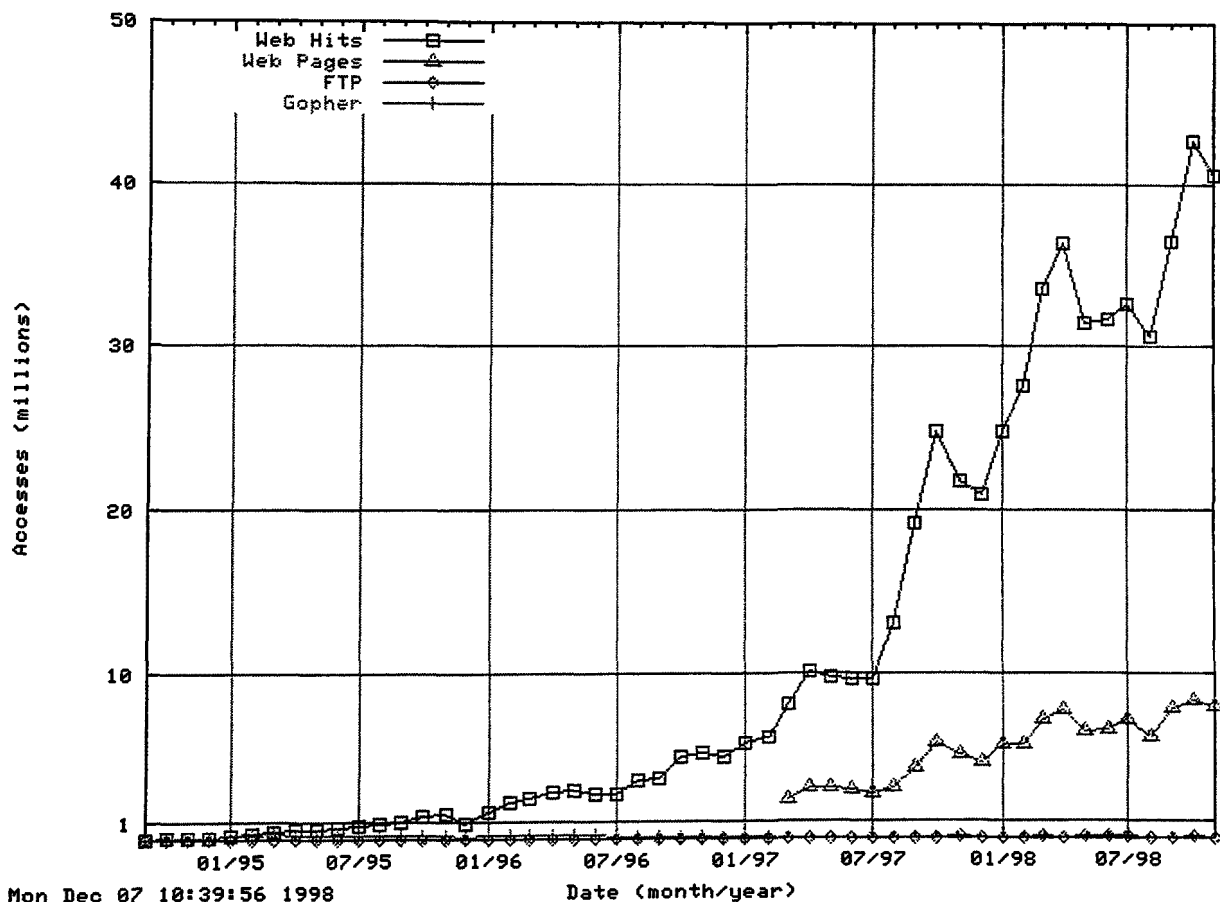
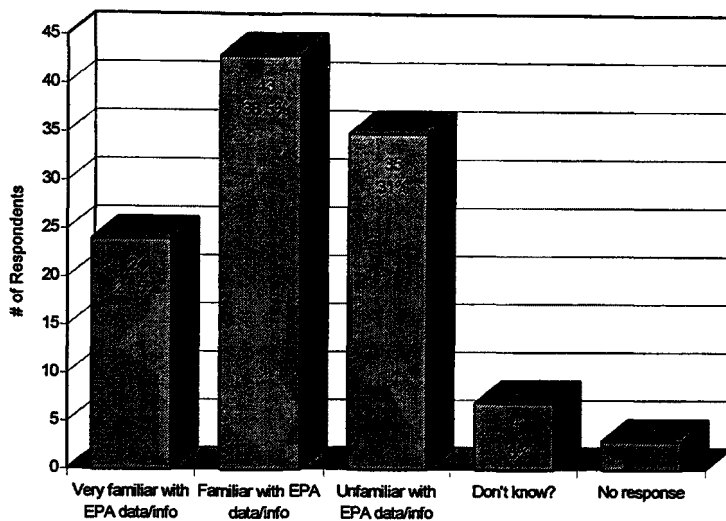
The approach to validate progress in reaching Agency performance targets will rely on the Agency's automated performance measure system to capture programmatic and customer service outcomes. The system will require periodic updating of performance data. Performance information will be collected and evaluated against targets on a quarterly basis. The collection of performance data will involve a variety of methods, such as 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.

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 can be counted or otherwise objectively verified. For example, the Toxic Release Inventory System (TRIS) tracks progress in processing the 110,000 Form R's submitted each year. In cases such as the data quality measure, verification procedures are built into the data entry process both at the respondent

Q8. Would you describe yourself as someone who is:



Above: Visits to EPA's web site

level and when the 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 together serve to verify and validate data that EPA collects and disseminates.

The TRI component of the right-to-know program generates data that inform the public 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.

Research

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, or protocols 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.

Strategic Goal: 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.

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 dealt with 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 its science base and to develop innovations in environmental protection 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.

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 our understanding of environmental processes and our 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 also 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. 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 plans to continue to operate pediatric environmental health centers which conduct basic and applied research in combination with community-based prevention efforts that focus on identifying and preventing environment-related diseases in children. EPA will establish one additional center in addition to the eight existing centers. Children's health research efforts focus on asthma, developmental disorders, and cancer.

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 a high priority on pollution prevention, 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.

STATUTORY AUTHORITY

- Clean Air Act Amendments of 1990
- Clean Air Act
- Clean Air Act Amendment
- Clean Water Act
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- Economy Act of 1932
- Environmental Research, Development and Demonstration Act (ERDDA) of 1981
- Federal Advisory Committee Act (5 U.S.C. App.) Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)
- Federal Technology Transfer Act
- FFDCA of 1988
- Food Quality Protection Act (FQPA) of 1996
- FQPA of 1996
- MPRSA section 33 U.S.C. 26
- National Environmental Policy Act
- Patent Statute
- Pollution Prevention Act of 1990
- Resource Conservation and Recovery Act (RCRA)
- Resources Conservation and Recovery Act
- Safe Drinking Water Act
- Section 309 of the Clean Air Act.
- Superfund Amendments Reauthorization Act
- Toxic Substances Control Act

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Sound Science, Improved Understanding of Env. Risk and Greater Innovation to Address Env. Problems	\$322,661.8	\$346,996.0
Research for Ecosystem Assessment and Restoration	\$106,489.4	\$111,978.7
S&T	\$105,521.0	\$111,978.7
SF	\$968.4	\$0.0
Research for Human Health Risk Assessment	\$57,063.6	\$50,573.7
EPM	\$18.8	\$18.8
S&T	\$57,001.2	\$50,554.9
SF	\$43.6	\$0.0
Research to Detect Emerging Risk Issues	\$61,639.2	\$56,648.8
EPM	\$5,760.9	\$7,214.4
S&T	\$55,843.3	\$49,434.4
SF	\$35.0	\$0.0
Pollution Prevention and New Technology for Environmental Protections	\$54,246.4	\$77,286.3
EPM	\$374.2	\$857.0
S&T	\$52,515.6	\$76,429.3
SF	\$1,356.6	\$0.0
Increase Use of Integrated, Holistic, Partnership Approaches	\$16,810.5	\$16,390.5
EPM	\$16,810.5	\$16,390.5
Increase Opportunities for Sector Based Approaches	\$11,496.8	\$21,091.7
EPM	\$11,461.8	\$20,156.7
S&T	\$0.0	\$900.0
SF	\$35.0	\$35.0
Regional Enhancement of Ability to Quantify Environmental Outcomes	\$7,995.1	\$6,505.5
EPM	\$4,613.7	\$3,407.6
SF	\$3,381.4	\$3,097.9

Science Advisory Board Peer Review	\$2,586.7	\$2,486.7
EPM	\$2,586.7	\$2,486.7
Incorporate Innovative Approaches to Environmental Management	\$4,334.1	\$4,034.1
EPM	\$4,334.1	\$4,034.1
Total Workyears:	1,212.1	1,194.2

Strategic Objective: Research for Ecosystem Assessment and Restoration

Key Programs (Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Research: Clean Water Action Plan - Related Research	\$0	\$1,406
Research: Environmental Monitoring and Assessment Program, EMAP	\$36,262	\$33,255

Annual Performance Goals and Measures

RESEARCH: MONITORING DATA FOR ACID DEPOSITION AND UVB

By 1999: Analyze existing monitoring data for acid deposition and UVB and implement a multiple site UVB monitoring system for measuring status and trends

Performance Measures:

Target:

Publish an analysis of the trends in atmospheric deposition and aquatic effects.

30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

RESEARCH: ECOLOGICAL RISK ASSESSMENT

By 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:	Target:
Ecological risk assessment guidelines follow-on project report.	30-SEP-99
Report to CENR on use of Ecological Risk Assessment in the Federal Government.	30-SEP-99
Development and use of ecological information management system.	30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

RESEARCH: ECOLOGICAL MONITORING SYSTEM FOR THE MID-ATLANTIC REGION

By 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:	Target:
Provide baseline landscape indicators for the Mid-Atlantic Region.	30-SEP-99
Reports on benthic and water quality indicators of condition in estuaries.	30-SEP-99
Publish and analysis of the trends in atmospheric deposition and aquatic effects.	30-SEP-99
Publish Mid-Atlantic region stressor profiles for ozone, acid deposition, pesticides, nitrogen and other stressors.	30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Research for Human Health Risk Assessment

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Research: Human Health Research	\$57,001	\$50,324

Annual Performance Goals and Measures

RESEARCH: PESTICIDE EXPOSURE

By 1999: Produce First Generation Exposure Models Describing Residential Exposure to Pesticides

Performance Measures:

Target:

First Generation Residential Exposure Models

30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

RESEARCH: SUSCEPTIBILITIES TO ENVIRONMENTAL AGENTS

By 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:

Target:

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-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Research to Detect Emerging Risk Issues

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Research: Endocrine Disruptor Research	\$13,469	\$12,230

Annual Performance Goals and Measures

RESEARCH: CHILDREN'S EXPOSURE TO ENDOCRINE DISRUPTING CHEMICALS

By 1999: Initiate Field Exposure Study of Children to 2 EDC's

Performance Measures:

Target:

Protocol for field exposure study of children to 2 EDC's

30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Pollution Prevention and New Technology for Environmental Protections

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Research: Common Sense Initiative	\$871	\$867
Research: Advanced Measurement Initiative (AMI)	\$4,000	\$0
Research: Environmental Technology Verification (ETV)	\$7,884	\$6,991

Annual Performance Goals and Measures

RESEARCH: FINE PARTICULATE MODEL

By 1999: Improve Computational Efficiency of Fine Particulate Model by 25%.

Performance Measures:

Target:

Complete parallel algorithms for aerosol dynamics.

30-SEP-99

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Increase Use of Integrated, Holistic, Partnership Approaches

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Sustainable Development Challenge Grants*	\$0	\$4,702
*In FY 1999 President's Budget assigned to Goal 1		
Regional Geographic Program	\$12,045	\$8,673

Strategic Objective: Increase Opportunities for Sector Based Approaches

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Project XL	\$3,360	\$3,360
Common Sense Initiative	\$3,813	\$3,813

Annual Performance Goals and Measures

RESEARCH: PROJECT XL

By 1999: A total of 50 Project XL projects will be in development or implementation, an increase of 23 over 1998.

Performance Measures:

Target:

Number of Project XL projects in implementation.

50 Projects

Baseline: Development of "formal" baseline information for EPA research is currently underway.

Strategic Objective: Regional Enhancement of Ability to Quantify Environmental Outcomes Key Programs

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Regional Science and Technology	\$7,995	\$6,407

Strategic Objective: Incorporate Innovative Approaches to Environmental Management

Key Programs
(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Reinvention Programs, Development and Coordination	\$4,334	\$4,334

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 tenant for actions taken by the Agency, then external factors will have a minimal impact on the goal.

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. 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.

Scientific research plans, products, and proposals all are scrutinized by independent entities, such as the Science Advisory Board (SAB). EPA's Board of Scientific Councilors (BOSC), established under the Federal Advisory Committee Act, evaluates the effectiveness and efficiency of each Laboratory and Center within the Office of Research and Development, including areas such as peer 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.

Performance within the Office of Policy will be verified by identifying customer usage of economic

resources within the Office of Policy, and by surveying customers to determine adequacy and

satisfaction with economics information available and provided.

Strategic Goal: A Credible Deterrent to Pollution and Greater Compliance with the Law

EPA will ensure full compliance with the laws intended to protect human health and the environment.

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 STRATEGY

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.

Because government resources are limited, 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.

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.

EPA will continue to explore options for:

STATUTORY AUTHORITY

- 1983 La Paz Agreement on US/Mexico Border Region
- Clean Air Act sections 113, 114, and 303 (42 U.S.C. 7413, 7414, 7603)
- Clean Water Act (CWA) sections 308, 309, and 311 (33 U.S.C. 1318, 1319, 1321)
- Comprehensive Environmental Response, Compensation, and Liability Act sections 106, 107, 109, and 122 (42 U.S.C. 9606, 9607, 9609, 9622)
- 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)
- National Environmental Policy Act (NEPA)
- North American Agreement on Environmental Cooperation
- Ocean Dumping Act sections 101, 104B, 105, and 107 (33 U.S.C. 1411, 1414B, 1415, 1417)
- Resource Conservation and Recovery Act sections 3007, 3008, 3013, and 7003 (42 U.S.C. 6927, 6928, 6934, 6973)
- 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)
- 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)

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
A Credible Deterrent to Pollution and Greater Compliance with the Law	\$332,733.8	\$319,390.3
Enforcement Tools to Reduce Non-Compliance	\$283,209.4	\$272,965.9
EPM	\$190,770.5	\$181,844.0
S&T	\$8,662.8	\$8,583.9
STAG	\$67,079.3	\$67,884.4
SF	\$16,696.8	\$14,653.6
Increase Use of Auditing, Self-Policing Policies	\$49,524.4	\$46,424.4
EPM	\$45,700.3	\$43,940.3
S&T	\$97.9	\$0.0
STAG	\$3,333.4	\$2,214.2
SF	\$392.8	\$269.9
Total Workyears:	2,559.3	2,554.4

Strategic Objective: Enforcement Tools to Reduce Non-Compliance

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
RCRA State Grants	\$43,537	\$43,223
Compliance Monitoring	\$65,015	\$56,839
Civil Enforcement	\$86,821	\$83,090
Criminal Enforcement	\$35,412	\$33,787
Compliance Assistance and Centers	\$0	\$37
Enforcement Training	\$5,086	\$4,436
State Pesticides Enforcement Grants	\$18,392	\$19,512
State Toxics Enforcement Grants	\$5,150	\$5,150

Annual Performance Goals and Measures

INCREASE COMPLIANCE

By 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:

Target:

EPA Inspections

15,000 Inspections

Baseline: The number of inspections conducted annually has remained fairly consistent in recent years. This information is the basis for the 1999 projections, with adjustments made for changes in resources levels. In 1999, 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 1999 and forms the basis for this calculation.

TARGET HIGH PRIORITY AREAS

By 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:

Target:

Data system improve. To capture chgs to 98 base

2 Data Systems

Baseline: No baseline established for FY 1999.

ASSIST STATES AND TRIBES

By 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:

Target:

Specialized Asst. & Training

83 Courses

Baseline: 89 training sessions in FY 97.

Strategic Objective: Increase Use of Auditing, Self-Policing Policies

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Project XL	\$2,912	\$2,905
Common Sense Initiative	\$1,086	\$1,083
Compliance Assistance and Centers	\$24,376	\$23,178
Compliance Incentives	\$4,203	\$4,076
NEPA Implementation	\$9,521	\$9,402
State Pesticides Enforcement Grants	\$1,119	\$1,119
State Toxics Enforcement Grants	\$2,214	\$0

Annual Performance Goals and Measures

COMPLIANCE INCENTIVES

By 1999: Increase regulated community's use of compliance incentives and their understanding of, and ability to comply with, regulatory requirements. The Agency will cont. to operate 9 small business compl. asst. centers and will complete sector notebooks, guides, and other outreach materials begun in FY98.

Performance Measures:

Target:

Compl. Assistance Centers in Oper.

9 Centers

Compliance Tools Development

5 Sector Guides

Fed Fac Mgt Reviews

15 Reviews

Baseline: The Enforcement and Compliance Assurance program collects information from the regions annually on how many facilities are being reached through compliance assistance efforts. In 1997, EPA conducted 98,830 activities across all sectors & statutes & reached 342,310 facilities. The number of compliance assistance tools developed in 1997 was 1,190.

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 willingness to make decisions 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.

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:

- (1) National Compliance Data Base (NCDB) / FIFRA/TSCA Tracking system (FTTS) - EPA Headquarters (HQ), EPA regions, and states.
- (2) DOCKET - EPA HQ and regions
- (3) Permit Compliance System (PCS) - EPA regions and states
- (4) FIFRA Section Seven Tracking System (SSTS) - EPA regions
- (5) FIFRA Laboratory Inspection Study Audit (LISA) - EPA HQ and regions

- (6) Pesticide Registration Enforcement System (PRES) - EPA HQ
- (7) Waste Import Tracking System (WITS) - EPA regions
- (8) CERCLIS - EPA regions
- (9) Integrated Data for Enforcement Analysis (IDEA) - EPA compliance and enforcement data bases and external data sources
- (10) Resource Conservation and Recovery Information System (RCRIS) - EPA regions and states
- (11) Safe Drinking Water Information System (SDWIS) - EPA regions and states
- (12) AIRS Air Facility Subsystem (AFS) - EPA regions and states and locals

(13) Asbestos Contractor Tracking System (ACTS)/
National Asbestos Registry System (NARS) - EPA
regions and states

(14) Docket - EPA HQ and regions

(15) Environmental Review Tracking System
(ERTS) - EPA regions and other Federal agencies.

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.

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 will establish system specific data quality objectives which specify how data will be used and limits on decision errors. QMP's will 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 program will also undertake modernization design and will complete the concept and design phase of the General Enforcement Management System.

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 1999.

The Sector Facility Indexing Project produced a data quality findings document for AFS, PCS and RCRIS which offers specific guidance for use in QA/QC procedures.

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.

The enforcement program publishes Federal Register Notices for all Environmental Impact Statements (EISs) received by EPA. EPA regions review and comment on all EISs.

The EPA Inspector General in 1997 addressed problems states have identifying and reporting of Clean Air Act significant violators, which have 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.

In 1997 the enforcement and compliance assurance program also 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.

Strategic Goal: Effective Management

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

BACKGROUND AND CONTEXT

Efforts under this goal support the full range of Agency activities for a healthy and sustainable environment. To advance the protection of human health and the environment, effective vision and leadership, sound management practices, results-based planning and budgeting, fiscal accountability, 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 progress towards 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, so that we can 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 EPA's many diverse children's activities. 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 and to meet its fiduciary and workforce responsibilities. We will manage an integrated planning, budgeting, analysis, financial management and accountability process to ensure effective stewardship of resources which meets

statutory requirements of GPRA, CFO, and related legislation.

In 1999, the Agency will design an accountability system that captures all key performance measures, and begin to 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 that considers employee safety and security, building operations, utilities, facilities, new construction, repairs and pollution prevention,

within Headquarters and nationwide. Plans for 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 helps fulfill the scientific and functional requirements of our programs. In FY1999, EPA will make significant progress in 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 conduct performance audit work with a focus on environmental results, and assist the Agency in implementing performance evaluation to promote full compliance with GPRA. We will continue emphasizing contract and assistance agreement audits and investigations to ensure integrity in the application of Agency resources. For example, 15 construction grant closeout audits are scheduled to be conducted in 1999. We plan to increase collaboration between

audits and investigations to reduce the risk of fraud and other improprieties. We will also increase assistance services to the Agency to help resolve significant management problems and achieve maximum efficiency and effectiveness. These strategies will assist the Agency in accomplishing its mission and improve the performance and integrity of its programs and operations.

STATUTORY AUTHORITY

- Administrative Procedure Act
- Annual Appropriations Act
- Civil Rights Act of 1964, Title VII
- Civil Rights Act of 1964, Title VI
- Clean Water Act, Clean Air Act, 41 CFR and D.C. Recycling Act of 1998
- Clinger-Cohen Act
- Comprehensive Environmental Response, Compensation, and Liability Act
- Computer Security Act
- Electronic Freedom of Information Act
- EPA's Environmental Statutes, 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)
- Federal Manager's Financial Integrity Act (1982)
- Federal Property and Administrations Service Act
- Freedom of Information Act
- Government Management Reform Act (1994)
- Inspector General Act of 1978
- Inspector General Act Amendments of 1988
- Paperwork Reduction Act
- Privacy Act
- Public Buildings Act
- The Chief Financial Officers Act (1990)
- The Government Performance and Results Act (1993)
- The Prompt Payment Act (1982)
- Title 5 United States Code.

Resource Summary

(Dollars in thousands)

	FY 1999 Pres. Budget	FY 1999 Enacted
Effective Management	\$659,860.5	\$645,174.0
Executive Leadership	\$30,895.9	\$31,112.6
EPM	\$30,806.5	\$31,023.2
SF	\$89.4	\$89.4
Management Services, Administrative, and Stewardship	\$234,293.9	\$220,806.1
EPM	\$173,112.3	\$162,828.9
S&T	\$226.0	\$326.0
LUST	\$1,047.6	\$1,047.7
OIL	\$3.3	\$3.3
IG	\$72.1	\$72.1
SF	\$59,832.6	\$56,528.1
Building Operations, Utilities and New Construction	\$354,753.9	\$353,366.1
EPM	\$238,022.3	\$233,245.5
B&F	\$52,948.0	\$56,948.0
LUST	\$1,033.6	\$1,033.6
OIL	\$537.8	\$537.8
IG	\$2,537.9	\$4,021.9
SF	\$59,674.3	\$57,579.3
Provide Audit and Investigative Products and Services	\$39,916.8	\$39,889.2
EPM	\$619.7	\$592.2
IG	\$28,544.0	\$39,297.0
SF	\$10,753.1	\$0.0
Total Workyears:	2,974.7	2,991.2

Strategic Objective: Executive Leadership

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
EMPACT	\$1,000	\$81
Civil Rights/Title VI Compliance	\$1,312	\$1,637
Immediate Office of the Administrator	\$3,691	\$2,791
Administrative Law	\$2,124	\$2,324
Children's Health, Program Development and Coordination	\$5,716	\$6,158

Annual Performance Goals and Measures

CHILDREN'S HEALTH

By 1999: By the end of 1999, evaluate 5 EPA standards to ensure they are protective of children's health.

Performance Measures:

Target:

Re-evaluate standards to ensure they consider children's special health needs

<5 standards

Baseline: Baseline will be established in 2000.

Strategic Objective: Management Services, Administrative, and Stewardship

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Human Resources Management	\$22,297	\$21,932
Contracts Management	\$27,674	\$24,986
Grants Management	\$9,680	\$8,569
Information Technology Management	\$24,978	\$21,975
Reinventing Environmental Information (REI)	\$2,500	\$2,507
Environmental Finance Center Grants (EFC)	\$940	\$1,065
Planning and Resources Management	\$73,627	\$69,120
Regional Management	\$41,046	\$42,535

Annual Performance Goals and Measures

GPRA IMPLEMENTATION

By 1999: By the end of 1999, the Agency can plan and track performance against annual goals and capture 100% of costs through the new PBAA structure, based on modified budget and financial accounting systems, a new accountability process and new cost accounting mechanisms.

Performance Measures:

Target:

The Accountability System tracks accomplishments against annual performance goals and measures and provides the information necessary for evaluating and adjusting program activities.

9/30/99

Baseline: OCFO's Congressional/Vital Few Annual Performance Goal and Measures reflect top mission priorities that will be achieved in FY 1999.

PERFORMANCE-BASED CONTRACTING

By 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:**Target:**

Percentage of contracts utilizing performance-based statements of work.

10 Percent

Baseline: Baseline is 10% in 1999, 5% in 1998, and 0% in 1997.

Y2K COMPLIANCE

By 1999: All mission critical systems will continue to support core Agency functions without interruption across Year 2000 date change.

Performance Measures:**Target:**

Percentage of mission-critical systems functioning in accordance with Y2K requirement.

100 Percent

Baseline: In 1999, all 58 mission critical systems are operating properly and are functioning in accordance with Y2K requirements.

Strategic Objective: Building Operations, Utilities and New Construction

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
New Construction: New Headquarters Project	\$15,945	\$15,945
New Construction: RTP New Building Project	\$32,000	\$36,000
Facility Operations: Repairs and Improvements	\$15,428	\$15,428
Facility Operations: Security	\$12,962	\$12,962
Facility Operations: Agency Rental/ Direct Lease	\$170,572	\$170,572
Facility Operations: Agency Utilities	\$10,715	\$10,015
Regional Program Infrastructure	\$67,143	\$66,532

Annual Performance Goals and Measures

NEW HQ CONSOLIDATION

By 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:	Target:
Percentage of the Interstate Commerce Commission (ICC)/Customs building completed.	50 Percent
Percentage of EPA personnel consolidated into Headquarters complex.	38 Percent
Complete buildout 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.

RTP CONSTRUCTION

By 1999: Complete at least 50% of construction of the consolidated research lab at Research Triangle Park North Carolina.

Performance Measures:**Target:**

Percent of new RTP building construction completed.

50 Percent

Baseline: Complete 22% of construction at RTP.

Strategic Objective: Provide Audit and Investigative Products and Services

Key Programs

(Dollars in thousands)

	1999 Pres Bud	1999 Enacted
Contract Audits	\$4,951	\$4,951
Assistance Agreement Audits	\$6,831	\$6,831
Program Audits	\$10,264	\$10,264
Financial Statement Audits	\$4,188	\$4,188
Program Integrity Investigations	\$912	\$912
Assistance Agreement Investigations	\$2,650	\$2,650
Contract and Procurement Investigations	\$2,913	\$2,913
Employee Integrity Investigations	\$953	\$953

Annual Performance Goals and Measures

PROVIDE OBJECTIVE, TIMELY, AND INDEPENDENT AUDITING, CONSULTING, AND INVESTIGATIVE SERVICES

In 1999: The OIG will provide objective, timely, and independent auditing, consulting, and investigative services through such actions as completing 15 construction grant closeout audits.

Performance Measures:	Target:
Monetary value of recommendations, questioned costs, savings, and recoveries.	\$118.5 M
Monetary value of fines, judgements, settlements, restitutions, and savings	\$4.16 M
IG recommendations made to improve the economy, efficiency, and effectiveness of operations and environmental programs.	57 Recom/Action
Judicial, Administration and other actions taken to enforce law, reduce or avoid risk.	52 Actions
Construction Grants Closeout Audits	15 Audits

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%.

EXTERNAL FACTORS

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.

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.

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.

VERIFICATION AND VALIDATION OF PERFORMANCE MEASURES

The Office of Children's Health Protection will evaluate 5 EPA standards to ensure they consider the special needs of children's health. Records will be maintained. Agency financial systems such as IFMS, MARS, EPAYS, and 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 Financial Managers Integrity Act (FFMIA), and the Government Performance and Results Act (GPRA).

An accountability system is currently being designed to manage the data for all key performance measures to track progress toward annual performance goals, against which the Agency will be held accountable to Congress and the public. The NPMs will be the source of the data in the accountability system and will be responsible for its accuracy and quality.

The Agency requires a timely, accurate and useful data system for program audit follow-up. The Management Audit Tracking System (MATS)

is such a data system. Through MATS, the Agency aggressively tracks follow-up on its Office of Inspector General (OIG) audit findings and recommendations.

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.

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 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 workload assignments, 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 on personnel time charges and

verifying that these charges 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.

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.

COST 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

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

using a 7 percent discount rate. EPA plans to issue this final rule in June 1999.

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, anti-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 an 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 SCA 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 and 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, bioaccumulating 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 one 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.

