

**Environmental Protection Agency**  
**2004 Annual Performance Plan and Congressional Justification**  
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## Environmental Protection Agency

### FY 2004 Annual Performance Plan and Congressional Justification

#### Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

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

#### Resource Summary

(Dollars in thousands)

	<b>FY 2002 Actuals</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
<b>Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems</b>	<b>\$323,441.9</b>	<b>\$326,651.9</b>	<b>\$346,340.6</b>	<b>\$19,688.7</b>
Reduce Public and Ecosystem Risk from Pesticides	\$56,169.1	\$55,409.8	\$57,313.1	\$1,903.3
Reduce Risks from Lead and Other Toxic Chemicals	\$37,745.8	\$36,355.9	\$38,722.5	\$2,366.6
Manage New Chemical Introduction and Screen Existing Chemicals for Risk	\$76,449.4	\$77,538.2	\$81,531.2	\$3,993.0
Ensure Healthier Indoor Air.	\$40,290.3	\$40,322.7	\$42,380.4	\$2,057.7
Facilitate Prevention, Reduction and Recycling of PBTs and Toxic Chemicals	\$48,461.0	\$46,115.9	\$49,958.2	\$3,842.3
Assess Conditions in Indian Country	\$64,326.3	\$70,909.4	\$76,435.2	\$5,525.8
Total Workyears	1,174.7	1,193.9	1,188.9	-5.0

#### Background and Context

The underlying principle of the activities in this goal is the application of pollution prevention. Preventing pollution before it may harm the environment or public can be cheaper than cleanup and remediation that may be more costly. EPA uses a number of approaches to protect public health and the nation's ecosystems from the risks of exposure to pesticides and/or toxic chemicals.

While EPA continues to implement “the reasonable certainty of no harm” standard mandated by the Food Quality Protection Act (FQPA) in its regulatory decisions, it also works with pesticide users on adopting less toxic methods of pest management that reduce or eliminate toxic pesticides entering indoor and outdoor environments.

Regarding industrial emissions of toxic chemicals, in 2000, TRI facilities reported 7.1 billion pounds of TRI reported chemicals released to the environment, 3.2 billion pounds recovered for energy and 14.3 billion pounds of waste treated.<sup>1</sup> This represents a decrease of eight percent or 0.6 billion pounds over the previous year. Reducing waste, and reducing the toxic chemicals that are used in industrial processing, protects the environment and also improves efficiency, thereby lowering costs for industry.

Pollution prevention involves changing the behavior of those that generate the pollution and fostering the wider use of preventive practices as a means to achieve cost effective, sustainable results. For example, the Design for the Environment and Green Chemistry programs strive to change the behavior of chemists and engineers to incorporate pollution prevention and environmental risk considerations in their daily work. The Strategic Agricultural Partnership Initiative and the Pesticide Environmental Stewardship Program cooperate with USDA, States, and non-governmental organizations to demonstrate with farmers integrated pest management strategies that reduce pesticide residues in the environment.

In Goal 4, the Agency targets certain chemicals of high risk as well as the full range of pollutants addressed by the pollution prevention program. Many chemicals are particularly toxic to children. For instance, at high levels, lead damages the brain and nervous system and can result in behavioral and learning problems in children.<sup>2</sup> Despite a dramatic reduction in lead exposure among young children over the last twenty years due in large part to reduction in United States use of leaded gasoline, there were still approximately 900,000 children in the United States with elevated blood lead levels in the early 1990's, due primarily to exposure to lead-based paint and dust.<sup>3</sup> Data from the Center for Disease Control's (CDC's) 2000 National Health and Nutrition Evaluation Survey (NHANES), such as mean and median blood lead levels in the general United States population, indicate that Federal, State, and Tribal programs to reduce childhood lead poisoning from exposure to lead-based paint and dust have succeeded in lowering blood-lead levels from the early-1990's levels. New data released by CDC in January 2003 indicate that the national incidence of elevated lead blood levels among children may now be approximately 400,000 cases, based on combined 1999 and 2000 samples. Collaboration among partners continues in an effort to further reduce or eliminate this preventable condition.

On other fronts, exposure to asbestos, polychlorinated biphenyls (PCBs) and some pesticides in our buildings and in the environment poses risks to humans as well as wildlife.<sup>4</sup>

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<sup>1</sup> 2000 Toxic Release Inventory (TRI) Public Data Release - Executive Summary (EPA 260 S 02 001).

<http://www.epa.gov/tri/tridata/tri00/index.htm>

<sup>2</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

<sup>3</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

<sup>4</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

Pesticides and chemicals that may act as endocrine disruptors at ambient levels is an area of increased concern for human health and the environment. For other common chemicals, risks may not be known. The screening and testing of chemicals about to enter the market, combined with the review of the most common chemicals already in use through the Chemical Right-to-Know Program, fills critical gaps in our knowledge about the effects of chemicals on human health and the environment.

Under Federal environmental statutes, the Agency has responsibility for assuring human health and environmental protection in Indian country. Since 1984, EPA policy has been to work with tribes on a government-to-government basis that affirms the vital trust responsibility that EPA has with every Federally-recognized Tribal government. EPA endeavors to address Tribal environmental priorities, ensure compliance with environmental laws, provide field assistance, assure effective communication with tribes, allow flexibility in grant programs, and provide resources for Tribal operations.

### **Means and Strategy**

The diversity and sensitivity of America's environments (communities, homes, workplaces and ecosystems) require EPA to adopt a multi-faceted approach to protecting the public from the potential threats posed by pesticides, toxic chemicals and other pollutants. The underlying principle of the activities in this goal is the application of pollution prevention practices, which can be cheaper and smarter than cleanup and remediation, as evidenced by the high cost of Superfund, Resource Conservation and Recovery Act (RCRA), and Polychlorinated Biphenyls (PCB) cleanups. Pollution Prevention (P2) involves changing the behavior of those that cause the pollution and fostering the wider use of preventive practices as a means to achieve effective, sustainable results.

Under this Goal, EPA ensures that pesticides and their application methods do not present unreasonable risks to human health, the environment, and ecosystems. In addition to the array of risk-management measures specified in the registration authorities under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for individual pesticide ingredients, EPA has specific programs to foster worker and pesticide-user safety, ground-water protection, and the safe use of pesticides and other pest control methods. These programs work to ensure the comprehensive protection of the environment and wildlife, endangered species in particular, and to reduce the contribution of pesticides to ecological threats such as pollutant loading in select geographic areas. EPA is also addressing emerging threats such as endocrine disruptors by developing and implementing new screening technologies to assess a chemical's impact on hormonal activity.

Within the pesticide program, EPA pursues a variety of field activities at the regional, State, Tribal and local levels, including the promotion of pesticide environmental stewardship and Integrated Pest Management (IPM). States and tribes are vital partners in our work to implement FQPA. The voluntary partnerships and outreach programs that help farmers transition away from the riskier products are often catalyzed by State participation. These programs, combined with the availability of newer and safer pesticides, are having a real impact. In 2004 we expect at least 8.5 percent of acre-treatments will use reduced-risk pesticides. We

are seeing a reduction in wildlife impacts from pesticides as well, and in 2004 we project an additional five percent reduction in reported incidents of wildlife mortalities, from the 1995 level. That means fewer bird casualties and fewer fish kills. The accumulation of these improvements will mean safer food, improved biodiversity, and a cleaner environment.

The Agency remains committed to safeguarding our Nation's communities, homes, workplaces and ecosystems. Preventing pollution through regulatory, voluntary, and partnership actions -- educating and changing the behavior of the public -- is a sensible and effective approach to sustainable development while protecting our nation's health. Two groups with significant potential to effect environmental changes are industry and academia. In the past decade, the Agency has successfully pursued a number of pollution prevention programs with both of these groups, including the groundbreaking 33/50 Program, which in 1991 introduced voluntary collaboration into EPA's environmental protection efforts, and the Presidential Green Chemistry Challenge Award, which stimulates industry and academia toward the development of innovative new and improved industrial chemicals and processes. The Agency continues to expand its use of voluntary mechanisms to leverage pollution prevention, focusing on the health care service sector in fostering the American Hospital Association's Hospitals for a Healthy Environment partnership program, which have more than 2,000 participants in 2004. Likewise, improved understanding of the potential risks to health from airborne indoor toxic chemicals will strengthen our ability to reduce residents' exposure through voluntary changes in behavior and potential product reformulation.

Preventing pollution through partnerships is also central to EPA's Chemical Right-to-Know Program (ChemRTK), which has already started providing the public with information on the basic health and environmental effects of the 2,800 high production volume (HPV) chemicals in the United States (chemicals manufactured in or imported into the United States in quantities of at least one million pounds annually). Most residents come into daily contact with many of these chemicals, yet relatively little is known about their potential impacts. Getting basic hazard testing information on large volume chemicals is the focus of the "HPV Challenge Program," a voluntary program challenging industry to develop chemical hazard data critical to enabling EPA, State, tribes, and the public to screen chemicals already in commerce for any risks they may be posing.

EPA has two major strategies to meet its human health objective for indoor air quality: increasing public awareness and increasing partnerships with non-governmental and professional entities. EPA raises public awareness of actual and potential indoor air risks so that individuals can take steps to reduce exposure. Outreach activities, in the form of educational literature, media campaigns, hotlines, and clearinghouse operations, provide essential information about indoor air health risks not only to the public, but to the professional and research communities as well. Underpinning EPA's outreach efforts is a strong commitment to environmental justice, community-based risk reduction, and customer service. Through partnerships with EPA disseminates multi-media materials encouraging individuals, schools, and industry to take action to reduce health risks in their indoor environments. In addition, EPA uses technology transfer to improve the ways in which all types of buildings, including schools, homes, and workplaces, are designed, operated, and maintained. To support these voluntary approaches, EPA incorporates the most current science available as the basis for recommending ways that people can reduce exposure to indoor contaminants.

EPA is also taking the initial steps to address the potential threat of endocrine disrupting chemicals on the health of humans and wildlife. Work focuses on developing and validating new chemical screens and tests to isolate those chemicals and characterize the threat.

Also central to the Agency's work under this goal in FY 2004 will be continued attention to reducing potential risk from persistent, bioaccumulative and highly toxic chemicals (PBTs) and from chemicals that have endocrine disruption effects. PBT chemicals are of particular concern not only because they are toxic but also because they may remain in the environment for a long period of time, are not readily destroyed, and may build up or accumulate to high concentrations in plant or animal tissue. In cases involving mercury and PCBs, they may accumulate in human tissue.

EPA programs under this Goal have many indirect effects that significantly augment the stream of benefits they provide. For example, each year the Toxic Substances Control Act (TSCA) New Chemicals program reviews and manages the potential risks from approximately 1,800 new chemicals and 40 products of biotechnology that enter the marketplace.<sup>5</sup> Since its inception, approximately 17,000 new chemicals reviewed by the program have entered United States commerce. This new chemical review process not only protects the public from the possible 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.

The New Chemicals program also encourages industry to develop safer, or "green," chemicals as substitutes for more dangerous ones. In FY 2004 the Agency will continue to provide industry training in the use of the same tools that EPA uses to assess new chemicals, enabling companies to make smarter choices at earlier stages in their design process, reducing government costs, and hastening the entry of safer new products into the marketplace. Through the Green Chemistry program, the use and generation of 38 million pounds and approximately three million gallons of hazardous chemicals have been eliminated, and 275 million gallons of water have been saved.<sup>7</sup> A PART evaluation of the New Chemicals program showed that it had very strong purpose and management and collaborates with other Federal agencies. The assessment also found that while the program has to some extent shown results, it lacks adequate long-term measures. Recommendations from the assessment include improving the program's strategic planning, which includes an independent evaluation of the program. The Agency will also establish more outcome-oriented measures including at least one efficiency measure.

The Design for the Environment (DfE), Green Chemistry, and Green Engineering programs build on and expand new chemistry efforts. They target industry and academia to maximize pollution prevention. Our DfE Program forms partnerships with industry to find sensible solutions to prevent pollution. In one example, taking a sector approach, EPA has worked with the electronics industry to reduce the use of formaldehyde and other toxic chemicals

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<sup>5</sup> U.S. EPA, Office of Pollution Prevention and Toxics, TSCA New Chemicals Program Annual Report and the TSCA New Chemicals Program Website <http://www.epa.gov/oppt/newchems/accomplishments.htm>

<sup>8</sup> U.S. EPA, Office of Pollution Prevention and Toxics, Design for Environment, [www.epa.gov/dfc](http://www.epa.gov/dfc)

in the manufacture of printed wiring boards.<sup>8</sup> Our Green Chemistry Program also forms partnerships with industry and the scientific community to find economically viable technical solutions to prevent pollution. In addition, the Green Engineering Program works with the American Society of Engineering Education (ASEE) to incorporate Green Engineering approaches into engineering curricula.

Since this goal focuses on how the public lives in communities, it features the Agency's commitment to fulfilling its responsibility for assuring human health and promoting environmental protection in Indian country. EPA's policy is to work with tribes on a government-to-government basis that affirms the vital trust responsibility that EPA has with 572 Tribal governments and remain cognizant of the Nation's interest in conserving the cultural uses of natural resources.

Core elements of pollution prevention include minimizing toxic pollutants contained in hazardous waste streams and other pathways for the generation of toxic waste. This is accomplished through a variety of diverse regulatory and voluntary strategies, including fostering materials reuse and recycling, broad-based campaigns to re-engineer the consumption and use of raw materials, and promoting public resource conservation. These effective and sustainable programs reduce the need for storage, treatment or disposal of hazardous and municipal solid wastes, with the added benefit of reducing costs to industry and municipalities, reducing pollution and pollution control costs associated with production of virgin materials, conserving energy and energy costs, and reducing greenhouse gas emission.

In FY 2004, EPA's waste management program will increase consumer and individual awareness of environmental issues by implementing The Resource Conservation Challenge (RCC). Launched in 2002, this new campaign asks businesses, manufacturers and consumers to adopt a resource conservation ethic; to operate more efficiently; to purchase more wisely; and to make and use products that are easy to recycle and are composed of recycled materials. The Challenge also encourages the reduction of hazardous wastes containing priority chemicals through the National Waste Minimization Partnership Program. These effective and sustainable programs reduce the need for storage, treatment or disposal of hazardous or municipal wastes, with the added benefit of reducing costs to industry and municipalities. The 2003 House Subcommittee Report encouraged and supported the RCC strategy to identify opportunities to further the goal of resource conservation and recovery while remaining true to the mission of ensuring safe and protective waste management practices.

In several cases, achieving the strategic objectives under this goal is a shared responsibility with other Federal, State and Tribal partners. For example, EPA's role in reducing the levels of children's lead exposure involves promotion of Federal-state-tribe partnerships to decrease the number of specific sources of lead to children, primarily from addressing lead-based paint hazards. These partnerships emphasize development of a professional infrastructure to identify, manage and abate lead-based paint hazards, as well as public education and empowerment strategies, which fit into companion Federal efforts with Department of Health and Human Services (HHS), Department of Defense (DOD), Department of Energy (DOE), Department of Justice (DOJ), Centers for Disease Control (CDC), and Department of Housing and Urban Development (HUD). These combined efforts help to monitor lead levels in the environment, with the intent of virtually eliminating lead poisoning in children.

In 2004, EPA will also launch a set of expanded, multi-media Children's Health protection activities. The Agency will partner with several organizations and States to provide education and outreach on environmental issues affecting sensitive populations and will implement an Environmental Management Systems (EMS) approach for elementary schools. Through these approaches, State and local capacity to address sensitive populations will be developed, the number of asthma-related reportable health incidents and emergency room visits will decrease, and schoolchildren will have reduced exposures to poor indoor air quality, asbestos, mercury, pesticides and other hazardous chemicals.

## Research

Currently, there are significant gaps with regard to the understanding of actual human and ecological exposures to pesticides and toxic substances. To address those data gaps, EPA research will provide a strategic framework for developing an integrated suite of tools and models that will enhance EPA's procedures for assessing the risks to human health and ecological systems associated with commercial chemicals, microorganisms, and genetically modified organisms.

Several mechanisms are in place to ensure a high-quality research program. The Research Strategies Advisory Committee (RSAC) of EPA's Science Advisory Board (SAB), an independent chartered Federal Advisory Committee Act (FACA)<sup>9</sup> committee, meets annually to conduct an in-depth review and analysis of EPA's Science and Technology account. The RSAC provides its findings to the House Science Committee and sends a written report on the finding to EPA's Administrator after every annual review. Also, under the Science to Achieve Results (STAR) program all research projects are selected for funding through a rigorous competitive external peer review process designed to ensure that only the highest quality efforts receive funding support. In addition, EPA's scientific and technical work products must undergo either internal or external peer review, with major or significant products requiring external peer review. The Agency's Peer Review Handbook (2<sup>nd</sup> Edition)<sup>10</sup> codifies procedures and guidance for conducting peer review.

## **Strategic Objectives**

- Reduce Public and Ecosystem Risk from Pesticides
- Reduce Risks from Lead and Other Toxic Chemicals
- Reduce Exposure to and Health Effects from Priority Industrial/Commercial Chemicals
- Manage New Chemical Introduction and Screen Existing Chemicals for Risk
- Identify and Reduce Risks from Industrial/Commercial Chemicals

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<sup>9</sup> Federal Advisory Committee Act, Pub. L. 97-375, title II, Sec. 201(c), Dec. 21, 1982, 96 Stat. 1822.

<sup>10</sup> U.S. Environmental Protection Agency. (2000). Science Policy Council Peer Review Handbook. (EPA Publication No. EPA 100-B-00-001). Washington, D.C.: Government Printing Office



- Ensure Healthier Indoor Air
- Facilitate Prevention, Reduction and Recycling of PBTs and Toxic Chemicals
- Prevent, Reduce and Recycle Hazardous Industrial/Commercial Chemicals and Municipal Solid Waste
- Assess Conditions in Indian Country

## **Highlights**

EPA seeks to prevent pollution at the source as the first choice in managing environmental risks to humans and ecosystems. Where pollution prevention at the source is not a viable alternative, the Agency employs risk management and cost effective remediation strategies. Reducing pollution at the source will be carried out using a multi-media approach in the following environmental problem areas:

### Reduce Public and Ecosystem Risks from Pesticides

Reducing risk from exposure to pesticides requires a multi-faceted approach. Beyond being exposed through the food we eat, the general public, applicators, and farm workers may be exposed to pesticides through direct handling, groundwater contamination or aerial spray. One intention of the Food Quality Protection Act (FQPA) is to protect the public by shifting the nation toward reduced risk pesticides and safer pesticide use. Appropriate transition strategies to reduced risk pesticides are important to the nation to avoid disruption of the food supply or sudden changes in the market that could result from abruptly terminating the use of a pesticide before well-targeted reduced risk equivalents can be identified and made available. In 2004, the Agency will continue efforts to reach more farmers and grower groups, encourage them to adopt safer pesticides, use environmental stewardship and integrated pest management practices, and adopt a “whole farm” approach to environmental protection. Through these partnership programs the Agency has become more aware of the multiple pressures on our nation’s agricultural industry and the interaction of the various environmental requirements that affect it.

In addition, in FY 2004, the Agency will work with grower groups, states and tribes, and USDA to combine and magnify our efforts to meet the goals authorized in the Farm Bill for conservation activities. With USDA collaboration, EPA can deliver its unique expertise in pesticides, water, and air issues in an integrated way to the agricultural community. A majority of the environmental and conservation problems that are the most pressing for farmers include pesticide and pest management issues in which the National Resource Conservation Services (NRCS) of USDA has little experience or expertise. We will develop partnerships with a broad range of groups with agricultural interests, as well as stewardship strategies that produce measurable environmental results. We will also develop common measures and environmental indicators with USDA through this cooperative effort.

Through the Certification and Training (C&T) and Worker Protection (WP) programs, EPA will continue training and educating farm workers and employers on worker safety

practices and the dangers of pesticides. EPA will continue to protect the Nation's ecosystems and reduce adverse impacts to endangered species through various regulatory and voluntary programs, including the Pesticide Environmental Stewardship Program (PESP) which encourages the use of integrated pest management (IPM) approaches. The Agency will emphasize efforts with our Tribal partners to address pesticide issues and enhance the development of Tribal technical capacity, particularly in the areas of risk management, worker safety, training, and pollution prevention.

Together, the WP and the C&T programs address issues of safe pesticide use and pesticide exposure. These programs emphasize safeguarding workers and other pesticide users from occupational exposure to pesticides by providing training for workers, employers, and pesticide applicators and handlers. Training and certification of applicators of restricted use pesticides further ensures that workers and other vulnerable groups are protected from undue pesticide exposure and risk. Recertification requirements keep their knowledge current with label changes, application improvements, availability of new pesticides and other pesticide related issues. The Endangered Species program will enlist the support of the agricultural community and other interested groups to protect wildlife and critical habitats from pesticides. This voluntary program is carried out through communications and outreach efforts and in coordination with other Federal agencies. The Pesticide Environmental Stewardship Program (PESP) and other Integrated Pest Management (IPM) outreach efforts play pivotal roles in moving the nation to the use of safe pest control methods, including reduced risk pesticides. These closely related programs promote risk reduction through collaborative efforts with stakeholders to use safer alternatives to traditional chemical methods of pest control.

Antimicrobial sterilants and disinfectants are used to kill microorganisms on surfaces and objects in hospitals, schools, restaurants and homes. Antimicrobials require appropriate labeling and handling to ensure safety and efficacy. EPA remains focused on accurate product labeling and product efficacy and meeting other requirements for antimicrobial sterilants set forth by FQPA, as well as the reregistration of older antimicrobials to ensure they meet today's standards.

#### Reduce Risks from Lead and Other Toxic Chemicals

EPA is part of the Federal effort to address lead poisoning and elevated blood levels in children by assisting in, and in some cases guiding, Federal activities aimed at reducing the exposure of children in homes with lead-based paint. EPA is working with other Federal Agencies including the Department of Health and Human Services (HHS), Department of Housing and Urban Development (HUD), Department of Defense (DOD), Department of Energy (DOE), Consumer Product Safety Commission (CPSC), and Department of Justice (DOJ) on implementing a Federal strategy to virtually eliminate lead poisoning. During FY 2004, EPA will continue implementing its comprehensive program to reduce the incidence of lead poisoning and elevated blood-lead levels in children nationwide.

In 2004, EPA will continue the Lead Based Paint Training & Certification Program in all fifty States through EPA authorized State, territorial or Tribal programs or, in States and territories without EPA authorization, through direct implementation by the Agency. By the end of 2004, we expect to have provided the nation with more than 18,000 individuals and firms formally certified in properly abating lead paint hazards. In the lead regulatory program, EPA

will propose two major rules on renovation and remodeling activities and the de-leading of bridges and structures.

EPA will continue to implement the new Lead Hazards Standards Rule (finalized in 2001), the Lead Renovation Information Rule and the Real Estate Notification & Disclosure Rule. In 2004, EPA will develop a new program to improve work practices in removing lead-based paint from bridges and structures, capping a series of rules with wide-ranging impact on children's health.

For other chemicals whose risks are well established (such as PCBs, asbestos, and dioxin), reductions in use and releases are important to reducing exposure of the general population as well as sensitive sub-populations. In FY 2004, EPA's PCB control efforts will continue to encourage phase-out of PCB electrical equipment, ensuring proper waste disposal methods and capacity, and fostering PCB site cleanups. The Agency will continue to be part of an interagency effort to assess potential dioxin risks to the public, including the development of a dioxin strategy to respond to the latest science and addressing dioxin risk management in a more comprehensive cross-media approach.

#### Manage New Chemical Introduction and Screen Existing Chemicals for Risk

Under TSCA, EPA identifies and controls unreasonable risks associated with chemicals. EPA administers TSCA through two programs: the New Chemicals and Existing Chemicals programs. The Existing Chemicals program continues its review of the original 62,000 TSCA chemicals for health impacts. A PART evaluation of the Existing Chemicals program found that while the program has strong purpose and management, it lacks strategic planning and cannot demonstrate any long-term impact. The program has demonstrated few results: GAO found that EPA has been slow to address these chemicals, with EPA having reviewed approximately two percent of existing chemicals in the last 20 years. As a result of the assessment, EPA will establish a long-term measure and an efficiency measure. The program will also focus efforts to develop acute exposure chemical guidelines (AEGLs), which are important for homeland security response, recovery, and preparedness. EPA will also continue to implement its High Production Volume (HPV) Challenge program in an effort to address the gaps that the Existing Chemicals program has failed to address.

The HPV Challenge program aims to address a critical gap in the nation's knowledge about the health and environmental hazards of high production volume chemicals (HPVs). HPVs are chemicals that are manufactured in or imported into the United States in quantities of at least one million pounds per year. EPA is working with industry to make information about these chemicals available to the public so that it can make more informed consumer choices. The HPV Challenge program is already providing the public with information on the basic health and environmental effects of 2,800 HPVs. Industry response to the HPV Challenge has been overwhelming: more than 300 companies have voluntarily committed themselves to providing EPA with data for 2,196 of the 2,800 HPV chemicals.<sup>11</sup> EPA has already commenced its review

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<sup>11</sup> U.S. EPA, Office of Pollution Prevention and Toxics, High Production Volume Challenge Program, HPV Commitment Tracking System. Available at <http://www.epa.gov/chemrtk/viewsrch.htm>

and public posting of these company submissions. In FY 2004, EPA expects to make screening level health and environmental effects data publicly available for a cumulative 900 chemicals.

Under a parallel Voluntary Children's Chemical Evaluation Program that was launched in 2002, EPA and industry will collaborate in fully assessing the risks associated with chemicals to which children are exposed. With our state partners we will work to establish a series of pilot programs to address TSCA responsibilities at the State level, where local knowledge of unique problems or solutions can bring greater efficiencies to this wide-ranging program.

An important Agency priority is to develop and use valid chemical screens and tests to identify and characterize the risk of chemicals that may cause endocrine disruption in humans, fish and wildlife. In 2002 EPA put in place an Endocrine Disruptor Methods Validation Subcommittee (EDMVS) made up of approximately 25 scientific experts representing outside interest groups. These experts will meet through 2005 to provide advice and counsel to EPA on scientific issues associated with the conduct of studies necessary for validation of screening and testing methods in the Agency's Endocrine Disruptor Screening Program.

#### Ensure Healthier Indoor Air

In FY 2004, EPA will build on the success of its national "Indoor Air Quality (IAQ) Tools for Schools" (TfS) program and expand implementation of this program to more schools. Adoption of EPA's low-cost/no-cost guidelines for proper operation and maintenance of school facilities results in healthier indoor environments for all students and staff, but is of particular help to children with asthma, lessening the degree to which they are exposed to indoor asthma triggers. By increasing the number of schools where TfS indoor air quality guidelines are adopted and implemented, healthier indoor air will be provided for over a million students, staff, and faculty.

The Agency will continue to promote the adoption of healthy building practices in existing school operations. EPA expects, as a result of Agency programs, that 834,400 Americans will be living in healthier residential indoor environments in FY 2004. Part of meeting this goal includes expanding the Agency's successful education and outreach efforts to the public about sound indoor environmental management techniques with respect to asthma. In addition, the Agency will continue to focus on ways to assist the health-care community to raise its awareness of, and attention it pays to, indoor asthma triggers and their role in provoking asthma attacks in those with the disease. EPA, in conjunction with the Department of Health and Human Services (HHS), will continue to seek opportunities to interact with managed care organizations and health insurers to promote effective asthma care practices and to encourage greater emphasis on avoidance of asthma triggers, as part of a comprehensive asthma treatment regimen.

#### Facilitate Prevention, Reduction and Recycling of PBT's and Toxic Chemicals

Pollution prevention and waste minimization require a comprehensive effort of minimizing the quantity and toxicity of waste generated by industries, the government and individual citizens. EPA's role includes several specific activities addressing industrial hazardous waste and municipal and industrial solid waste.

Preventing pollution can be cost-effective to industry in cases where it reduces excess raw materials and energy use. P2 can also reduce the need for expensive “end-of-pipe” treatment and disposal, enable firms to avoid potential liability, and support quality improvement incentives in place at facilities. Current EPA strategies include institutionalizing preventive approaches in EPA’s regulatory, operating, and compliance/enforcement programs and facilitating the adoption of pollution prevention techniques by States, tribes, the academic community and industry.

One approach the Agency employs is the industrial sector-based focus that promotes cleaner technologies leading to a reduction of risks to health and the environment. EPA’s Design for the Environment (DfE) Program works in partnership with industry to develop comparative risk, performance, and cost information about alternative technologies, chemicals, and processes in order to make environmentally informed business decisions.

Now, more than ever, it is important for Americans to make sound environmental decisions. EPA provides the national leadership necessary to reduce the generation of municipal and industrial solid waste regulated under RCRA Subtitle D and to improve the recovery and conservation of materials and energy through source reduction and recycling. EPA encourages source reduction of municipal solid waste through its WasteWise program and fosters recycling and the recycling market through such programs as Pay-As-You-Throw and Jobs Through Recycling. In addition, working with public and private sector stakeholders, EPA promotes financial and technological opportunities for recycling/reuse businesses. In FY 2004, EPA will continue to implement The Resource Conservation Challenge (RCC) using a broad range of methods and tools to help businesses, manufacturers, and consumers to adopt a resource conservation ethic. The Agency will serve as a catalyst for innovative source reduction and recycling in many industrial sectors, including waste reduction opportunities for construction and demolition debris, food wastes, tires, electronics equipment, carpet, transport packaging, and plastic beverage packaging.

In the hazardous waste arena, regulated under RCRA Subtitle C, the Agency’s focus is on reducing the presence of 30 priority chemicals in hazardous waste by 50 percent by FY 2005 (compared to a 1991 baseline). This goal is consistent with other national and international toxic chemical reduction efforts. In FY 2004 the Agency will continue to encourage and support implementation at the regional, state and local levels through voluntary pollution prevention partnerships that not only make economic sense, but also decrease human and environmental exposure to toxic wastes. By FY 2004, EPA plans to initiate partnerships with companies willing to make specific commitments to reduce priority chemicals in waste as part of the Waste Minimization Partnership.

In FY 2004, the Agency will continue reducing the barriers to safe recycling of hazardous waste through changes to recycling regulatory standards and ongoing outreach to stakeholders to explore additional innovations. EPA will place particular emphasis on ways to increase safe hazardous waste recycling while reducing the burden for both small and large businesses in selected sectors, such as the printing, electronics recycling, metal finishing and chemical industries, as well as in laboratories affiliated with educational institutions.

The Green Chemistry Challenge Program continues to be an effective catalyst for the behavioral change necessary to drive the research, development, and implementation of green chemistry technologies. In addition, this program also continues to provide an opportunity to quantitatively demonstrate the technical, environmental, and economic benefits that green chemistry technologies offer. In 2004, the Green Chemistry Program will be focusing its outreach, awards, and research efforts to target audiences not currently involved in green chemistry product and process design, and specific high priority chemicals, products, and/or processes for which safer alternatives are not available.

To address continuing issues associated with PBTs, EPA launched a cross-office, cross-media PBT program in FY 1999. Through this effort, the Agency seeks to prevent, minimize and, when possible, eliminate PBTs, which are harmful to both human health and the environment. In FY 2004, the Agency will publish its Mercury National Action Plan with long-term goals for EPA's future mercury activities, and will continue the Agency's ongoing mercury activities aimed at reducing releases, reducing exposure, reducing use in products and processes, and ensuring safe management of wastes and supplies. A key element of this Action Plan already being implemented is the Hospitals for a Healthy Environment (H2E) program, which is a collaborative effort among EPA, the American Hospital Association, Health Care Without Harm, and the American Nurses Association. As voluntary H2E participants, hospitals and health care facilities pledge to eliminate mercury use by 2005 and to reduce total hospital waste by 50 percent by 2010. In 2004, H2E will continue to enroll partners. It is expected that as many as one-third of the nation's 6,000 hospitals will pledge to the program.

#### Assess Conditions in Indian Country

EPA places particular priority on working with Federally Recognized Indian tribes on a government-to-government basis to improve environmental conditions in Indian country in a manner that affirms the vital trust responsibility that EPA has with some 572 Tribal governments. The Agency will concentrate on building Tribal programs and strive to complete a documented baseline assessment of environmental conditions for tribes. These assessments will provide a blueprint for planning future activities identified in Tribal/EPA Environmental Agreements (TEAs) or similar Tribal environmental plans to address and support priority environmental multi-media concerns in Indian country.

In FY 2004, EPA is requesting a total of \$62.5 million for Indian General Assistance Program grants. These resources will allow most tribes to support at least one person working in their community to build a strong, sustainable environment for the future. These stewards perform vital work by assessing the status of a tribe's environmental condition and building an environmental program tailored to that tribe's needs. Another key role of this workforce is to alert EPA of serious conditions requiring attention in the near term so that, in addition to assisting in the building of Tribal environmental capacity, EPA can work with the tribe to respond to immediate public health and ecological threats.

The Administration evaluated the Indian General Assistance Program (GAP) this past year using the Performance Assessment Rating Tool (PART). The evaluation found that the program's purpose is very clear. However, the program needs to develop new long term performance measures that focus on environmental outcomes, rather than processes.

EPA continues to consider additional approaches on how EPA and Indian tribes might work in concert to protect public health and the environment in Indian country. As part of that effort, EPA is proposing to continue authority first granted in FY 2001 to enter into cooperative agreements with tribes to assist EPA in implementing environmental programs in instances where the tribe has not achieved primacy. Implementation of this approach would allow for a more gradual transition to full program authorization by allowing for varying degrees of Tribal involvement based on an individual tribe's capabilities and interests.

### Research

In FY 2004, research will be conducted to address the need for exposure and effects methods to evaluate the special sensitivities of children to pesticides and other toxic chemicals. The methods are developed to evaluate endpoints of toxicity that are qualitatively different from those of concern for adults and the effects of exposures that are quantitatively different because of factors such as body weight, time spent in various micro environments and contact with potentially contaminated surfaces.

Also, EPA will continue ecosystem effects research to address the development of appropriate screening and higher tier ecological effects models, the development of pharmacokinetic models to estimate/extrapolate tissue concentration of chemical agents from laboratory test organisms to wildlife species of concern, and the relative influence of exposure to chemicals and other environmental agents, habitat alterations and land use, and natural variability on sustainability of wildlife populations. In FY 2004, EPA will deliver the methodology to evaluate population-level effects of pesticides on wildlife and aquatic species.

Finally, EPA will continue research in biotechnology and draw on its expertise in risk assessment to evaluate current methodology and, where necessary, develop new methods or new approaches to risk assessment of biotechnology products. Special areas of focus in biotechnology will be risk communication, monitoring, ecological assessment, and risk management to develop effective strategies to mitigate risks when unintended adverse consequences occur and to advance the application of socio-economic methods to better understand issues related to public acceptance of genetically modified products.

### **External Factors**

The ability of the Agency to achieve its strategic goals and objectives depends on several factors over which the Agency has only partial control or influence. EPA relies heavily on partnerships with states, tribes, local governments, the public 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, as necessary. 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.

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 specified.

Large-scale accidental releases or rare catastrophic natural events 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 which include among others, new products, amendments, and uses, so its projection of regulatory workload is subject to change.

The Agency's ability to achieve its objective of facilitating prevention, reduction and recycling of Persistent, Bioaccumulative, and Toxic chemicals (PBTs) could be impacted by the increased flexibility provided 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. To mitigate this potential issue, EPA is working with the Environmental Council of States (ECOS) to develop core measures and coordinating with states to reduce PBTs in hazardous waste and develop tools that will focus state activities on shared EPA and state goals.

Achieving our objective for Indian country 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 and sound environmental capabilities. In addition, EPA also works with other Federal Agencies, the Department of Interior (US Geological Survey, Bureau of Indian Affairs, and Bureau of Reclamation), the National Oceanic and Atmospheric Administration, the Indian Health Service and the Corps of Engineers to help build programs on Tribal lands. Changing priorities in these agencies could impact their ability to work with EPA in establishing and implementing strategies, regulations, guidance, programs and projects that affect Indian tribes.



## Environmental Protection Agency

### FY 2004 Annual Performance Plan and Congressional Justification

#### Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

**Objective:** Reduce Public and Ecosystem Risk from Pesticides

By 2005, public and ecosystem risk from pesticides will be reduced through migration to lower-risk pesticides and pesticide management practices, improving education of the public and at risk workers, and forming "pesticide environmental partnerships" with pesticide user groups.

#### Resource Summary (Dollars in Thousands)

	<b>FY 2002 Actuals</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
<b>Reduce Public and Ecosystem Risk from Pesticides</b>	<b>\$56,169.1</b>	<b>\$55,409.8</b>	<b>\$57,313.1</b>	<b>\$1,903.3</b>
Environmental Program & Management	\$42,040.7	\$41,358.0	\$43,226.3	\$1,868.3
Science & Technology	\$978.2	\$966.3	\$986.8	\$20.5
State and Tribal Assistance Grants	\$13,150.2	\$13,085.5	\$13,100.0	\$14.5
Total Workyears	237.3	239.1	233.7	-5.4

#### Key Program (Dollars in Thousands)

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Congressionally Mandated Projects	\$1,700.0	\$0.0	\$0.0	\$0.0
Endocrine Disruptor Screening Program	\$750.5	\$768.9	\$768.0	(\$0.9)
Facilities Infrastructure and Operations	\$3,350.0	\$3,423.3	\$3,521.9	\$98.6
Legal Services	\$308.2	\$328.6	\$343.0	\$14.4
Management Services and	\$382.5	\$384.1	\$333.5	(\$50.6)

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Stewardship				
Partnerships to Reduce High Risk Pesticide Use	\$10,407.0	\$12,279.8	\$11,686.2	(\$593.6)
Pesticide Registration	\$10,609.7	\$11,016.6	\$10,938.8	(\$77.8)
Pesticide Reregistration	\$3,793.3	\$3,907.2	\$4,152.7	\$245.5
Pesticides Program Implementation Grant	\$13,085.5	\$13,085.5	\$13,100.0	\$14.5
Regional Management	\$0.0	\$21.9	\$17.9	(\$4.0)
Safe Pesticide Applications	\$11,157.2	\$10,193.9	\$12,451.1	\$2,257.2

### **FY 2004 Request**

EPA will continue to assist farmers in transitioning to reduced risk pesticides and pest management practices as the Agency continues to implement the Food Quality Protection Act (FQPA) and restricts or removes older, riskier pesticides from the market. Agriculture's effects on surface water quality, groundwater quality, air quality, food quality, habitat, and other areas of concern can be significant thus a series of complex regulatory and non-regulatory control measures addressing media-specific environmental issues is needed. In FY 2004, EPA will continue to use a "whole farm approach" to pesticide management and pollution prevention. This approach simultaneously considers numerous risks associated with the agricultural use of pesticides, including spray drift, chemical runoff, pesticide disposal, groundwater protection, worker protection, and pesticide application techniques. This allows the Agency to pursue an integrated approach to pollution prevention.

EPA will continue its commitment under this objective to protect agricultural workers, to certify and train pesticide applicators, to protect endangered species, non-target species such as benign insects, fish and wildlife, and ecosystems from the harmful effects of pesticides, to develop and implement environmental stewardship and integrated pest management pollution prevention strategies and to protect our nation's groundwater from pesticide contamination. Finally, EPA will provide \$500, 000 in "seed money" to co-fund projects in combination with USDA resources. Joint funding will help establish a more consistent EPA presence as a partner with USDA and other organizations in addressing environmental issues associated with agriculture, and a more consistent Agency voice in the national dialogue on agriculture.

#### Reduce Human Exposure to Pesticide Use

In 2004, EPA will continue its partnership with states and tribes in educating workers, farmers and employers on the safe use of pesticides and worker safety. The Certification and Training (C&T) and the Worker Protection (WP) programs protect agricultural workers, employers, applicators, handlers and the public from the potential dangers posed by pesticides. The Worker Protection Standards offer protection to over three and a half million people who

work with pesticides at more than 560,000 workplaces. The C&T program increases the competence of the applicators in handling and applying pesticides through training and certification (and recertification every three to five years) of private and commercial applicators of restricted use pesticides. C&T and WP also provide safety training for pesticide handlers and agricultural workers. EPA will continue efforts to educate the public in the proper use of pesticides to prevent household and other pesticide misuse. EPA will focus its efforts in rural and urban areas with poor communities where there are disproportionate public health risks to residents, especially children.



EPA will employ product stewardship with manufacturers and distributors, and work with states to improve their certification and training programs. EPA continues to improve consumer product labels, communicate proper handling of pesticide containers and their distribution, and direct enforcement activities to prevent improper sales and use of agricultural pesticides. EPA continues to be concerned with the use of certain pesticides that are likely to show up in groundwater. The Agency is pursuing options to assess and manage pesticide use and contamination potential of those pesticides. The Agency’s longstanding multi-media Groundwater Strategy and the development of pesticide management plans at the State level provide an ongoing means of preventing pesticide contamination of our groundwater resources. EPA also examines leaching potential as new pesticides are registered and older pesticides are reviewed for environmental impacts.

Regions will lead the development of FQPA transition projects with commodity groups and provide strategic and technical assistance on project design, implementation, and evaluation. The “whole farm” approach, conducted in cooperation with USDA and FDA, will focus on area-specific problems. Due to variations in crops, pests and weather patterns in different locales, a regional approach will be employed to address local needs. This approach will rely on partnerships between EPA, State agencies (Departments of Agriculture, Departments of Environment and Land Grant Universities) and agricultural groups (farm bureaus and major commodity groups). The first stage of the initiative evaluates current farm operations including pesticide risk reduction technologies, Integrated Pest Management (IPM) techniques and Best Management Practices (BMPS), soil and water conservation, handling and storage of hazardous materials and solid waste management. Model or demonstration sites are used for purposes of outreach, education and compliance assistance for other agricultural operations throughout the state.

## Reduce Environmental Exposure to Pesticide Use

In FY 2004, EPA and USDA will continue to provide information about pest control options, organize and deliver pest management educational programs for agricultural producers, consumers, and other stakeholders on reduced risk pesticides and alternative pest control methods, such as IPM, through the Pesticide Environmental Stewardship Program (PESP). EPA will also continue to support the development and evaluation of new pest management technologies.

The Pesticide Environmental Stewardship Program (PESP) promotes risk reduction through increasing the use of safer alternatives to traditional chemical methods of pest control. PESP, through voluntary partnerships with pesticide users, seeks to reduce both health and environmental risks while incorporating pollution prevention strategies. Partners and supporters of PESP play vital roles in developing common sense approaches to pesticide risk reduction, including use of integrated pest management (IPM), biological and cultural controls, and weather and pest data decision models. PESP supporters have an interest in risk reduction because they use agricultural products or represent groups affected by pesticides.

Although this program began prior to FQPA in 1994, its focus is consistent with the statute's goals in reducing risk in agricultural and nonagricultural settings. PESP grants

provide assistance to partners and supporters in developing and implementing risk reduction strategies. EPA will continue to coordinate with USDA in encouraging and supporting IPM practices, fostering the managed use of an array of biological, cultural, mechanical, and chemical

### **Opportunities for collaboration in implementing the Farm Security and Rural Investment Act of 2002**

An important new opportunity has been created for EPA with the passage of the Farm Act, which authorizes an 80 percent increase in the money available to support conservation programs. Over the next six years, \$9 billion has been allocated for the Environmental Quality Incentives Program (EQIP) and \$2 billion for the newly created Conservation Security Program (CSP) both of which are intended to increase the use of environmentally sound production practices.

Using a relatively small amount of EPA resources, the Agency will work with grower groups, States and tribes, and USDA to combine and magnify our efforts to meet the goals authorized in the Farm Bill for conservation activities. With USDA collaboration, EPA can deliver its unique expertise in pesticides, water, and air issues in an integrated way to farmers. Many of the environmental and conservation problems that are the most pressing for farmers involve pesticide and pest management, areas in which the National Resource Conservation Services (NRCS) of USDA has little experience or expertise.

We will develop partnerships with a broad range of groups with agricultural interests, including other Federal agencies, grower and commodity organizations, State and local governments, conservation districts, non-profit organizations, and universities; stewardship strategies that produce measurable environmental results; and common measures and environmental indicators with USDA.

pest control methods that achieve the best results with the least adverse impact to the environment.

The Endangered Species Protection Program (ESPP) is built on consultation and cooperation between the United States Fish and Wildlife Service (FWS), EPA Regions, States, and pesticide users. The Endangered Species Act is intended to protect and promote the recovery of animals and plants that are in danger of becoming extinct. Under the Act, EPA must ensure that use of pesticides will not result in harm to species listed as endangered and threatened, or harm habitat critical to those species' survival. EPA is working with FWS and stakeholders to identify ways to enhance the program to make it more efficient and effective. In 2004, the Agency will be working to formalize the improved consultation process.

In order to protect listed species from harm resulting from pesticide use, the Agency will continue to do the following:

- Use sound science to assess the risk of pesticide exposure to listed species. In 2004, EPA will continue to work with industry to improve databases of endangered species information. The database will help ensure consistent consideration of endangered species as pesticides are reviewed.

- Implement use limitations through appropriate label statements; develop county bulletins containing maps of species' locations and pesticide use limitations; and providing a toll-free telephone number to assist users in determining whether they need a bulletin and where to obtain one.
- Encourage individual states and tribes to develop their own endangered species protection plans where needed, to meet the program's goals.

#### **Promoting Use of Integrated Pest Management in Schools**

One of EPA's highest priorities is protecting children's health from unnecessary exposure to pesticides that are used in their schools to control pests. EPA is encouraging school officials to adopt Integrated Pest Management (IPM) practices to reduce children's exposure to pesticides while maintaining effective control of pests.

A goal of the IPM in Schools Initiative is to efficiently integrate an IPM program with the school's existing pest management plan and other school management activities. School management activities such as preventive maintenance, janitorial practices, landscaping, occupant education, and staff training are all part of an IPM program. The following steps are required to develop an IPM decision network:

- Developing an official policy statement for school pest management
- Designating pest management roles
- Setting pest management objective for sites
- Inspecting, identifying and monitoring for incipient pest populations
- Setting action thresholds
- Applying IPM strategies
- Evaluating results and record keeping

EPA is helping schools understand and implement IPM through the distribution of printed publications, awarding grants to start IPM programs, offering workshops and courses and providing guidance and assistance through partnerships with universities and national associations.

Antimicrobial pesticides are used to kill microorganisms on surfaces and objects in hospitals, schools, restaurants and homes. EPA registers and regulates antimicrobial pesticides under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). To obtain registration, manufacturers of antimicrobial products must meet basic standards, the foremost being:

- The product will not cause unreasonable adverse effects to human health or the environment.
- Product labeling and composition comply with the requirements of FIFRA.

Manufacturers are required to submit to EPA detailed and specific information concerning the chemical composition of their product; effectiveness data to document their claims against specific microorganisms and to support the directions for use provided in labeling; labeling that reflects the required elements for safe and effective use; and toxicology data to document any hazards associated with use of the product.

The Agency will continue to address concerns regarding the efficacy of public health products used to kill microorganisms in hospitals, schools, restaurants, and homes. Sterilizers and disinfectants are increasingly vital to containing infections that are resistant to antibiotics in clinical settings. EPA has developed a comprehensive strategy to improve the regulation of antimicrobial pesticides. In keeping with a major component of the strategy, EPA has greatly improved communications with the public, all levels of government, academia, user communities, industry, health professionals, trade organizations, and independent testing groups. Additionally, the Agency has enhanced and expanded its use of the Internet to educate the general public about the status and direction of the regulation for antimicrobial products.

The strategy also seeks to improve the regulation of antimicrobials through improvement of EPA's regulatory processes. EPA has committed resources to ensure that efficacy tests for antimicrobial products are reliable and reproducible and that internal controls are improved to ensure the integrity of data submitted by registrants. Further, the Agency is developing a complaint system to handle concerns regarding ineffective products.

Reducing the risks of pesticide exposure is a particular challenge on Tribal lands. Native Americans often consume different foods than the average American, eating more wild game and fish following traditional subsistence diets, and using different farming practices. Their patterns of exposure may not be adequately represented in the general public dietary or other exposure information gathered by USDA, FDA or the registrant. In FY 2002, EPA launched the LifeLine pilot program to modify one of the Agency's primary risk assessment tools to capture these unique exposure risks. A number of tribes have agreed to provide detailed lifestyle data in support of this new model, which will be modeled for Tribal communities in biogeographical areas. Additionally, through the Tribal Medicine Project, teams of experts on pesticide exposure risks and symptoms foster greater Tribal awareness of pesticide health hazards, and provide training to Tribal health care providers on the identification, prevention, and treatment of toxic exposures among Tribal members. Outreach and education tools must be matched to Tribal needs.

The effectiveness of our field programs on Tribal lands is directly related to Tribal capacity for pollution prevention. Agency efforts include the following:

- Enhancing Tribal environmental program capacity by conducting multi-media risk assessments.
- Providing training and technical assistance for Tribal environmental managers to conduct their own assessments and mitigation activities, with a primary emphasis on pollution prevention, to reduce children's exposure to pesticides as well as Persistent Bioaccumulative Toxics (PBTs), lead and other toxic substances.

**FY 2004 Change from FY 2003 Request**

EPM

- (+\$500,000) This increase is to support EPA/USDA agricultural and environmental collaboration. In partnership with the greater agricultural community, EPA will evaluate current farm operations and risk reduction technologies.

**GOAL: PREVENTING POLLUTION AND REDUCING RISK IN COMMUNITIES, HOMES, WORKPLACES AND ECOSYSTEMS**

**OBJECTIVE: REDUCE PUBLIC AND ECOSYSTEM RISK FROM PESTICIDES**

**Annual Performance Goals and Measures**

**Partnerships and Risk Reduction**

In 2004 Reduce public health and ecosystem risk from pesticides.

In 2003 Reduce public and ecosystem risk from pesticides.

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
Successful transitions from high risk pesticides to effective alternative pest management practices			20-30	Transitions
Number of efforts identified with USDA, universities, states, and others, leveraging Farm Bill funds that promote the research and adoption of reduced risk pest management strategies.			40	Efforts
Number of incidents and mortalities to terrestrial and aquatic wildlife caused by the 15 pesticides responsible for the greatest mortality to such wildlife.		20	5%	reduction
Quantified adoption of pollution prevention measures in targeted commodities and farm management strategies.			tbd	grants

Baseline: The baseline for wildlife mortalities, transitions, and efforts are under development. The baseline for grants, which are targeted for adoption and/or development of IPM standards, irrigation water conservation and management, dust mitigation, waste management and other best management practices are under development using Farm Bill funds as leverage, is zero.

## **Verification and Validation of Performance Measures**

### **FY 2004 External Performance Measures: Quantified adoption of pollution prevention measures in targeted commodities farm management strategies**

**Performance Database:** EPA's Regional Offices' and Headquarters' databases.

**Data Source:** The data source is the number of grants awarded in conjunction with the United States' Department of Agriculture's (USDA) Farm Bill efforts to support the development of Integrated Pest Management strategies, irrigation water conservation and management, dust mitigation, waste management, and other best management strategies. Information will be compiled through a consolidated count from EPA's Office of Pollution Prevention and Toxic Substances (OPPTS), the Office of Air and Radiation (OAR) and the Office of Water (OW). The Agency is starting to develop a template to use in grant management for these projects that will promote standardized reporting of environmental outcomes such as the use of reduced-risk pesticides and other agricultural management strategies.

**Methods, Assumptions and Suitability:** This is an output measure tracked directly through EPA Regional Offices' and HQ's record-keeping systems. No models or assumptions or statistical methods are employed. Data are aggregated nationally and suitable for cross year comparisons.

**QA/QC Procedures:** Regional and Headquarters' offices are responsible for ensuring the accuracy of the count of grants awarded.

**Data Quality Review:** Regional Offices will conduct their own QA/QC procedures prior to submitting their counts to EPA-HQ for consolidation into a national count.

**Data Limitations:** This is a measure of grants awarded only. As stated above, the Agency is developing a more sophisticated method of environmental outcome reporting for grants awarded to promote of agricultural best management strategies.

**Error Estimate:** N/A.

**New/Improved Data or Systems :** see above.

**References:** OPPTS HQ-Regional Memorandum of Agreement (MOA).

### **FY 2004 External Performance Measures: Successful transitions from high-risk pesticides to effective alternative pest management practices**

**Performance Database:** EPA's Regional Offices' databases

**Data Source:** All information is received through reporting from EPA's Regional offices, consistent with Office of Pollution Prevention and Toxic Substances' (OPPTS) biennial Regional Office-HQ Memorandum of Agreement (MOA).



**Methods, Assumptions and Suitability:** This is an outcome measure tracked directly through EPA's Regional Offices' record-keeping systems. No models or assumptions or statistical methods are employed. Data are aggregated nationally and suitable for cross year comparisons.

**QA/QC Procedures:** Regional Offices are responsible for determining if a particular activity constitutes a "transition," using criteria that will be developed during FY2003.

**Data Quality Review:** Regional Offices will conduct their own QA/QC procedures prior to submitting their counts to EPA-HQ for consolidation into a national count. Discussion will be held throughout the year to ensure consistency in characterizing "transitions."

**Data Limitations:** This measure is designed to quantify various activities in agriculture that promote safer pest management strategies and is necessarily broad. For example, a transition could include safer pest management tools applied to an entire crop in a particular location, and/or the substitution of a safer chemical (such as a reduced risk pesticide or a biopesticide) for a more risky pesticide.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** EPA will develop a definition of more explicit "transition" in FY2003.

**References:** OPPTS Headquarters-Regional M.O.A.

**FY 2004 External Performance Measures:** Number of efforts identified with USDA, universities, grower groups, and states that promote the research and adoption of reduced risk pest management strategies.

**Performance Database:** EPA's Regional Offices' databases

**Data Source:** All information is received through reporting from Regional offices, consistent with OPPTS' biennial Regional Office-HQ Memorandum of Agreement (MOA).

**Methods, Assumptions and Suitability:** This is an output measure tracked directly through EPA's Regional Offices' record-keeping systems. No models or assumptions or statistical methods are employed. Data are aggregated nationally and suitable for cross year comparisons.

**QA/QC Procedures:** Regional Offices are responsible for determining if a particular activity constitutes an "effort," using criteria, which will be developed during FY2003.

**Data Quality Review:** Regional Offices will conduct their own QA/QC procedures prior to submitting their counts of efforts to EPA-HQ for consolidation into a national count.

**Data Limitations:** Because this measure is designed to quantify outreach to various stakeholders across the country, including meetings, presentations, phone calls, etc, it is can only approximate the total effort that EPA is expending to promote reduced risk pest management

strategies. The definition of effort will necessarily be broad as there are many communication tools available to the Agency for outreach to stakeholders.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** EPA will develop a more explicit definition of “effort” in FY 2003.

**References:** OPPTS HQ-Regional M.O.A.

**FY 2004 External Performance Measures:** Number of incidents and mortalities to terrestrial and aquatic wildlife caused by the 15 pesticides responsible for the greatest mortality to such wildlife.

**Performance Database:** The Ecological Incident Information System (EIIS) is a national database of information on poisoning incidents of non-target plants and animals caused by pesticide use. The Environmental Fate and Effects Division of the Office of Pesticide Programs maintain this database.

**Data Source:** Data are extracted from written reports of fish and wildlife incidents submitted to the Agency by pesticide registrants under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA), Section 6(a)(2), as well as incident reports voluntarily submitted by state and Federal agencies involved in investigating such incidents.

**Methods, Assumptions and Suitability:** This measure helps to provide information on the effect of our regulatory actions on the well being of fish and wildlife. The assumption is that the number of incidents and mortalities to fish and wildlife caused by pesticides will decrease when use of those pesticides are curtailed or eliminated.

**QA/QC Procedures:** Before entering an incident, a database program is used to screen for records already in the database with similar locations and dates. Similar records are then individually reviewed to prevent duplicate reporting. After each record is entered into the EIIS database, an incident report is printed that contains all the data entered into the database. A staff member, other than the one who entered the data, then reviews the information in the report and compares it to the original source report to verify data quality. Scientists using the incident database are also encouraged to report any inaccuracies they find in the database for correction.

**Data Quality Review:** Internally and externally conducted data quality reviews related to data entry are ongoing. EPA follows a quality assurance plan for accurately extracting data from reports and entering it into the EIIS database. This quality assurance plan is described in Appendix D of the Quality Management Plan for the Office of Pesticide Programs. When wildlife data from private organizations such as the American Bird Conservancy are incorporated, the new data and EIIS data are reviewed for quality during data entry using the same standards.

**Data Limitations:** This measure is designed to monitor trends in the numbers of acute poisoning events reported to the Agency. Because the data are obtained, in part, through

voluntary reporting, the numbers of reported incidents may not accurately reflect the numbers of actual incidents. Therefore, it is important to consider the possible factors influencing changes in incident reporting rates over time when evaluating this measure.

**Error Estimate:** Moving average counts of number of incidents per year may be interpreted as a relative index of the frequency of adverse effects that pesticides are causing to fish and wildlife from acute toxicity effects. The indicator numbers are subject to under-reporting, but trends in the numbers over time may indicate if the overall level of adverse acute effects is improving or getting worse.

**New/Improved Data or Systems:** The Office of Pesticide Programs is currently conducting a project with the American Bird Conservancy, reviewing the data in its Avian Incident Monitoring System on bird kill incidents caused by pesticides. These data will be incorporated into the EIIS. The project should improve the quantity and quality of data in the EIIS database on avian incidents.

**References:** The Ecological Incident Information System (EIIS) is an internal Office of Pesticide Programs database. Data available upon request.

### **Coordination with Other Agencies**

EPA coordinates with various State, Tribal, and Federal agencies as well as with private organizations to ensure that our strategic approaches to pollution prevention and risk reduction are comprehensive and compatible with efforts already in place. Achievement of this objective depends in part on successful cooperation with our partners and the successful implementation of our regulatory programs. The number of partnerships with private and public entities serves as an effective indicator of EPA's progress in meeting its stated objectives.

Coordination with State lead agencies and with the U. S. Department of Agriculture (USDA) provides added impetus to the implementation of the Certification and Training program. States also provide essential activities in developing and implementing the Endangered Species, Groundwater, and Worker Protection programs. States are involved in numerous special projects and investigations, including emergency response efforts. The Regions provide technical guidance and assistance to the states and tribes in the implementation of all pesticide program activities.

EPA uses a range of outreach and coordination approaches for pesticide users, for agencies implementing various pesticide programs and projects, and for the general public. Outreach and coordination are essential to protect workers, endangered species, and groundwater; to provide training of pesticide applicators; to promote integrated pest management and environmental stewardship; and to support compliance through EPA's regional programs and those of the states and tribes.

In addition to the training that EPA provides to farm workers and restricted use pesticide applicators, EPA works with the state Cooperative Extension Services designing and providing specialized training for various groups. Such training includes instructing private applicators on the proper use of personal protective equipment and application equipment calibration, handling

spill and injury situations, farm family safety, preventing drift, and pesticide and container disposal. Other specialized training is provided to public works employees on grounds maintenance, to pesticide control operators on proper insect identification, and on weed control for agribusiness.

### **Statutory Authorities**

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

Federal Food, Drug and Cosmetic Act (FFDCA)

Food Quality Protection Act (FQPA) of 1996

Clean Water Act

## Environmental Protection Agency

### FY 2004 Annual Performance Plan and Congressional Justification

#### Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

**Objective:** Reduce Risks from Lead and Other Toxic Chemicals

By 2007, significantly reduce the incidence of childhood lead poisoning and reduce risks associated with polychlorinated biphenyls (PCBs), mercury, dioxin, and other toxic chemicals of national concern.

#### Resource Summary (Dollars in Thousands)

	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	FY 2004 Req. v. FY 2003 Pres Bud
<b>Reduce Risks from Lead and Other Toxic Chemicals</b>	\$37,745.8	\$36,355.9	\$38,722.5	\$2,366.6
Environmental Program & Management	\$21,891.9	\$22,673.9	\$25,022.5	\$2,348.6
State and Tribal Assistance Grants	\$15,853.9	\$13,682.0	\$13,700.0	\$18.0
Total Workyears	135.7	144.7	149.8	5.1

#### Key Program (Dollars in Thousands)

	FY 2002 Enacted	FY 2003 Pres. Bud.	FY 2004 Request	FY 2004 Req. v. FY 2003 Pres Bud
Congressionally Mandated Projects	\$380.0	\$0.0	\$0.0	\$0.0
Facilities Infrastructure and Operations	\$1,940.1	\$2,076.6	\$2,152.8	\$76.2
Grants to States for Lead Risk Reduction	\$13,682.0	\$13,682.0	\$13,700.0	\$18.0
Lead Risk Reduction Program	\$13,092.6	\$13,166.3	\$14,832.9	\$1,666.6
Legal Services	\$220.4	\$238.9	\$248.3	\$9.4

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Management Services and Stewardship	\$182.9	\$197.6	\$282.4	\$84.8
National Program chemicals: PCBs, Asbestos, Fibers, and Dioxin	\$6,775.5	\$6,994.5	\$7,506.1	\$511.6

## **FY 2004 Request**

### Lead Risk Reduction Program

EPA and the Health and Human Services co-chair the President's Task Force on Children's Environmental Health and Safety. This executive-level group works to coordinate efforts among Federal agencies in dealing with lead poisoning, asthma and other environmental health and safety concerns related to the nation's children.<sup>12</sup> Close collaboration among Federal Agencies as well as States and tribes is a key component of our efforts to eliminate childhood lead poisoning.

During FY 2004, 37 authorized states, one authorized territory, the District of Columbia, and three authorized tribes will run training and certification programs, and EPA will continue to implement the Lead Based Paint Training & Certification Program in those areas that do not have an authorized program. In the lead regulatory program, our current schedule anticipates proposing a major new program setting standards for training and certification for renovation and remodeling activities in FY 2004. EPA will also propose in FY 2004, a program targeting the work procedures and waste disposal practices used to safely and cost-effectively conduct deleading of bridges and other structures.



The concentration of lead in a child's blood is typically used as an index of lead exposure. Over time, increased scientific evidence of harmful effects has led to concern about blood-lead levels once thought to be safe. Since 1975, the Center for Disease Control and Prevention (CDC) has lowered the blood-lead level considered elevated for children from 40 ug/dL (micrograms per deciliter) to the current level of 10 ug/dL.<sup>13</sup> Ingestion of lead-contaminated dust and soil through normal hand-to-mouth activity is the primary pathway of lead exposure to United States

<sup>12</sup> HUD Press release, Oct. 24, 2001, [www.hhs.gov/news/press](http://www.hhs.gov/news/press)

<sup>13</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999-2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

children under six years of age.<sup>14</sup> Children may ingest lead-based paint chips from flaking walls, windows, and doors or when lead-based paint is disturbed in the course of renovation, repair, or abatement activity. EPA, under the 1992 Residential Lead-Based Paint Hazard Reduction Act (Subchapter IV of TSCA), assists and guides Federal activities aimed at reducing the exposure of children in homes with lead-based paint. Other Federal agencies, such as Housing and Urban Development (HUD) and Health and Human Services (HHS), via the National Institute for Occupational Safety and Health (NIOSH) and the CDC, also play important roles.

Considerable progress has been made in reducing environmental lead levels. In 1973, the Federal government began taking steps to eliminate sources of lead. Efforts include EPA phasing out leaded gasoline and the Consumer Product Safety Commission (CPSC) banning the production and sale of lead-based paint for residential use in 1978. In addition, EPA has implemented more stringent standards for lead in drinking water, and the domestic canning industry voluntarily eliminated the use of lead in solder to seal food cans. As a result of these efforts, children's blood levels have declined over 80 percent since the mid-1970s.

Data from the National Health and Nutrition Examination Survey (NHANES) conducted by the National Center for Health Statistics indicate that from 1976-1980 to 1999, the geometric mean blood lead level for children aged one to five years decreased from 15.0 micrograms per deciliter (ug/dL) to 2.0 ug/dL.<sup>15</sup> According to NHANES III Phase 2, conducted from 1991 to 1994, approximately 900,000 children aged one to five years had blood lead levels equal to or exceeding 10 ug/dL.<sup>16</sup> Data reported to CDC from nineteen state surveillance programs show that the proportion of tested children under age six with blood lead levels at or above 10 ug/dL decreased from 1996 to 1998.<sup>17</sup> New data released by CDC in January, 2003, indicate that the national incidence of elevated lead blood levels among children may now be approximately 400,000 cases, based on combined 1999 and 2000 samples. While these findings offer encouragement that the efforts of EPA and other Federal and State agencies to eliminate this disease are meeting with success, the wide confidence interval associated with 1999/2000 estimate and recognition that childhood lead poisoning incidence may be concentrated at much higher rates in "hot spots" in many American cities require us to maintain these successful efforts for the foreseeable future.

Lead exposure can affect children across all socioeconomic strata and in all regions of the country. Children in poor inner-city communities, however, are disproportionately affected. In fact, nationally, children in Medicaid comprise 80 percent of children with blood lead levels 15 ug/dL and above.<sup>18</sup> Studies by the CDC (1988-1991) indicate that children living in central cities are three to four times more likely to have blood-lead levels equal to or exceeding 10 ug/dL than those outside central cities, with the highest prevalence in cities where populations exceed one

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<sup>14</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

<sup>15</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

<sup>16</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

<sup>17</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

<sup>18</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

million.<sup>19</sup> The major reason for this high proportion is the lead-based paint hazards that are more prevalent in deteriorated older housing. In addition, the overall ambient level of environmental lead tends to be higher in inner cities.

According to HUD's National Survey of Lead and Allergens in Housing, an estimated 36 million homes (40 percent of all homes) contain some lead-based paint.<sup>20</sup> The likelihood, extent, and concentration of lead-based paint vary with the age of the building. Eighty-seven percent of housing units constructed before 1940 contain some lead-based paint, a figure that drops to 24 percent of units constructed between 1960 and 1977.<sup>21</sup> Over 5 million (or 14 percent) of these homes with some lead-based paint have children under age six in residence. Subchapter IV of the Toxic Substances Control Act (TSCA) mandates increasing protections from lead poisoning for children younger than six years.

In the past six years, EPA has made great strides in protecting children from lead poisoning through a combination of rulemaking, education, research, and partnerships. This variety of approaches enhances the effectiveness of the overall program, and in FY 2004 EPA's lead activities will continue to make a significant contribution towards the Agency's goal of virtually eliminating lead poisoning in children. For example, in FY 2004, EPA plans to propose a rule setting training standards for remodeling and renovation. While working on promulgation, EPA is also focusing on a public information campaign and training program in best practices for remodeling and renovation, to help set the stage for the rule and to foster awareness of safer work techniques among stakeholders.

In FY 2004, EPA will develop a program regarding deleading of buildings and structures, capping a series of rules with wide-ranging impact on children's health. EPA has promulgated regulations to set up a Federal infrastructure, including the lead accreditation, certification and workplace standards rule for targeted housing, the Lead Real Estate Notification and Disclosure Rule (with HUD), the Lead Renovation Information Rule, and standards identifying lead hazards in paint, dust and soil. The accompanying public education programs and tools developed include a national clearinghouse to provide the public with information on lead as well as a program of grants to states and tribes to establish accreditation, certification and workplace standards programs for targeted housing.

#### Grants to States for Lead Risk Reduction

EPA has authorized 42 states, territories and tribes to administer and enforce programs for lead accreditation certification, and workplace standards in target housing. Although all states, territories and tribes will not adopt the program, we intend to encourage several more to do so. However, EPA will administer and enforce the Federal lead program in all non-authorized states, territories and tribes.

With implementation of the training, certification and accreditation program by states, territories or tribes, or in some cases by EPA, additional data is becoming available to help

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<sup>19</sup> Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999–2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>

<sup>20</sup> Department of Housing and Urban Development, National Survey of Lead and Allergens in Housing

<sup>21</sup> Department of Housing and Urban Development, National Survey of Lead and Allergens in Housing



measure progress in reducing childhood lead poisoning and elevated blood-lead levels. EPA is working to be able to measure progress in reducing lead-based paint exposures through the collection of data associated with the Lead Abatement Program. In addition, the Agency will know how many professionals become certified as risk assessors, inspectors, workers or supervisors. This data will be used to measure the growth of a well-trained workforce capable of performing abatements safely and reliably. HUD cites the availability of this workforce as a key prerequisite for their lead abatement in housing program.

### National Program Chemicals Program

Most chemicals were introduced into commerce before the potential risks were known. A number of these chemicals are both prevalent and high-risk. The Agency has established a national program to manage reductions in use, safe removal, disposal or containment of these chemicals, as appropriate. Significant risks are well established for polychlorinated biphenyls (PCBs), asbestos, and dioxin, for example, and reductions in use and releases have been important to reducing exposure of the general population and sensitive subpopulations.<sup>22</sup> Risk reduction efforts on these chemicals will continue to meet the mandates under TSCA and fulfill the commitments made in domestic and international agreements. The Agency will also pursue opportunities for risk reduction for mercury, and for certain industrial fibers that may pose risks in the workplace.

### PCBs

In 2004, EPA's PCB control efforts will continue encouraging the phase out of PCB electrical equipment, ensuring proper storage or waste disposal methods and capacity and fostering PCB site cleanups. These activities are reflected in our Annual Performance Goals, which measure disposal trends since 1990. Recent rulemakings have provided industry with the opportunity to propose alternative risk-based PCB cleanups. Also, the Agency will continue to review existing approvals for facilities that treat, store and/or dispose of PCBs, on a five to ten year renewal cycle.

### Mercury

In 2002 EPA and the Environmental Council of States (ECOS) commenced a cooperative agreement to provide logistical support for specific joint projects on mercury between EPA and the Quicksilver Caucus. The Quicksilver Caucus is a coalition of state government organizations formed to highlight their concerns about mercury pollution. The group includes state air, water, and waste associations, ECOS, the National Governors Association, and other state organizations. ([www.epa.gov/pbt/whatsnew](http://www.epa.gov/pbt/whatsnew))

Mercury policy issues to be addressed by EPA and the Quicksilver Caucus states during 2003 and 2004 include: (1) how to meet mercury reduction goals for specific water bodies where mercury pollution is caused primarily by air deposition and/or abandoned mines; and (2) how to ensure safe stewardship of mercury stocks and mercury-containing wastes. The

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<sup>22</sup> EPA web page - Frequently Asked Questions- How do PBTs harm us and the environment?  
<http://www.epa.gov/pbt/faq/htm>

Quicksilver Caucus states will also be providing comments and counsel as EPA develops its Agency-wide Mercury National Action Plan, which is targeted for publication in late 2004 or early 2005.

### Asbestos

EPA's most significant ongoing activities on asbestos include the following:

- Assessing and cleaning up asbestos-contaminated sites related to Libby, MT,
- Reviewing EPA's sampling, analytical and risk assessment tools for asbestos; and
- Evaluating potential exposures and risks from asbestos in consumer products.

In late 1999, EPA initiated a series of activities in response to renewed concerns about asbestos contamination in vermiculite, a common building insulating material and soil conditioner. In 2004, EPA will continue to examine results from its studies into the potential for exposure to asbestos fibers from vermiculite in building insulation materials. In addition, the Agency is seeking input on options for the future direction of its administrative asbestos program under TSCA. EPA has formed the Asbestos Focus Group to elicit recommendations to the Agency from external parties on program priorities and resources. EPA will then move to refocus its efforts to reduce exposure to this fiber, which causes various cancerous and non-cancerous diseases in humans.

In late 1999, EPA initiated a series of activities in response to renewed concerns about asbestos contamination in vermiculite, a common building insulating material and soil conditioner. In 2004, EPA will continue to examine results from its studies into the potential for exposure to asbestos fibers from vermiculite in building insulation materials. In addition, the Agency is seeking input on options for the future direction of its administrative asbestos program under TSCA. EPA has formed the Asbestos Focus Group, representatives from industry, academia, public interest and labor groups, national experts on asbestos, and officials from State and Federal agencies to make recommendations to the Agency on program priorities and resources, which will help EPA in its efforts to reduce exposure to this fiber, which has been shown to cause various cancerous and non-cancerous diseases in humans.

Outreach and technical assistance will continue in the asbestos program for schools, in coordination with the Occupational Safety and Health Administration (OSHA) and the states. A new project to determine the risks to homeowners and remodelers from asbestos-contaminated vermiculate home insulation is underway.

### Dioxin

EPA plans to develop an Agency-wide dioxin strategy to respond to new findings in the scientific community concerning the potential risks of dioxin and address dioxin risk management in a more comprehensive cross-media approach. EPA will continue to be part of an interagency effort to assess potential dioxin risks to the public, focusing on identifying and better quantifying the link of potential exposures of dioxin sources to the public. Results from the

Agency's Dioxin Exposure Initiative (DEI) have already resulted in significant advances in our understanding of dietary routes of exposure. In addition, DEI results to date have established baseline measurements of dioxins in food and air that will permit the tracking of environmental trends and evaluation of the effectiveness of dioxin risk management programs.<sup>23</sup> This work complements similar efforts by the United States Department of Agriculture and the Food and Drug Administration to establish baseline measurements of dioxins in food.

**FY 2004 Change from FY 2003 Request**

EPM

- (+\$1,666,600, +1.9 FTE) Increased support for development of proposed rule for safe deleading of bridges and other structures, enabling proposed rule to be published in the Federal Register in 2004.
- (+\$511,600, +2.9 FTE) Increased support for the National Program Chemicals Program, including asbestos.

**GOAL: PREVENTING POLLUTION AND REDUCING RISK IN COMMUNITIES, HOMES, WORKPLACES AND ECOSYSTEMS**

**OBJECTIVE: REDUCE RISKS FROM LEAD AND OTHER TOXIC CHEMICALS**

**Annual Performance Goals and Measures**

**GOAL: PREVENTING POLLUTION AND REDUCING RISK IN COMMUNITIES, HOMES, WORKPLACES AND ECOSYSTEMS**

**OBJECTIVE: REDUCE RISKS FROM LEAD AND OTHER TOXIC CHEMICALS**

**Annual Performance Goals and Measures**

**Exposure to Industrial / Commercial Chemicals**

In 2004            Reduce exposure to and health effects from priority industrial / commercial chemicals

In 2002            Preliminary data lends to our confidence that this goal will be met. We will provide the data and explanation as soon as they are available and it will be in time for the FY 2002 APR

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
Safe Disposal of Transformers			8,000	Transformers
Safe Disposal of Capacitors			6,000	Capacitors
Number of individuals certified nationally to perform lead-based paint abatement.	4574		18,000	cert. ind. cum
number of children aged 1-5 years with elevated blood lead levels (>10 ug / dl)			tbd	children

Baseline:            The baseline for number of certified individuals for lead paint abatement is zero in 2000. The baseline for PCB transformers is 2.2 million units and for capacitors is 1.85 million units as of 1988 as noted in the 1989 PCB Notification and Manifesting Rule.

<sup>23</sup>U.S. EPA, Dioxin Exposure Initiative, [www.epa.gov/pbt/whatsnew](http://www.epa.gov/pbt/whatsnew)

## **Program Assessment Rating Tool**

### Existing Chemicals

As part of the Administration's overall evaluation of effectiveness of Government programs, the Existing Chemicals program was evaluated with the following specific findings:

- The program has strong purpose and management. The program, however, lacks strategic planning.
- The program cannot demonstrate any long-term impact. EPA's long-term goal does not focus on outcomes and lacks a baseline and clear time frames. The program also does not have an efficiency measure.
- The program has demonstrated few results. EPA has reviewed approximately two percent of existing chemicals. GAO found that EPA has been slow to address these chemicals.
- The law requires that EPA compile industry data, which can be costly and time consuming.
- EPA's current annual performance goals cannot be assessed because data are not available until two years into the future.

In response to these findings the Administration will:

- Provide \$1 million above the 2003 President's Budget to develop acute exposure chemical guidelines (AEGLs). AEGLs are important for homeland security response, recovery, and preparedness. AEGLs represent three tiers of health effects (discomfort, disability, death) for five exposure durations (eight hours or less). This funding will help EPA to obtain more information on the possible harm to humans and the environment from chemicals, which will help the Agency to achieve a higher level of accountability and results.
2. Establish better performance measures, including efficiency measures.

### **Verification and Validation of Performance Measures**

#### **FY 2004 Performance Measure:**

- **Safe disposal of PCB transformers**
- **Safe disposal of PCB large capacitors**

**Performance Database:** PCB Annual Report Database.

**Data Source:** Annual Reports from commercial storers and disposers of PCB Waste.

**Methods, Assumptions, and Suitability:** Data is to provide a baseline for the amount of PCB waste disposed of annually.

**QA/QC Procedures:** The Agency reviews, transcribes, and assembles data into the Annual Report Database.

**Data Quality Reviews:** The Agency contacts data reporters, when needed, for clarification of data submitted.

**Data Limitations:** Data limitations include missing submissions from commercial storers and disposers, and inaccurate submissions. PCB-Contaminated Transformers 50 to 499 ppm PCBs and those that are 500 ppm PCBs or greater are not distinguished in the data. Similarly, large and small capacitors of PCB waste may not be differentiated data are collected for the previous calendar year on July 1 of the next year creating a lag of approximately one year. Despite these limitations, the data does provide the only estimate of the amount of PCB waste disposed annually.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** None

**References:** None

**FY 2004 External Performance Measure: Number of certified individuals nationally**

**Performance Database:** EPA's regional office records.

**Data Source:** Currently, all information is received through informal reporting from EPA's regional offices, and originates from information submitted via certification applications. In the future, we will track certifications centrally.

**Methods, Assumptions, and Suitability:** This is an output measure tracked directly through the Office of Pollution Prevention and Toxics' record-keeping systems. No models or assumptions or statistical methods are employed. Data are aggregated nationally and suitable for cross year comparisons.

**QA/QC Procedures:** Applicants are given photo identifications to prevent cheating at certification testing centers. EPA Headquarters reviews applications for completeness, including checking for the required information and materials. EPA's regional offices review applications for quality, including a more substantive review of the application. Third-party test centers have extensive QA/QC controls under their contract with EPA.

**Data Quality Reviews:** Data quality reviews of records maintained at the test centers are conducted by EPA Regional Offices during routine compliance monitoring of the centers using Office of Enforcement and Compliance Assurance procedures<sup>24</sup>. The reviews have found

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<sup>24</sup> U.S. EPA Office of Enforcement and Compliance, <http://www.epa.gov/compliance/resources/policies/index.html>

occasional discrepancies but no regional or national trends have surfaced requiring substantive modifications to any record keeping or QA/QC procedures.

**Data Limitations:** We have certification data from nine out of ten EPA regional offices. We expect that the remaining regional office would add no more than 300 certified entities to the baseline count. If an individual or firm was certified in more than one EPA region, they have been double-counted. We expect that these difficulties will be resolved once we have in place a centralized database.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** We hope to have a centralized, contractor-run tracking system in place by 2003.

**References:** None.

**FY 2004 External Performance Measure: Number of children aged 1-5 years with elevated blood lead levels (>10 ug/dL)**

**Performance Database:** Centers for Disease Control and Prevention's (CDC) National Health and Nutrition Examination Survey (NHANES)

**Data Source:** The National Health and Nutrition Examination Survey (Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999-2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>) is a coordinated program of studies designed to assess the health and nutritional status of adults and children in the United States. The program began in the early 1960's and continues. The survey examines a nationally representative sample of approximately 5000 people each year located across the United States

**Methods, Assumptions, and Suitability:** Detailed interview questions cover areas related to demographic, socio-economic, dietary, and health-related questions. The survey also includes an extensive medical and dental examination of participants, physiological measurements, and laboratory tests. Specific laboratory measurements of environmental interest include: heavy metals (lead, cadmium, and mercury), VOC exposures, phthalates, organophosphates (OPs), pesticides and their metabolites, non-persistent pesticides, dioxins/furans and polycyclic aromatic hydrocarbons (PAHs). NHANES is unique in that it links laboratory-derived measurements of exposure (urine, blood etc.) to questionnaire responses and results of physical exams.

CDC publishes a "National Report on Human Exposure to Environmental Chemicals," (Centers for Disease Control, National Center for Health Statistics, National Health and Nutrition Examination Survey: 1999-2002. Available at <http://www.cdc.gov/nchs/nhanes.htm>) which reflects findings from NHANES. It provides ongoing surveillance of the United States population's exposure to environmental chemicals. The 1999 report provides measurements of exposure to 27 chemicals based on blood and urine samples from people participating in NHANES 1999. Current plans for future reports include expanding the number of chemicals to 100 (in order to include carcinogenic volatile organic compounds, carcinogenic PAHs, dioxins and furans, PCBs, trihalomethanes, haloacetic acids, and carbamate and organochlorine

pesticides). Future reports will provide details among different populations stratifying results by gender, race/ethnicity, age, urban/rural residence, education level, income, and other characteristics. CDC will track these indicators over time. Data will assist regulators in analyzing trends over time, the effectiveness of public health efforts, and exposure variations among sub-populations.

**QA/QC Procedures:** Quality assurance plans are available from both CDC and the contractor, WESTAT, as outlined on the web site <<http://www.cdc.gov/nchs/nhanes.htm>> under the NHANES section.

**Data Quality Reviews:** CDC follows standardized survey instrument procedures to collect data to promote data quality, and data are subjected to rigorous QA/QC review. CDC/NCHS has an elaborate data quality checking procedure outlined on the web site <<http://www.cdc.gov/nchs/nhanes.htm>> under the NHANES section.

**Data Limitations:** The NHANES survey uses two steps, a questionnaire and a physical exam. For this reason, there are sometimes different numbers of subjects in the interview and examinations and special weighting techniques are needed. Additionally, the number of records in each data file varies depending on gender and age profiles for the specific components. Demographic information is collected but not available at the highest level of detail in order to protect privacy. Body burden data are evidence of human exposure to toxic substances; however, linkages between evidence of exposure and source of exposure have yet to be made for many substances. In the case of lead, the correlation is strongly documented.

**Error Estimate:** Because NHANES III is based on a complex multi-stage sample design, appropriate sampling weights should be used in analyses to produce national estimates. Several statistical methodologies can be used to account for unequal probability of the selection of sample persons. The methodologies and appropriate weights are provided at [www.cdc.gov/nchs/about/major/nhanes/nhanes3/cdrom/nchs/MANUALS/NH3GUIDE](http://www.cdc.gov/nchs/about/major/nhanes/nhanes3/cdrom/nchs/MANUALS/NH3GUIDE) to help generate appropriate error estimates.

**New/Improved Data or Systems:** NHANES is moving to an annual schedule. The sample design allows for limited estimates to be produced on an annual basis and more detailed estimates to be produced on 3-year samples.

**References:** CDC publishes a "National Report on Human Exposure to Environmental Chemicals," which reflects findings from NHANES. (<http://www.cdc.gov/nchs/nhanes.htm>)

### **Coordination with Other Agencies**

The success of EPA's lead program is due in part to effective coordination with other Federal agencies, states and Indian tribes. EPA will coordinate with HUD to clarify how new rules may affect existing EPA and HUD regulatory programs, with the Federal Highway Administration of the Department of Transportation, and with the Occupational Safety and Health Administration (OSHA) of the Department of Labor on worker protection issues. EPA will continue to work closely with state and Federally recognized tribes to ensure that authorized State and Tribal programs continue to comply with requirements established under TSCA, that

the ongoing Federal accreditation certification and training program for lead professionals is administered effectively, and that the States and tribes adopt the Renovation and Remodeling and the Buildings and Structures Rules when these rules become effective.

EPA has a Memorandum of Understanding (MOU) with HUD on coordination of efforts on Lead-based paint issues. As a result of the MOU, EPA and HUD co-chair an Interagency Task Force that has been regularly meeting since 1989. There are 14 other Federal agencies including CDC and Department of Defense (DOD) on the Task Force. In another joint effort, EPA, HUD, and the National Institutes of Standards and Technology (NIST) have been working to identify reliable at-home test kits for lead based paint to recommend to do-it-yourself renovators. HUD and EPA also have a joint Lead Hotline and share enforcement of the Disclosure Rule.

Mitigation of existing risk is a common interest for other Federal agencies addressing issues of asbestos and PCBs. EPA will continue to coordinate interagency strategies for assessing and managing potential risks from asbestos and other fibers. Coordination on safe PCB disposal is an area of ongoing emphasis with the Department of Defense (DOD), and particularly with the US Navy, which has special concerns regarding ship scrapping. PCBs and mercury storage and safe disposal are also important issues requiring coordination with the Department of Energy and DOD as they develop alternatives and explore better technologies for storing and disposing high risk chemicals.

### **Statutory Authorities**

Toxic Substances Control Act (TSCA) section 4, 5, 6, 8, 12(b) and 13 (15 U.S.C. 2603\_5,2607,2611 and 2612



## Environmental Protection Agency

### FY 2004 Annual Performance Plan and Congressional Justification

#### Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

**Objective:** Manage New Chemical Introduction and Screen Existing Chemicals for Risk

By 2007, prevent or restrict introduction into commerce of chemicals that pose risks to workers, consumers, or the environment and continue screening and evaluating chemicals already in commerce for potential risk.

#### Resource Summary (Dollars in Thousands)

	<b>FY 2002 Actuals</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
<b>Manage New Chemical Introduction and Screen Existing Chemicals for Risk</b>	<b>\$76,449.4</b>	<b>\$77,538.2</b>	<b>\$81,531.2</b>	<b>\$3,993.0</b>
Environmental Program & Management	\$54,789.3	\$52,388.6	\$55,902.8	\$3,514.2
Science & Technology	\$21,660.1	\$25,149.6	\$25,628.4	\$478.8
Total Workyears	398.7	391.2	393.5	2.3

#### Key Program (Dollars in Thousands)

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Community Assistance	\$474.4	\$507.1	\$0.0	(\$507.1)
Congressionally Mandated Projects	\$487.5	\$0.0	\$0.0	\$0.0
Endocrine Disruptor Screening Program	\$2,952.8	\$2,934.2	\$2,907.3	(\$26.9)
Environmental Monitoring and Assessment Program, EMAP	\$66.0	\$0.0	\$0.0	\$0.0
Existing Chemical Data, Screening, Testing and	\$28,286.4	\$28,331.9	\$29,667.0	\$1,335.1

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Management				
Facilities Infrastructure and Operations	\$5,983.8	\$5,600.5	\$6,606.5	\$1,006.0
Homeland Security-Critical Infrastructure Protection	\$400.0	\$0.0	\$1,109.1	\$1,109.1
Legal Services	\$912.3	\$979.6	\$1,021.9	\$42.3
Management Services and Stewardship	\$824.5	\$725.8	\$852.8	\$127.0
New Chemical Review	\$12,477.2	\$13,123.8	\$13,440.6	\$316.8
Research to Support Safe Communities	\$21,593.6	\$25,149.6	\$25,628.4	\$478.8
Science Coordination and Policy	\$177.1	\$185.7	\$297.6	\$111.9

### **FY 2004 Request**

This objective includes work in four broad program areas:

- governing the introduction of new chemicals into commerce (chemicals in the process of commercialization);
- assessing the risks of existing chemicals (chemicals in commerce);
- screening and testing chemicals for endocrine disruptor effects; and
- assessing the safety of biotechnology products and genetically modified organisms.

These programs are pivotal to reducing current and future risk by preventing or controlling the production of new chemicals that pose unreasonable risks and assessing and addressing the risks of chemicals already in commerce.

One of the major priorities in FY 2004 is improving the amount of human health and environmental effects data on industrial chemicals, and ensuring public access to the information. Currently there is little information available on the potential hazards of most chemicals manufactured and used in everyday products and industrial processes.

Without this information, we may not be able to effectively identify and evaluate the human health and environmental risks posed by these chemicals. Although the HPV Challenge screening program does not include actual risk assessments on these chemicals, the information collected will allow a high-level screening for potential concerns. In addition, relatively little is known about the unique effect on children's health of chemicals that are widely used in children's products or those that otherwise have high potential for exposure to children.

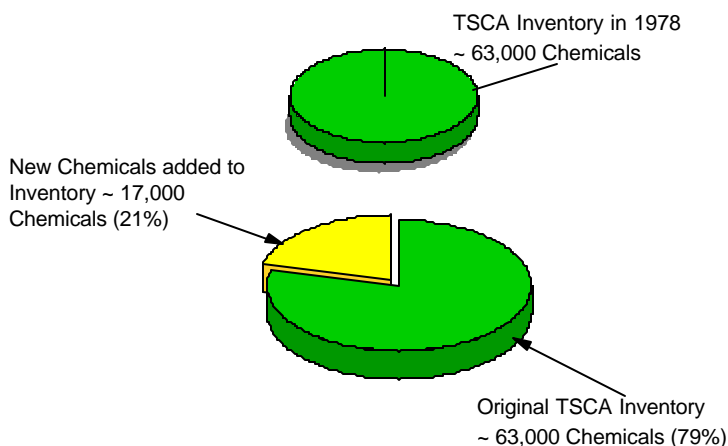
EPA's High Production Volume (HPV) Challenge Program targets 2,800 chemicals produced and/or imported in the United States (in quantities of at least one million pounds or greater annually). Working in partnership with industry and environmental organizations, the Agency has been ensuring that basic screening-level data on these chemicals are made public. The HPV Challenge Program will help prioritize EPA's chemical risk assessment and management activities and increase the amount of information on chemical uses, exposures and risks that EPA can provide to the public.

### New Chemicals Program

The Toxic Substances Control Act (TSCA) requires EPA to review a chemical or microorganism before it is manufactured commercially (i.e., a "new" chemical) to determine whether it can be handled and used safely. If the Agency determines that an unreasonable risk may be posed to people or the environment, EPA can block the chemical's entry into commerce or establish control measures to ensure the chemical's safety in the marketplace. Since 1979, EPA has reviewed more than 39,000 pre-manufacturing notifications (PMNs) and taken actions to control risks for about 10 percent of these chemicals and microorganisms.<sup>25</sup> Since EPA's inception, approximately 17,000 new chemicals reviewed by the program have entered United States commerce.

In 2004, EPA expects to receive and assess within the TSCA mandated 90-day review period approximately 1,700 additional PMNs. As part of its review of new chemical substances, the Agency has developed an array of innovative, efficient screening mechanisms. During a new chemical review for commercial chemicals in the process of commercialization, the Agency routinely works with industry to share any options and suggestions it may have on process improvements, or to produce new chemicals more safely.

Chemicals on TSCA Inventory in 2002

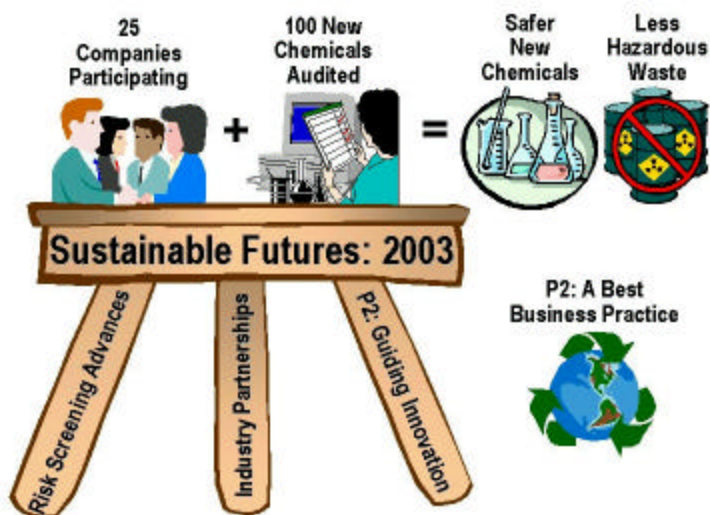


The previous chart indicates substantial progress made in the New Chemicals Program since its inception in 1978. In FY 2002 (partial year, October through August), there were potentially 79,676 chemicals in commerce; 17,070 of these chemicals, or 21 percent, had gone

<sup>25</sup> U.S. EPA, Office of Pollution Prevention and Toxics, TSCA New Chemicals Program Annual Report and the TSCA New Chemicals Program Website <http://www.epa.gov/oppt/newchems/accomplishments.htm>

through the TSCA Premanufacture Notice review process and entered into commerce following submittal of a Notice of Commencement of Manufacturing.<sup>26</sup> These chemicals have been assessed for risks, and controls are in place as necessary. In recent years, a growing number of these chemicals are becoming “greener,” or safer, due to several influences. Although the New Chemicals Program has always been inherently a Pollution Prevention (P2) program, it has evolved over the years to have an increased P2 focus. In addition, the New Chemicals Programs continues to coordinate with several voluntary P2 programs such as the P2 Framework, Green Chemistry, Green Engineering, and P2 Recognition Programs.

The New Chemicals Program also examines new microorganisms derived from biotechnology to ensure that potential risks have been evaluated and that adequate controls are in place before they are released into the environment. Outreach and technical assistance to encourage safer chemicals and chemical production and use include Green Chemistry and Green Engineering textbooks and other publications, a reference compendium, laboratory manuals, symposia and actual course work materials, all developed in partnership with industry, professional organizations and universities.



In 2003, the Agency plans to launch “Sustainable Futures,” a program that offers an expedited Pre-Manufacturing Notification process to companies that take training in the use of the methods and apply the results toward development of safer chemicals. The Agency, working with others in the scientific community, has developed computerized methodologies that look at the structure of chemicals and estimate potential hazard and risk. The methods, called the Pollution Prevention Framework and the Persistent, Bioaccumulative, Toxic (PBT) Profiler can be used to identify hazardous chemicals even before product manufacture begins. EPA is encouraging industry to use these screening-level tools, used internally by EPA, to evaluate chemical alternatives early in the research and development stage. Industry response to a pilot program in 2002 was very positive.

EPA’s technology transfer efforts introduced these risk-screening methods to the industry in 2001 and 2002, and the response was both positive and dramatic. The participating companies have indicated that the methods identified safer alternatives early in the product development cycle, when pollution prevention, product substitution, and risk reduction are most cost effective. The companies also found that the models reduced production costs, shortened time to market, and reduced generation of waste.<sup>27</sup> Under a pilot program (Project XL), EPA provided

<sup>26</sup> U.S. EPA, Office of Pollution Prevention and Toxics, Annual Performance Measure Tracking Files

<sup>27</sup> American Chemistry Council, Chlorine Chemistry Council, and Synthetic Organic Chemical Manufacturers Association, Industry Statement on EPA's PBT Profiler (September 26, 2002); press statement: Environmental

regulatory relief to two companies that used the tools as an integral part of product development. In a “win-win” result, industry saved time and money and the environment saw inherently safer chemicals.<sup>28</sup> EPA will expand the use of the risk screening tools developed from Project XL to other companies to assist them in selecting safer chemicals for use in their products and processes. By 2003, these screening tools should be accessible to a wide range of public and industry users, and EPA will offer regulatory relief to companies that use these tools, resulting in low hazard/low risk new chemical submissions. In 2004, there should be additional capabilities introduced to more fully address health endpoints of concern.

### Assessing Existing Chemicals



One of EPA’s critical responsibilities under TSCA is to identify and control any unreasonable risks that might be associated with the thousands of chemicals which are already in commerce.<sup>29</sup> The Agency will complete assessments of Methyl Tertiary Butyl Ether (MTBE), a gasoline additive, and several other chemicals used in a wide variety of commercial products and industrial processes. EPA’s strategy for addressing the remaining chemicals in commerce is to foster the public availability of risk screening information to allow

states, communities, industry, and the public to act on their own and in concert with EPA to reduce potential risks posed by these chemicals.

EPA’s High Production Volume (HPV) Challenge Program focuses on remedying the lack of critical human health and environmental effects information on industrial chemicals. In FY 2004, EPA will continue to review and make publicly available hazard screening data on HPV chemicals, which are those chemicals that are manufactured or imported into the United States in quantities of at least one million pounds. While the focus in the early years of the HPV Challenge Program was on evaluating the adequacy of existing data, new data generated under the program will now need assessment. In FY 2002 EPA’s HPV Challenge Program continued to provide health and environmental effects screening data for more than 800 industrial and commercial chemicals. EPA’s efforts in making these data available on the Agency’s HPV web

**HPV Challenge Program**  
*2800 HPV Chemicals Need Hazard Data*  
*(data as of May 2002)*

357 companies including 106 consortia  
have voluntarily sponsored 2,206  
HPV chemicals



Defense Offers Support for New EPA Internet Tool (Washington, DC, September 25, 2002). Available at <http://www.epa.gov>

<sup>28</sup> American Chemistry Council, Chlorine Chemistry Council, and Synthetic Organic Chemical Manufacturers Association, Industry Statement on EPA’s PBT Profiler (September 26, 2002); press statement: Environmental Defense Offers Support for New EPA Internet Tool (Washington, DC, September 25, 2002). Available at <http://www.epa.gov>

<sup>29</sup> TSCA - 15 USC 2605; regulations at 40 CFR, Chapter 1, Subchapter R, revised as of July 1, 2002.

site kept pace with the unprecedented volume of data submitted by industry participants.<sup>30</sup> The Agency intends to further evaluate whether additional assessment is warranted for chemicals to which children are exposed. The Voluntary Children's Chemical Evaluation Program (VCCEP) was launched in 2001. Industry commitments to "Tier 1" have been received thus far for 20 of the 23 chemicals identified for a pilot program.<sup>31</sup> The first chemical cases are estimated to be subject to peer consultations in 2003 to 2004.

Prior to the start of the HPV Challenge Program, insufficient hazard information existed in the public domain for many of these chemicals that we use daily. Only 7 percent of the 2,800 HPV chemicals had a publicly available full set of basic information on health and environmental effects. Only 25 percent of consumer chemicals (those used by children and families in consumer products) had a full set of publicly available basic information. In addition, the Agency is continuing its work with other countries in the Organization for Economic Cooperation and Development's (OECD's) Existing Chemicals Program to further expand the availability of risk screening information.

Much of the focus of the Agency in FY 2003 is assessing the validity of small groups or categories of HPV chemicals proposed by industry. Such categories of chemicals can be considered together because of their similar structure or toxicological properties. In FY 2004, as new data generated to support these categories become available, the Agency will shift its focus to evaluating the category analyses submitted by industry sponsors to ensure that the assumptions made in formulating the categories are met and that the use of a category approach to assessing, interpolating and extrapolating the health and environmental effects across the individual chemicals within them is justified. As such, the focus in FY 2004 will be on priority setting to determine whether further action is warranted--whether it is higher order health or ecological testing, collection of exposure data to begin an evaluation of risk, and/or risk management action undertaken by the Agency, industry, or the informed public. In addition, the Agency will explore using the hazard classification guidelines currently being developed in the OECD, which characterize chemicals from a hazard standpoint. Finally, the use of structure-activity relationships for higher order health and ecological effects predictions will be developed and applied to determine which chemicals should be considered for further action. These efforts will be coordinated with a pilot process now within the OECD's Existing Chemicals Program.

In FY 2004, the Agency will continue to work with stakeholders to explore possibilities for identifying use information. Use information would allow the Agency to identify chemical exposure pathways, better assess risks associated with such exposures, and identify potential unsafe uses of household chemicals and other consumer products.

The Existing Chemicals program collects information through other avenues as well. The Inventory Update Rule<sup>32</sup> under TSCA section 8(a) is routinely used to determine potential nationwide and local exposure to specific industrial chemicals, and provides reliable production volume information for chemicals in commerce. EPA's TSCA Section 8(d) reporting rule was

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<sup>30</sup> U.S. EPA, Office of Pollution Prevention and Toxics, High Production Volume Challenge Program, Chemical Hazard Data Availability Study, April 1998 - <http://www.epa.gov/chemrtk/hazchem.pdf>

<sup>31</sup> U.S. EPA, Office of Office of Pollution Prevention and Toxics, Voluntary Children's Chemicals Evaluation Program (VCCEP) Commitment Tracking System. Available at <http://www.epa.gov/chemrtk/viewsrch.htm>

<sup>32</sup>40 CFR part 710, as amended by 68 FR 848, January 7, 2003

developed to gather unpublished health and safety information needed by the TSCA Interagency Testing Committee (ITC), EPA program offices and other Federal Agencies. In 2004, EPA will support the TSCA ITC in carrying out its statutory mandate to formally recommend whether EPA should issue TSCA Section 4 Test Rules for identified industrial chemicals.

Section 8(e) is a mandatory provision of TSCA that requires immediate reporting to EPA by anyone who produces, imports, processes or distributes a chemical substance or mixture in commerce and who obtains information that “reasonably supports a conclusion” that such substance or mixture presents a substantial risk of injury to human health or the environment. EPA immediately reviews all incoming TSCA Section 8(e) notices and determines the need for and priority of action on the part of the Agency. Such actions could include referral to other Federal agencies.

Another existing chemical program of growing importance is the Acute Exposure Guideline Levels Program (AEGLE). The purpose of the AEGLE is to develop information on the health effects of acute exposure to toxic chemicals. The AEGLE values represent three tiers of health effect endpoints (discomfort, disability and death) for five different exposure durations (ten and thirty minutes, one, four and eight hours) in order to provide maximum flexibility and applicability to chemical emergency planners and responders. The analysis generates exposure values that indicate what levels of chemicals cause concern, providing key information to first responders to chemical spills, so they can determine what precautions to take and also how to treat citizens who may be on the scene. In 2004, the AEGLE program, which is peer-reviewed by the National Academy of Sciences, will continue its efforts to generate concern values for chemicals which are used in all aspects of emergency responses involving chemical spills including response, recovery, preparedness, and mitigation.

### Homeland Security

To prepare for catastrophes that may occur and to improve our nation’s toxic incident response capabilities, EPA proposes to increase the pace at which Acute Exposure Guideline Levels (AEGLE’s) are developed and approved for chemicals in commerce. It is noteworthy that the National Academy of Sciences strongly recommends such an increased effort.<sup>33</sup>

The AEGLE program, mandated by Congress and designed by EPA, directly resulted from a catastrophic toxic incident-- the mass killing of workers and community members by the accidental release of methyl isocyanate from a US owned chemical plant in Bhopal, India in 1984. AEGLE’s are short-term exposure limits applicable to the general population for a wide range of extremely hazardous substances (approximately 400) for purposes of chemical emergency response, planning, and prevention related to chemical accidents and chemical terrorism. To date, the program has developed AEGLE’s for approximately 90 chemicals with Proposed, Interim or Final status.<sup>34</sup> However, approximately 300 extremely hazardous substances remain to be addressed.

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<sup>33</sup> Public meeting, AEGLE Federal Advisory Committee, December 9-11, 2002

<sup>34</sup> U.S. EPA, Office of Prevention, Pesticides, and Toxic Substances, Overview of the Acute Exposure Guideline Levels (AEGLE) Program (June 2002).

The existing chemicals program provides direct scientific and technical support for the development of emergency exposure limits used within EPA and by many others. AEGL's are also needed by other Federal and state agency stakeholders. EPA leads the collaborative effort that includes nine Federal agencies (EPA, DOE, DOD, DOT, NIOSH, OSHA, CDC, ATSDR, and FDA), numerous state agencies, private industry, academia, emergency medical associations, unions, and other organizations in the private sector.

The program has also been extended to the international community, with the endorsement of the OECD and active participation by the Netherlands, Germany, and France. Recently, Russia has sent a delegation to pursue ongoing participation. The objective is to develop one standardized set of scientifically sound short-term exposure values that will be used worldwide for all chemical emergencies.

The availability of the AEGL values is critical for Response, Recovery, Preparedness, and Mitigation.

- Response: AEGL values provide emergency responders with valuable information for decision-making on such actions as evacuations and shelter-in-place and critical guidance regarding accessibility of contaminated sites to responders and use of personal protective equipment.
- Recovery: AEGL values can be used to determine whether restoration procedures can be implemented in contaminated areas or whether evacuated populations may return and normal activities may resume.
- Preparedness: AEGL values are extremely valuable in planning and preparedness because they are critical to scientifically credible release and dispersion modeling and the determination of "vulnerable zones" and "safe zones" in the event of a toxic chemical release. This planning identifies important facilities such as schools, hospitals, emergency response facilities, media communication centers, etc. that may be located in "vulnerable zones" and highlights the need for special preparedness actions.
- Mitigation: The Preparedness or planning efforts underscore the critical facilities and circumstances where mitigation actions can be taken to reduce the risk associated with chemical terrorist attacks.

### Endocrine Disruptor Program

There is increasing evidence that fish and wildlife has been affected by chemicals that interfere with the endocrine system resulting in abnormal development, low fertility and greater susceptibility to disease. The link to human disease is less clear at ambient environmental levels, although effects have been observed at fish exposure sites.<sup>35</sup>

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<sup>35</sup> International Program on Chemical Safety (2002), Global assessment of the state-of-the-science of endocrine disruptors. WHO/PCS/EDC/02.2



The Food Quality Protection Act Amendments of 1996 mandated that EPA test pesticides for estrogen effects on human health. The Safe Drinking Water Act Amendments of 1996 permit EPA to test contaminants found in drinking water sources. Given the scientific controversy over the testing of chemicals for their endocrine disrupting effects, the Agency established the Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) under the Federal Advisory Committee Act. EDSTAC included representatives from industry, environmental and public health groups, academia, and Federal and state government. On the basis of science, EDSTAC recommended that the screening program include: commercial chemicals and contaminants; estrogen, androgen and thyroid endpoints; and wildlife as well as human health effects.

### Schedule for the Development and Implementation of the Endocrine Disruptor Chemical Screening Program



**Sorting and Priority Setting**

narrows the list of chemicals from the list of 87,000 using existing chemical data and screening tools

**Tier 1 Screens**

is a battery of in vitro and in vivo short-term screening assays that identify chemicals having the potential to interact with the estrogen, androgen and thyroid systems. Chemicals that screen positive in Tier 1 screening battery will be tested in Tier 2.

**Tier 2 Tests**

consists of multi-generation tests in mammals, birds, fish, amphibians and invertebrates and will provide information on the adverse effects of the chemical and other information needed to assess the hazard of substances to these organisms.

**Phase 1 Implementation**

starts testing chemicals from the sorting and priority setting stage using the validated Tier 1 assays.

EPA based its EDSP on the EDSTAC recommendations. The EDSP is a two-tiered program. Tier 1 is a battery of in vitro and in vivo short-term screening assays that identify chemicals that have the potential to interact with the estrogen, androgen, and thyroid systems. Chemicals positive in the Tier 1 screening battery will be tested in Tier 2. Tier 2 consists of multi-generation tests in mammals, birds, fish, amphibians and invertebrates and will provide information on the adverse effects of the chemical and other information needed to assess the hazard of substances to these organisms. FQPA mandated that all assays used in the EDSP be validated. Validation is a science-based process and has required application of cutting edge science, domestic interagency and international cooperation, and ongoing stakeholder involvement. In 2004 EPA will continue to develop and validate Tier 1 and 2 screens and tests.

In 2004 EPA plans to start testing chemicals identified through the Sorting and Priority Setting Stage using validated Tier 1 screening assays.

## Research

There are 80,000 chemicals in the Toxic Substances Control Act (TSCA) inventory with approximately 1,700 chemicals added annually. Each year, 1 billion pounds of active ingredients found in conventional pesticides are applied in the United States. Release of these chemicals into the environment through industrial, agricultural, and other processes, can pose serious risks to both human health and ecosystems. Therefore, the continued development and validation of improved human health and ecological risk assessment methods is one of the Agency's high priority research needs.

The research conducted under this objective provides direct support to EPA's Office of Prevention, Pesticides, and Toxic Substances. The exposure measures, methods, and models being developed in this program are intended to characterize actual exposures to pesticides and toxics and to better understand the key factors influencing these exposures. The effects methods and models developed in these areas are used to obtain toxicity data and assess and manage risks of toxic agents under TSCA and the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The results of the application of methods developed under this research program will significantly increase understanding of the impacts of specific classes of pesticides and toxic substances on human health.

EPA's Safe Communities Research Program is designed to: 1) produce more near-term results (e.g., models, better data) for EPA's regulatory-driven needs that are directly applicable to the development of test guidelines required for implementation of TSCA and FIFRA; 2) address human and ecological risks resulting from exposures to toxic chemicals; and 3) develop exposure, effects, risk assessment, and risk management methods for evaluating data submitted under TSCA and FIFRA. The research program supports both human health and ecosystem protection research and is complemented by relevant research described under Goal 8, Sound Science that is of longer-term and broader focus.

This goal is supported by multiple EPA long-range research planning documents, including: 1) the Draft Safe Communities Multiyear Plan; 2) the Research Strategy on Environmental Risks to Children; and 4) the Ecological Research Strategy. These long-term strategies and planning documents provide a framework for EPA's Goal 4 research program to improve the scientific basis for identification, assessment, and management of environmental exposures that pose the greatest health risks to the American public. In the context of performance (or program outcomes), the Government Performance and Results Act (GPRA) requires Federal organizations to establish and publish performance goals in an Annual Performance Plan and report on the extent to which they achieve those goals in Annual Performance Reports. The Safe Communities research program is also subject to the requirements of GPRA.

### *Human Health Research*

Humans are exposed every day to thousands of chemicals individually and/or in multiple

combinations through the air, drinking water, food, and dust. In order to address these concerns, the Safe Communities Human Health Research Program will:

- Develop and verify tools to detect, characterize and quantify exposures to and the key factors influencing the exposures to pesticides and other toxic substances;
- Develop and verify methods to detect, characterize and quantify adverse human health effects that result from these exposures to pesticides and other toxic substances;
- Develop and validate models to predict the human health impacts of exposure to pesticides and other toxic substances; and
- Provide data on the human health and associated effects of selected pesticides and other toxic chemicals, occurring singly or as complex mixtures.

Human health research directly supports the needs of the Agency related to the requirements of TSCA, FIFRA and the Food Quality Protection Act (FQPA). In order to comply with the legislative mandates, research is needed to provide EPA with predictive tools for prioritization of testing requirements and enhanced interpretation of hazard identification and dose-response information. This includes evaluating existing test guidelines and developing new and improved test methods for incorporation into EPA's test guidelines series.

EPA will continue to participate in the Agriculture Health Study (AHS) with the National Cancer Institute (NCI), the National Institute for Environmental Health Sciences (NIEHS), and the National Institute of Occupational Safety and Health (NIOSH). The AHS is a large epidemiological study on the health of men and women in agriculture. The primary objective of the Study is to collect high quality exposure data to evaluate how accurately the AHS questionnaire classifies pesticide application activities and enables the prediction of applicator exposure and dose.

In FY 2004, research will focus on the analysis and reporting of the results from the AHS/Pesticide Exposure Study. Based on this analysis, EPA will deliver high quality exposure data to the National Cancer Institute (NCI) and the National Institute for Environmental Health Sciences (NIEHS) for the development of a tool for identifying and assessing key factors influencing farm applicator exposures to agricultural pesticides. Data collection and sample analyses will be completed in FY 2003 and an interim report will be prepared. Sophisticated statistical analyses of the data will be performed during FY 2004 and a final report and other publications will be developed.

In FY 2004, exposure research will investigate community risks associated with the use of pesticides in agricultural communities, to include secondary volatilization and regional transport of these pesticides. The AGDISP model (formerly known as AgDrift) will be linked to a smaller scale transport module embedded in a spatial (GIS) framework. Exposure methods research will be conducted to support prioritized regional and state needs for rapid screening techniques to assess the occurrence, magnitude and extent of exposures resulting from the use of agricultural pesticides.

In FY 2004, additional exposure research will be conducted to characterize potential exposures to pesticides and their by-products resulting from drinking water treatment processes. This research will be designed to elucidate the underlying processes that describe the fate and transport of selected pesticides, toxic chemicals, and their metabolites from natural water sources through drinking water treatment facilities to individual households.

### *Ecological Research*

As with human exposures, the environment can have complex exposure scenarios. To develop a better understanding of possible exposure scenarios, the Safe Communities Ecological Research Program will:

- Develop and verify tools to detect, characterize and quantify potential exposures to and the key factors that may influence exposures to pesticides and other toxic substances;
- Develop and verify methods to detect, characterize and quantify adverse ecological effects that may result from exposures to pesticides and other toxic substances;
- Develop and validate models to predict the potential ecological impacts of exposure to pesticides and other toxic substances; and
- Provide data on the ecological exposures and associated effects of selected pesticides and other toxic chemicals that may occur singly or as complex mixtures.

Risk issues associated with ecological effects are addressed through applied research techniques that develop methods and models to evaluate the magnitude and duration of environmental exposures and their potential effects on wildlife and plant species. This research creates the scientific foundation for probabilistic risk assessment methods to protect wildlife and plant species by updating methods and models to identify, characterize, predict and assess ecological effects. Safe communities ecological effects and exposure research is highly leveraged with EPA's Ecosystems Protection Research Program under Sound Science (Goal 8).

Ecosystem effects research will address the development of appropriate screening and higher tier ecological effects models, the development of pharmacokinetic models to estimate/extrapolate tissue concentration of chemical agents from laboratory test organisms to wildlife species of concern, and the relative influence of potential exposure to chemicals and other environmental agents, habitat alterations and land use, and natural variability on sustainability of wildlife populations. Research will also develop and validate predictive models, including biologically-based dose response and structure-activity-relationships, to identify and characterize ecological hazard and risk. In FY 2004, EPA will complete a methodology to evaluate population-level effects of pesticides on wildlife and aquatic species.

The ecological exposure research program will investigate the feasibility and design of a coupled primary and secondary (revolatilization and wind erosion) pesticides drift model, AgDrift (discussed above). The research will:

- Apply larger scale risk assessment tools to pesticides and toxic substances issues;

- Refine existing aquatic exposure assessment models, including drinking water, which are used to assess the potential effects of pesticides and toxics on broader scales of ecosystems;
- Develop computerized and validated methods to assess uncertainties in ecological assessments for pesticides and toxic substances; and
- Develop user-friendly models linking distribution of exposure to distribution of toxicity to estimate magnitude and probability of effects to non-target species.

Additionally, exposure research will continue to develop and evaluate probabilistic exposure models for ecological risk assessment by extending existing model technologies to accommodate the full range of variant transport, fate and food chain contamination pathways present in agricultural landscapes and watersheds of North America. Research will also be conducted to assemble the range of datasets needed to execute risk assessments with appropriate geographic specificity in support of pesticide safety evaluations under FIFRA. The models will be linked with user interfaces and reporting capabilities for direct application to the EPA risk assessment paradigm in a statistical and probabilistic decision framework.

Innovative methods for assessing ecological exposures and risks to chiral pesticides – chemically identical organic compounds that have two or more mirror image structures – will be performed. Research will focus on developing enhanced methods for new chiral pesticides; examining the occurrence, degradation and selectivity of these pesticides in soils and agricultural products, selecting and testing enantiomers for biological effects, and assessing the uptake of these pesticides by selected species (e.g., earthworms, aquatic species).

### *Biotechnology Research*

Biotechnology, which is applicable to both human health and ecological research, presents a wealth of opportunities such as genetically modified crops that improve productivity, provide resistance to pests and other stresses, and increase nutritional value. However, concerns about potential risk and our ability to manage these risks, driven primarily by a lack of information, have created considerable public concern.

In FY 2004, EPA will draw on its expertise in risk assessment to evaluate current methodology and, where necessary, develop new methods or new approaches to risk assessment of biotechnology products. Special areas of focus will be risk communication, monitoring, ecological assessment, and risk management to develop effective strategies to mitigate risks when unintended adverse consequences occur and to advance the application of socio-economic methods to better understand issues related to public acceptance of genetically modified products.

Specific activities include, but are not limited to: 1) developing novel methodologies and techniques for pest resistance management; 2) establishing a validated risk assessment strategy for evaluating genetically modified crops under consideration for commercialization; 3) developing an animal model to assess dietary allergenicity of transgenic pesticide proteins in

food crops; 4) developing methods to evaluate and model the potential for gene flow and transfer from engineered plant incorporated protectants to non-target species; and 5) developing standardized and streamlined methodologies for conducting base-line assessments of agricultural and near-field ecosystems non-target species diversity and abundance. The long-term goal of this research is to provide policy-relevant scientific information needed to assess and manage potential risks that genetically modified crops may cause.

In summary, research for safer communities supports EPA's mission through the continued development and validation of improved human health risk and ecological risk assessment methods and models. EPA's regulatory programs use the methods and models developed in these areas to obtain toxicity data and assess and manage risks of toxic agents under TSCA and FIFRA.

### **FY 2004 Change from FY 2003 Request**

#### EPM

- (-\$407,000) This reduction reflects efficiencies achieved in Information Technology projects and systems.
- (+\$1,000,000, +1.0 FTE) This increase will enhance the development of acute exposure guideline levels for extremely hazardous substances to facilitate emergency response, planning and prevention. Funding will also support the development and use of safer alternative chemicals that cannot be used as weapons of mass terror.
- (+\$1,140,600, +4.9 FTE) Resources, dollars and FTE, associated with rent are allocated in proportion to Agency-wide FTE located in each goal, objective. Resources, dollars and FTE, associated with utilities, security and human resource operations are allocated in proportion to Headquarters FTE located in each goal, objective. Changes reflect shifts in FTE between goals and objectives. Resources, dollars and FTE, associated with contracts and grants are allocated in proportion to Headquarters' contracts and grants resources located in each goal, objective. Changes in these activities reflect shifts in resources between goals and objectives. *(Total changes -> rent: +\$1,417,000, utilities: +\$2,374,800, Security: +\$3,425,000 and 75 FTE, Human Resources: +\$870,400 and +5.4 FTE, Contracts: +\$642,400 and -18.5 FTE, Grants: +\$3,015,500 and +19.7 FTE)*

#### S&T

##### Research

- (-\$370,000, -4.0 FTE) EPA is realigning and consolidating its Computational Toxicology Research Program under its Sound Science Goal (Objective 8.3). There are no programmatic impacts.
- There are additional increases for payroll, cost of living, and enrichment for new and existing FTE.

**GOAL: PREVENTING POLLUTION AND REDUCING RISK IN COMMUNITIES, HOMES, WORKPLACES AND ECOSYSTEMS**

**OBJECTIVE: MANAGE NEW CHEMICAL INTRODUCTION AND SCREEN EXISTING CHEMICALS FOR RISK**

**Annual Performance Goals and Measures**

**Risks from Industrial / Commercial Chemicals**

- In 2004 Identify, restrict, and reduce risks associated with industrial/commercial chemicals
- In 2004 Identify, restrict, and reduce risks associated with industrial/commercial chemicals.
- In 2003 Of the approx. 1,800 applic. for new chem. and microorganisms submitted by industry, ensure those marketed are safe for humans and the envir. Increase proportion of commer. chem. that have undergone PMN review to signify they are properly managed and may be potential green altern. to exist. chem.
- In 2002 EPA reviewed all 1,943 Pre-manufacturing Notices received during FY 2002. At the end of 2002, 21.5 percent of all chemicals in commerce had been assessed for risks. A large fraction of these chemicals also may be "green" alternatives to existing chemicals in commerce.

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
Number of TSCA Pre-Manufacture Notice Reviews	1943	1800	1700	Notices
Make screening level health and environmental effects data publicly available for sponsored HPV chemicals	843		900	cum. chemicals
Number of Self-Audited New Chemical Product Alternatives			250	Alternatives
Reduction in the current year production-adjusted Risk Screening Environmental Indicators risk-based score of releases and transfers of toxic chemicals.			2%	Index
Reports of validation studies for four Tier 1 screening assays			4	scrn assays-cum
Number of chemicals for which sets of 15 AEGL values are made Final.			15	add'l chemicals

Baseline: The baseline for TSCA PMNs in FY2004 is zero. (EPA receives about 1,700 PMNs per year for chemicals about to enter commerce. From 1979-2002, EPA reviewed about 40,000 PMNs. Of the 78,000 chemicals potentially in commerce, 16,618 have gone through the risk -screening process.) The baseline for HPV measure is zero chemicals in 1998. The baseline for the RSEI measure is the index calculated for 2003. The baseline for the Tier 1 screening measure is zero in 1996 - no valid methods for endocrine disruptor screening and testing existed when FQPA was enacted in FY1996. The baseline for self-audited new chemical products is under development.

Baseline: The baseline for the AEGL measure under the base program is 29 cumulative chemicals through 2004.

**Program Assessment Rating Tool (PART)**

New Chemicals

As part of the Administration's overall evaluation of effectiveness of Government programs, the New Chemicals program was evaluated with the following specific findings:

- The program has very strong purpose and management.
- The program collaborates with the Department of Labor on worker protection controls and has a cooperative agreement with Florida State University to identify and develop improved environmental indicators and program performance measures.

- While the program has to some extent shown results, the main deficiency is the lack of adequate long-term measures. The measures are not outcomes, do not have clear targets and do not include at least one efficiency measure.
- The PART exercise, however, has resulted in serious attention by the program to develop long-term goals for the program that can demonstrate results for human health and/or the environment.

In response to these findings, the Administration will:

- Maintain funding at the 2003 President's Budget level.
- Recommend improvement of the program's strategic planning, including an independent evaluation of the program, which can result in significant improvement of program results.
- Establish more outcome-oriented measures including at least one efficiency measure.

#### **Verification and Validation of Performance Measures**

**FY 2004 Performance Measures: Reports of validation studies for 13 Tier 1 endocrine disruptor screening assays**

**Performance Database:** Program output; internal tracking system.

**Data Source:** Data collected by program office on number of screening assays validated.

**Methods, Assumptions and Suitability:** All screening assays are peer reviewed by the Scientific Advisory Panel (SAP) or the Agency Science Advisory Board (SAB). Study reports will be presented to the Endocrine Disruptor Methods Validation Subcommittee for review and comment.

**QA/QC Procedures:** All studies are being performed in accordance with EPA approved quality assurance project plans. All validation studies will be conducted using Good Laboratory Practices.

**Data Quality Review:** The SAP/SAB will be charged with identifying any data limitations during the peer review process.

**Data Limitations:** None identified

**Error Estimate:** N/A.

**New/Improved Data or Systems:** N/A.



**References:** Endocrine Disruptor Screening and Testing Advisory Committee (EDSTAC) Report, FY 2000 Report To Congress on the Endocrine Disruptor Screening Program.

## **Verification and Validation of Performance Measures**

**FY 2004 Performance Measure: Number of self-audited new chemical product alternatives under Sustainable Futures.**

**Performance Database:** For this performance measure, EPA tracks the number of PMNs and supporting risk screening information submitted by industry to the Sustainable Futures voluntary program. EPA has developed computerized methodologies for evaluating hazard, exposure and risk based on an analysis of chemical structure. This approach, generally referred to as structure activity relationships, allows risk screening of chemicals early-on in R&D, when safer alternatives may be available and the cost of substitution is lowest. The P2 framework uses these same risk screening methodologies, called the P2 Framework, to evaluate PreManufacture Notices (PMNs) submitted under the Toxic Substances Control Act (TSCA). Under Sustainable Futures, EPA is making the P2 Framework available to industry, together with training and technical assistance. In addition, under Sustainable Futures, participating companies can receive regulatory flexibility for qualifying low hazard/low risk PMNs. This flexibility reduces the regulatory review period for new chemicals by 50 percent. For this performance measure, we track the number of PMNs and supporting risk screening information submitted by industry to the Sustainable Futures voluntary program.

**Data Source:** Industry conducts independent chemical risk screening and submits the data and results of risk screening analyses to EPA together with the PMN submission.

**Methods, Assumptions, and Suitability:** Industry submits the results of risk screenings with their PMNs, allowing EPA to track the level of participation in the Sustainable Futures program and the scope and applicability of the industry submissions. EPA will provide additional training and technical assistance to small businesses. EPA anticipates a relatively small number of companies participating in Sustainable Futures initially, with participation growing steadily over time. Industry response to both the concept of risk screening and the incentives offered, i.e., regulatory flexibility, has been very positive.

**QA/QC Procedures:** EPA will conduct a fully independent risk assessment of each PMN submitted under Sustainable Futures to ensure products commercialized do not present unreasonable risk.

**Data Quality Reviews:** EPA's own internal expert review will be employed to evaluate industry submissions under Sustainable Futures.

**Data Limitations:** EPA's experience indicates that estimates rendered by EPA's risk screening methodologies, included in the P2 Framework, are typically within the same order of magnitude as measured data. EPA's own internal expert review will be employed to evaluate industry submissions under Sustainable Futures. Because Sustainable Futures is a voluntary program, some chemical manufacturers may not submit their PMNs to the Sustainable Futures program.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** EPA will evaluate the nature, quality and applicability of industry submissions under sustainable Futures. The Agency will continue to improve the scope and predictive capabilities of the P2 Framework risk screening methodologies. Data received through the High Production Volume Chemical Challenge program will be valuable in improving the P2 Framework risk screening capabilities by providing additional human and ecological health hazard data and data contributing to modeling of chemical environmental fate and transport.

**References:** None.

#### **FY 2004 Performance Measure: TSCA Pre-manufacture Notice Reviews**

**Performance Database:** New Chemicals Management Information Tracking System (MITS), which tracks information from beginning of Premanufacture Notice (PMN) program (1979) to present. Information includes number of PMNs submitted and final disposition (whether regulated or not) and number of low volume and test market exemptions.

**Data Source:** As industry develops new chemicals, it submits data related to the new chemicals for review to the Agency, including information on chemicals to be manufactured and imported, chemical identity, manufacturing process, use, worker exposure, environmental releases and disposal.

**Methods, Assumptions, and Suitability:** This is an output measure tracked directly through OPPT record-keeping systems. No models or assumptions or statistical methods are employed. Data are aggregated nationally and suitable for cross year comparisons.

**QA/QC Procedures:** Local Area Network (LAN) server contains confidential business information (CBI) support documents on each of the chemicals; data undergo quality assurance/quality control by EPA before being uploaded to the LAN. EPA always checks for consistency among similar chemicals in databases.

**Data Quality Review:** EPA reviews industry data; EPA staff scientists and contractors perform risk screenings and assessments, which could lead to regulation.

**Data Limitations:** None known.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** None planned.

**References:** None.

#### **Verification and Validation of Performance Measures**

**FY 2004 Performance Measure:** Reduction in the FY 2004 production-adjusted Risk-Screening Environmental Indicators risk-based score of releases and transfers of toxic chemicals reported to TRI from the level calculated for FY 2003 (reported in FY 2006 due to TRI data lag).

**Performance Database:** The RSEI Model<sup>36</sup> uses annual reporting from individual industrial facilities along with a variety of other information to evaluate chemical emissions and other waste management activities. RSEI incorporates detailed data from EPA's Toxics Release Inventory (TRI) and Integrated Risk Information System (IRIS), the United States Census, and many other sources. Due to a TRI data lag, performance data will be unavailable for this measure when the FY 2004 Annual Performance Report is prepared. The data will be available for the FY 2006 report.

**Data Source:** The wide variety of data used in the RSEI model were collected by Federal Agencies (United States Census Bureau, EPA, USGS, Commerce Dept. - National Oceanographic and Atmospheric Administration (NOAA), Dept. of Interior – United States Fish and Wildlife Service), State Agencies (air emissions and stack data, fishing license data), and research organizations (such as the Electric Power Research Institute (EPRI)) for a variety of national/state programmatic and regulatory purposes, and for industry-specific measurements.

**Methods, Assumptions, and Suitability:** The RSEI Model generates unique numerical values known as “Indicator Elements” using the factors pertaining to surrogate dose, toxicity and exposed population. Indicator Elements are unit less (like an index number, they can be compared to one-another but do not reflect actual risk), but proportional to the modeled relative risk of each release (incrementally higher numbers reflect greater estimated risk). Indicator Elements are risk-related measures generated for every possible combination of reporting facility, chemical, release medium, and exposure pathway (inhalation or ingestion). Each Indicator Element represents a unique release-exposure event and together these form the building blocks to describe exposure scenarios of interest. These Indicator Elements are summed in various ways to produce “Indicator Values,” which represent the risk-related results for releases users are interested in assessing. RSEI results are for comparative purposes and only meaningful when compared to other scores produced by RSEI. The measure is appropriate for year-to-year comparisons of performance. Depending on how the user wishes to aggregate, RSEI can address trends nationally, regionally, by state or smaller geographic areas.

**QA/QC Procedures:** The Agency annually updates the data sources used within the RSEI model to take advantage of the most recent and reliable data. For example, TRI facilities self-report release data and occasionally make errors. TRI has quality control (QC) functions and an error-correction mechanism for reporting such mistakes. Because of the unique screening-level abilities of the RSEI model, it is possible to identify other likely reporting errors and these are forwarded to the TRI Program for resolution. In developing the RSEI model, the Agency performed numerous QC checks on various types of data. For instance, locational data for on-site and off-site facilities has been checked and corrected, and this information is being supplied to the Office of Environmental Information (OEI) and EPA's Envirofacts database.

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<sup>36</sup> U.S. EPA Office of Pollution Prevention and Toxics, *Risk Screening and Environmental Indicators Model*. Available at <http://www.epa.gov/opptintr/rsei/>

**Data Quality Reviews:** RSEI depends upon a broad array of data resources, each of which has gone through a quality review process tailored to the specific data. It includes data from TRI, Integrated Risk Information System (IRIS), Health Effects Assessment Summary Tables (HEAST), United States Census, etc. All were collected for regulatory or programmatic purposes and are of sufficient quality to be used by EPA, other Federal agencies, and state regulatory agencies. Over the course of its development, RSEI has been the subject of three reviews by EPA's Science Advisory Board.<sup>37</sup>

**Data Limitations:** RSEI relies on data from a variety of EPA and other sources. TRI data may have errors that are not corrected in the standard TRI QC process. In the past, RSEI has identified some of these errors and corrections have been made by reporting facilities. Drinking water intake locations are not available for all intakes nationwide. Where intake locations are known only at the county-level, RSEI distributes the drinking water population between all stream reaches in that county. This could increase or decrease the RSEI risk-related results depending on the pattern of TRI releases on the stream reaches in that county. If the actual uptake location were on a highly polluted stream reach, this approach would underestimate risk by distributing the drinking water population to less-polluted reaches. In coastal areas, some releases may go directly to the ocean, rather than nearby streams. The Agency is in the process of systematically correcting potential errors regarding these releases. These examples are illustrative of the data quality checks and methodological improvements that are part of the RSEI development effort. Data sources are updated annually and all RSEI values are recalculated on an annual basis.

**Error Estimate:** In developing the RSEI methodology, both sensitivity analyses and groundtruthing studies have been used to address model accuracy (documentation is provided on the RSEI Home Page - [www.epa.gov/oppt/env\\_ind/](http://www.epa.gov/oppt/env_ind/)). For example, groundtruthing of the air modeling performed by RSEI compared to site-specific regulatory modeling done by the state of New York showed virtually identical results in both rank order and magnitude. However, the complexity of modeling performed in RSEI, coupled with un-quantified data limitations, limits a precise estimation of errors that may either over- or under-estimate risk-related results.

**New/Improved Data or Systems:** RSEI developers regularly track improvements in Agency databases (e.g., SDWIS and Reach File databases) and incorporate newer data into the RSEI databases. Such improvements can also lead to methodological modifications in the model. Corrections in TRI reporting data for all previous years are captured by the annual updates of the RSEI model.

**References:** The methodologies used in RSEI were documented for the 1997 review by the EPA Science Advisory Board. The Agency has also provided this and other technical documentation on the RSEI Home Page, and is revising the existing methodology documents concurrent with the second beta release of RSEI Version 2.0.

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<sup>37</sup> U.S. EPA Office of Pollution Prevention and Toxics, *Risk Screening Environmental Indicators Model, Peer Reviews*. Available at <http://www.epa.gov/opptintr/rsei/faqs.html>

## Bibliography:

RSEI Methodology Document (describes data and methods used in RSEI Modeling)

RSEI User's Manual (PDF, 1.5 MB) explains all of the functions of the model, the data used, and contains tutorials to walk the new user through common RSEI tasks. A more general overview of the model can be found in the RSEI Fact Sheet (PDF, 23 KB).

## Technical Appendices:

Technical Appendix A (PDF, 85 KB) - Available Toxicity Data for TRI Chemicals

Technical Appendix B (PDF, 291 KB) - Physicochemical Properties for TRI Chemicals and Chemical Categories

Technical Appendix C (PDF, 125 KB) - Derivation of Model Exposure Parameters

Technical Appendix D (PDF, 183 KB) - Locational Data for TRI Reporting Facilities and Offsite Facilities

Technical Appendix E (PDF, 98 KB) - Derivation of Stack Parameter Data

Technical Appendix F (PDF, 109 KB) - Additional Information on Flag Fields

Technical Appendix G (PDF, 46 KB) - Summary of Differences Between RSEI Data TRI Public Release Data

**Performance Measure: Make screening level health and environmental effects data publicly available for HPV chemicals.**

**Performance Database:** EPA is developing an electronic chemical right-to-know database system, called the United States High Production Volume (US HPV) database, which will allow organized storage and retrieval of all available information on High Production Volume chemicals in commerce in the United States. The US HPV database will be designed to store in a systematic fashion, physical chemistry, fate, exposure, and toxicity data on listed chemicals for Agency and public use. The United States HPV database will be operational in late 2003.

**Data Source:** Industry submits test plans and robust summaries of risk screening data in response to the voluntary HPV Challenge program or EPA promulgated test rules.

**Methods, Assumptions, and Suitability:** This is an output measure tracked directly through OPPT record-keeping systems. No models or assumptions or statistical methods are employed. Data are aggregated nationally and suitable for cross year comparisons.

**QA/QC Procedures:** Data undergo quality assurance/quality control by EPA before being uploaded to the database. EPA reviews industry submissions of robust summaries of hazard data on individual chemicals and chemical categories, and test plans based on those summaries. EPA

determines whether industry data addressing the chemical parameters adequately support the summaries and test plans. Data review does not include new information received as a result of new testing.

**Data Quality Review:** Review of industry data.

**Data Limitations:** Data are primarily hazard data, not exposure data. Data are suitable to support screening level assessments only.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** Data will be integrated with other Toxic Substances Control Act (TSCA) databases into an Oracle environment.

**References:** United States EPA Office of Pollution Prevention and Toxics, High Production Challenge Program, US HPV database to be available in 2003 at <http://www.epa.gov/chemrtk/hpvchmlt.htm>

### **Coordination with Other Agencies**

EPA's chemical testing data provides information for the occupational Safety and Health Administration's (OSHA) worker protection programs, the National Institute for Occupational Safety and Health (NIOSH) for research, and the Consumer Product Safety Commission (CPSC) for informing consumers about products through labels. EPA frequently consults with these agencies on project design, progress and the results of chemical testing projects. The National Institute of Occupational Safety and Health (NIOSH), the Mine Safety and Health Association (MSHA) and EPA meet monthly to coordinate on issues such as mercury recycling, a proposed rule on worker protection for acrylamide, and issues relating to vermiculite/asbestos at a Superfund site in Montana. The Agency of Toxic Substances and Disease Registry (ATSDR) has asked EPA to develop TSCA Section 4 testing actions for certain chemicals that are found frequently at Superfund sites.

The AEGL is a collaborative effort that includes nine Federal agencies (EPA, DOE, DOD, DOT, NIOSH, OSHA, CDC, ATSDR, and FDA), numerous state agencies, private industry, academia, emergency medical associations, unions, and other organizations in the private sector. The program also has been supported internationally by the OECD and includes active participation by the Netherlands, Germany and France.

### **Research**

EPA is among six agencies within the Federal government that conducts intramural human and environmental health research (EPA, NIEHS, National Cancer Institute, Centers for Disease Control and Prevention - CDC, Food and Drug Administration, and Agency for Toxic Substances and Disease Registry). The Agency conducts research in all elements of the human health risk assessment paradigm (i.e., exposure, effects, risk assessment, and risk management), making EPA's contribution unique within the Federal government. EPA is widely recognized both nationally and internationally for its work in identifying the relationship between human

health effects and exposure to environmental pollutants. Basic research on the mechanisms underlying these effects in combination with problem-driven research programs contribute significantly to the Agency's ability to fulfill its goals and objectives under several environmental mandates.

The CDC, through the National Center for Environmental Health (NCEH), studies health problems associated with human exposure to lead, radiation, air pollution, and other toxics, as well as to hazards resulting from technologic or natural disasters. These are mainly surveillance and epidemiology studies and NCEH is particularly interested in studies that benefit children, the elderly, and persons with disabilities. The NCEH laboratory supports many of EPA's studies and is the analytical laboratory for samples collected in the EPA-sponsored pesticide study in the National Health and Nutrition Examination Survey (NHANES-4) being conducted by the National Center for Health Statistics (NCHS) of CDC. NHANES-4 is a survey of the national population and includes data on potentially sensitive sub-populations such as children and the elderly. EPA is participating in this survey with NCHS to collect information on children's exposure to pesticides and other environmental contaminants.

The National Institute of Child Health and Human Development (NICHD) supports laboratory, clinical, and epidemiological research on the reproductive, neurobiological, developmental, and behavioral processes that determine (and maintain) the health of children and adults. EPA is collaborating with NICHD, CDC, and other Federal agencies in the design and implementation of a National Children's Study of 100,000 children, who will be enrolled during the mother's pregnancy and followed throughout childhood and adolescence. This study was mandated in the Children's Health Act of 2000 to study environmental influences on children's health and development.

### **Statutory Authorities**

Toxic Substances Control Act (TSCA) section 4, 5, 6, 8, 12(b) and 13 (15 U.S.C. 2603-5, 2607, 2611 and 2612)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) sections 3, 4, 5, 6, 11, 18, 24, and 25 (7 U.S.C. 136a, 136a-1, 136c, 136d, 136i, 136p, 136v, and 136w)

Federal Food, Drug, and Cosmetic Act (FFDCA)

### **Research**

Toxic Substances Control Act (TSCA)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Federal Food, Drug, and Cosmetic Act (FFDCA)

## Environmental Protection Agency

### FY 2004 Annual Performance Plan and Congressional Justification

#### Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

**Objective:** Ensure Healthier Indoor Air.

By 2005, 16 million more Americans than in 1994 will live or work in homes, schools, or office buildings with healthier indoor air.

#### Resource Summary (Dollars in Thousands)

	<b>FY 2002 Actuals</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
<b>Ensure Healthier Indoor Air.</b>	<b>\$40,290.3</b>	<b>\$40,322.7</b>	<b>\$42,380.4</b>	<b>\$2,057.7</b>
Environmental Program & Management	\$29,514.7	\$30,455.1	\$32,995.5	\$2,540.4
Science & Technology	\$2,187.8	\$1,727.7	\$1,234.9	(\$492.8)
State and Tribal Assistance Grants	\$8,587.8	\$8,139.9	\$8,150.0	\$10.1
Total Workyears	123.6	132.2	126.1	-6.1

#### Key Program (Dollars in Thousands)

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Air, State, Local and Tribal Assistance Grants: Other Air Grants	\$8,139.9	\$8,139.9	\$8,150.0	\$10.1
Children's Indoor Environments	\$13,287.9	\$13,918.4	\$16,714.5	\$2,796.1
Facilities Infrastructure and Operations	\$1,799.7	\$1,846.2	\$1,866.2	\$20.0
Indoor Environments	\$9,366.2	\$9,307.6	\$8,859.3	(\$448.3)
Legal Services	\$92.8	\$103.5	\$107.2	\$3.7
Management Services and	\$526.6	\$513.2	\$495.2	(\$18.0)



	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Stewardship				
Radon	\$6,453.0	\$6,493.9	\$6,188.0	(\$305.9)
Regional Management	\$4.0	\$0.0	\$0.0	\$0.0

## **FY 2004 Request**

### Health Effects of Indoor Air Pollution

Research conducted by the Environmental Protection Agency (EPA) and others, beginning in the late 1970's, indicates that Americans spend about 90 percent of their time indoors, where they are exposed to levels of pollutants that are often higher than those outdoors. As a result, indoor air pollution can pose high risks to human health, especially to sensitive populations, and has been ranked among the top four environmental risks in relative risk reports issued by EPA, the Science Advisory Board, and several states, such as Florida and California. Estimates of the economic costs to the nation of poor indoor air quality, including lost worker productivity, direct medical costs for those whose health is adversely affected, and damage to equipment and materials, are on the order of tens of billions of dollars per year. (Report to Congress on Indoor Air Quality, EPA/400/1-89-001). In 2000, the National Academy of Sciences (NAS) affirmed the significance of indoor triggers of asthma and the alarming increase in asthma rates nationwide (*Clearing the Air: Asthma and Indoor Air Exposures*, (ISBN 0-309-06496-1, January 2000).

Indoor air pollutants continue to have significant impacts in our homes, schools, and workplaces:

- Nearly one in 13 school-aged children has asthma. There is substantial evidence that indoor exposures to dust mites and environmental tobacco smoke (ETS, also known as second-hand smoke), pests, molds, and pets play a significant role in triggering asthma episodes, and, in some instances, are causally linked to the development of the disease. (Institute of Medicine, National Academy of Sciences (U.S.)). Committee on the Assessment of Asthma and Indoor Air. *Clearing the Air: Asthma and Indoor Air Exposures*. 2000. Washington. National Academy Press.)
- Asthma's estimated annual cost to the Nation is \$14.0 billion (National Heart, Lung, and Blood Institute, (NHLBI) 2002).
- Young children are exposed to ETS in approximately 29 percent of United States homes, increasing their risk for asthma and causing thousands of lung infections and other diseases. (Results of a national telephone survey entitled "Radon Risk Communication and Results Study," commissioned by EPA in 1994 and 1996. EPA expects updated results in mid-2003.)

- In 1999, indoor air quality was reported to be unsatisfactory in about one in five schools in the United States, while ventilation was reported as unsatisfactory in about one-quarter of public schools. This translates to over 11 million students attending public schools reporting unsatisfactory indoor air quality and about 14 million students attending public schools reporting unsatisfactory ventilation. (*Condition of America's Public School Facilities: 1999*, National Center for Education Statistics, Office of Educational Research and Improvement, United States Department of Education, NCES2000-032, June 2000.)
- Radon is the second leading cause of lung cancer and is estimated to be responsible for 15,000 to 22,000 deaths per year (BEIR VI, NAS, February 1998). In 1992, EPA estimated that nearly one out of every 15 homes had radon concentrations above the EPA recommended action level. (*National Residential Radon Survey, 1992*)

### Indoor Environments Program Strategy

EPA has two major strategies to meet its human health objective for indoor air quality:

- **Increase Public Awareness:** EPA raises public awareness of actual and potential indoor air risks so that individuals can take steps to reduce exposure. Outreach activities, in the form of educational literature, media campaigns, hotlines, and clearinghouse operations, provide essential information about indoor air health risks not only to the public, but to the professional and research communities as well. Underpinning EPA's outreach efforts is a strong commitment to environmental justice, community-based risk reduction, and customer service. For example, the award-winning media campaign undertaken in partnership with the Advertising Council seeks to educate people about asthma and the role that indoor environmental triggers can play in the worsening of the disease.
- **Increase Partnerships:** Through partnerships with non-governmental and professional entities, EPA disseminates multi-media materials encouraging individuals, schools, and industry to take action to reduce health risks in their indoor environments. In addition, EPA uses technology transfer to improve the ways in which all types of buildings, including schools, homes, and workplaces, are designed, operated, and maintained. To support these voluntary approaches, EPA incorporates the most current science available as the basis for recommending ways that people can reduce exposure to indoor contaminants.

To reach people at the local level, EPA uses assistance agreements and cooperative partnerships to collaborate with organizations such as the American Academy of Pediatrics, the Asthma and Allergy Foundation of America, the National Association of Counties, the National Education Association, the American Lung Association, the Consumer Federation of America, the National Environmental Health Association, and the National Council of La Raza. These partnerships allow EPA to successfully reach and educate target audiences with messages about how to reduce public health risks posed by indoor air contaminants. Targeted audiences include: health care providers who treat children with asthma, school personnel who manage the environments where children spend many hours each day, county and local environmental health officials, and disproportionately affected and disadvantaged populations. Through this national partner

network of over 30 organizations and more than 1,000 local field affiliates, EPA leverages the personnel, expertise, and credibility of these groups to provide the tools to their target audiences and to the general public, to make informed decisions about reducing health risks in their indoor environment.

EPA will broaden awareness and action through national organizations focused on addressing indoor asthma triggers, as well as other indoor health risks and partner with other local community-based organizations for implementation. These agreements will provide maximum flexibility for states and communities to design programs that address critical indoor air quality problems, including radon, asthma, mold contamination, and secondhand smoke in homes, in child care and school facilities, and in other residential environments. Some of the residential environments, such as multi-family, low-income housing, may involve complex issues such as who controls the condition of the indoor environment and whether resources are available to make needed repairs or improvements. Schools may have a range of indoor environmental problems that can be addressed through community-based efforts.

### Indoor Environments: Children's Health Emphasis

#### Asthma

EPA and CDC co-chair the Asthma Workgroup of the President's Task Force on Environmental Health Risks and Safety Risks to Children. In response to the recommendation of this Task Force in FY 2000, the Administration proposed a multi-agency initiative to substantially increase the Federal government's efforts to combat asthma in children. The initiative was based on *Asthma and the Environment: A Strategy to Protect Children*, which currently serves as the framework for DHHS, EPA and other Federal collaboration on asthma issues. In addition to the Task Force recommendations in 2000 to increase research, surveillance, and efforts to reduce the disproportionate impact of asthma on minorities and those living in poverty, a strong recommendation was made to expand existing public health programs through the incorporation of environmental management of asthma triggers into comprehensive asthma management programs. Indoor exposure to allergens and pollutants is known to play a significant role in the exacerbation of asthma in children. Subsequently, EPA launched a national, multi-faceted asthma education and outreach program, which stresses the importance of incorporating environmental management into asthma education, outreach and management strategies. EPA implements comprehensive asthma management programs through partnerships with national organizations. EPA is also working closely with Federal agencies and non-governmental organizations through the National Asthma Education and Prevention Program (NAEPP).

Childhood asthma has been characterized by the Centers for Disease Control (CDC) as an epidemic. The number of children with asthma has more than doubled since 1980. During the period 1996 - 1998, an estimated five million children had asthma (National Center for Health Statistics, CDC). In 1996, 210,000 hospitalizations for asthma were for children under the age of 18 (National Center for Environmental Health, CDC). From 1977 to 1995, there was a three-fold increase in the number of deaths from asthma, and each year over 14 million school days are missed due to this disease (*Morbidity and Mortality Weekly Report, Surveillance Summaries, Surveillance for Asthma 1980-1999*: CDC. March 29, 2002). While there is no known cure for

asthma at this time, the medical community agrees, and it is established in national guidelines, that both medical treatment and environmental management are needed to effectively control asthma. However, indoor environmental management is often not practiced and often not part of the prescription for managing asthma. In FY 2004, EPA will focus its indoor environments program on implementing successful techniques to expand awareness of asthma triggers. EPA is targeting three primary audiences to help address indoor asthma triggers nationwide: the general public, school and child care communities, and the health care providers.

In FY 2004, EPA will build on the success of its national “Indoor Air Quality (IAQ) Tools for Schools” (TfS) program and expand implementation of this program to more schools. Adoption of EPA’s low-cost/no-cost guidelines for proper operation and maintenance of school facilities results in healthier indoor environments for all students and staff, but is of particular help to children with asthma, lessening the degree to which they are exposed to indoor asthma triggers. By increasing the number of schools where TfS indoor air quality guidelines are adopted and implemented, healthier indoor air will be provided for over a million students, staff, and faculty. The Agency will continue to promote the adoption of healthy building practices in existing school operations. In FY 2003, EPA will release new web-based guidance to assist school districts in integrating indoor environmental quality and high performance goals into the design, construction, and renovation of school buildings. In FY 2004, these two products will increase the number of existing and new schools that protect students and staff from the health risks posed by poor school environments.

Preliminary results, based on feedback from stakeholders, have shown that schools and school districts across the nation are reaping the benefits of improved indoor air quality by successfully implementing the IAQ TfS Kit and Program. To increase awareness of the TfS Program and the newer Design Tools for Schools guidance, the Agency will continue to partner with various non-governmental organizations to promote widespread adoption, including sponsoring an annual schools symposium, bringing together school officials, nurses, teachers, facility managers and planners, parents, and others to discuss current issues and the potential negative effect poor indoor air quality can have on our children’s health. In FY 2002, the IAQ Schools Symposium attracted some 500 participants more than 100 more school officials and personnel than had participated in FY 2001. The size of the Symposium has grown dramatically since its inception in FY 2000, indicating growing interest on the part of schools and school districts nationwide.

EPA will continue to refine its schools materials as new information becomes available, and as we analyze information we solicit from schools in the form of case studies about how implementation proceeded and what costs and benefits were realized. Likewise, we will be actively seeking feedback from users of the newer design guidance to continuously refine the information we offer to the target community. Results of a national survey of school operation and maintenance practices administered in late FY 2002, which are expected in FY 2003 will also help us understand what more needs to be done to meet the needs of schools throughout the country that are struggling to overcome indoor environment problems in the face of constrained resources for school operation and maintenance. EPA remains particularly concerned about those schools in inner city areas that are experiencing significant facility deterioration but are unable to garner the funds needed for repair or replacement. These schools represent a distinct challenge for TfS adoption.

In FY 2004, EPA will expand its efforts to address children's asthma health concerns in schools by funding implementation of comprehensive environmental and asthma management systems that utilize Tools for Schools as the framework for addressing all potential asthma related children's health risks in school environments. Though indoor air is the primary exposure route for asthma triggers, exposure to diesel exhaust is also linked to asthma, and exposure to a wide range of chemical respiratory irritants commonly found in and around schools (e.g., science labs, art supplies, cleaning agents, and pesticides) may also be associated with exacerbation of asthma. Tools for Schools is a proven environmental management system for schools that stresses teamwork, comprehensive "whole building" strategies, and multi-media approaches. As schools struggle to finance critical education priorities while ensuring a safe and healthy learning environment for children, it is critical that the Federal government better integrate its existing environmental management programs for schools. This integration allows schools to efficiently manage their limited resources so they can target the most pressing environmental health issues, such as asthma. EPA will fund 5-10 additional national, regional, or community based results-oriented programs that utilize a multi-media approach to addressing all potential asthma triggers, through effective and innovative integration of existing proven programs such as Tools for Schools and Open Airways for Schools as well as programs addressing other environmental triggers of asthma.

EPA also will expand the number of schools in which school-based asthma education programs, such as the American Lung Association's (ALA) "*Open Airways*" and the National Association of School Nurses' (NASN) "*Managing Asthma Triggers: Keeping Students Healthy*," are offered. We will continue to place emphasis on reaching inner city schools with disproportionately affected populations. These programs teach students with asthma to identify and control their exposure to asthma triggers in their environment and help staff and teachers understand the steps they can take to improve their school's asthma management.

The Agency will be assessing the effectiveness of in-home asthma education and mitigation interventions during FY 2003 to determine strategic directions for FY 2004 and beyond. Successful interventions continue to be demonstrated by a number of community-based pilot programs (e.g., National Cooperative Inner City Asthma Study, Bureau of Primary Health Care Asthma Collaborative, and Centers of Excellence in Children's Environmental Health Research). Those interventions determined to be most effective will be replicated in an attempt to reach increasingly larger audiences with programs tailored to their particular needs, teaching practical skills as well as motivating behavioral change. For example, in FY 2001, the year for which data is the most complete and accurate, the Agency partnered with the Asthma and Allergy Foundation of America to educate 2,233 child-care providers on how to provide a safe and healthy environment for children with asthma and allergies. Combined, these child-care providers administered care for over 19,000 children in FY 2001. Pre- and post-tests indicate a marked improvement in participant knowledge of asthma. As a result of the training, 86% of the participants indicated they would make changes in the child-care setting to reduce exposures to indoor asthma triggers, with most planning multiple interventions. Child care providers reported higher implementation rates at follow-up than predicted as course completion for: increased cleaning and dusting, more frequent vacuuming, pest control measures, smoking prohibitions, mold elimination, use of pillow and mattress covers and carpet removal. This project does not track the health of children with asthma in daycare. It focuses on increasing the awareness and

action of child care provide to reduce known environmental asthma triggers in the child care setting which can benefit all children and staff in the center, especially those with asthma.

### Additional Asthma Programs

EPA will build on its national public awareness campaign to improve the public's understanding of indoor asthma triggers and the steps they should take to reduce their exposure as part of a comprehensive asthma management plan. We will continue to focus attention on children with asthma, their caregivers, on low-income adults with asthma, and on disproportionately impacted members of the public who are more vulnerable to poor indoor conditions. In FY 2003, EPA will explore the extent to which the elderly may be at greater risk from poor indoor environments than is the population as a whole. Should evidence suggest that the health risk is greater in this segment of the population, EPA will work collaboratively in FY 2004 with organizations that advocate for the protection of the elderly to focus outreach and education efforts on reducing exposure to possible indoor environmental contaminants.

EPA expects, as a result of Agency programs, that 834,400 Americans will be living in healthier residential indoor environments in FY 2004. Part of meeting this goal includes expanding the Agency's successful education and outreach efforts to the public about sound indoor environmental management techniques with respect to asthma. In addition, the Agency will continue to focus on ways to assist the health-care community to raise its awareness of, and attention it pays to, indoor asthma triggers and their role in provoking asthma attacks in those with the disease. EPA, in conjunction with the Department of Health and Human Services (HHS), will continue to seek opportunities to interact with managed care organizations and health insurers to promote effective asthma care practices and to encourage greater emphasis on avoidance of asthma triggers, as part of a comprehensive asthma treatment regimen.

### Environmental Tobacco Smoke

As of 1996, young children were being exposed to ETS in 27% of United States homes. ETS exposure increases the risk of lower respiratory tract infections such as bronchitis and pneumonia. EPA estimates that between 150,000 and 300,000 of these cases in infants and children up to 18 months of age are attributable to exposure to ETS (EPA 1992). ETS exposure is causally associated with increased risk of acute and chronic middle ear disease (WHO, 1999). Asthmatic children are especially at risk, as ETS exposure increases the number of episodes and severity of symptoms for up to a million asthmatic children (*Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*, United States EPA, 1993 and National Cancer Institute, *Health Effects of Exposure to Environmental Tobacco Smoke, Monograph No. 10*). Recent studies also have suggested links between ETS exposure, sudden infant death syndrome, and low birth weight (National Cancer Institute, *Health Effects of Exposure to Environmental Tobacco Smoke, Monograph No. 10*).

To address this health risk, the Agency is pursuing a multi-media campaign on ETS, focusing on expanding participation in the "Smoke Free Homes Pledge" program, which targets the parents of young children advising them not to expose children to smoke inside the home. EPA will be providing technical support directly to state and local government and public health organizations to develop and make available tools and resources which motivate parents and

guardians to make their homes smoke-free. The extent to which adult smoking in homes with young children has changed in recent years will be better understood in late 2003, when results of a national survey including this information will be available.

### Indoor Environments: Homes, Schools, and Buildings Programs

EPA continues to work toward bottom line outcome-oriented results for the Indoor Environments base programs. This includes the number of office buildings managed with good Building Air Quality practices, home radon tests completed, home radon mitigation accomplished, and new homes built with radon-resistant features. EPA provides assistance to the public, to states, tribes, and other governmental agencies, and to non-governmental organizations to help meet the program's objective to reduce indoor environmental pollutants.

Through the State Indoor Radon Grant Program, EPA provides assistance to the states for the development and implementation of programs to assess and mitigate radon, thereby enhancing the effectiveness of state and local activities for radon risk management. The state grant program helps:

- establish the basic elements of an effective Radon Program in states that have not yet done so;
- support innovation and expansion in states that currently have programs in place; and
- strengthen the Federal/state partnership by helping states develop radon program elements and activities.

### **FY 2004 Change from FY 2003 Request**

#### EPM

- (+\$2,000,000) EPA will expand the number of Tools for Schools partnerships that emphasize comprehensive, results-oriented environmental and asthma management systems for schools. EPA will also expand the number of schools in which school-based asthma management education programs are offered.

### **GOAL: PREVENTING POLLUTION AND REDUCING RISK IN COMMUNITIES, HOMES, WORKPLACES AND ECOSYSTEMS**

#### **OBJECTIVE: ENSURE HEALTHIER INDOOR AIR.**

### **Annual Performance Goals and Measures**

#### **Healthier Residential Indoor Air**

In 2004	834,400 additional people will be living in healthier residential indoor environments.
In 2003	834,400 additional people will be living in healthier residential indoor environments.
In 2002	On track to ensure that 834,400 additional people will be living in healthier residential indoor environments.

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
People Living in Healthier Indoor Air	Data Lag	834,400	834,400	People
Baseline:	1. By 2004, increase the number of people living in homes built with radon resistant features to 3,950,000 from 600,000 in 1994. (cumulative) 2. By 2004, decrease the number of children exposed to ETS from 19,500,000 in 1994 to 16,556,000. (cumulative) 3. By 2004, increase the number of people living in radon-mitigated homes to 1,689,700 from 780,000 from 1994. (cumulative) 4. By 2004, increase by 180,600 the number of people with asthma and their caregivers who are educated about indoor air asthma triggers.			

**Healthier Indoor Air in Schools**

In 2004	1,575,000 students, faculty and staff will experience improved indoor air quality in their schools.
In 2003	1,050,000 students, faculty and staff will experience improved indoor air quality in their schools.
In 2002	On track to ensure that 1,228,500 students, faculty and staff will experience improved indoor air quality in their schools.

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
Students/Staff Experiencing Improved IAQ in Schools	Data Lag	1,050,000	1,575,000	Students/Staff
Baseline:	The nation has approximately 110,000 schools with an average of 525 students, faculty and staff occupying them for a total baseline population of 58,000,000. The IAQ "Tools for Schools" Guidance implementation began in 1997. For FY 2004, the program projects an additional 3,000 schools will implement the guidance and seeks to obtain implementation commitments from 10 of the 50 largest school districts in the United States with an average of 140,000 per district. (Additional, not cumulative since there is not an established baseline for good IAQ practices in schools.)			

**Verification and Validation of Performance Measures**

**FY 2004 Overarching Performance Measure: People Living in Healthier Indoor Air**

**FY 2004 Supporting Performance Measure: People Living in Radon Resistant Homes**

**Performance Database: Survey**

**Data Source:** The survey is an annual sample of home builders in the United States most of whom are members of the National Association of Home Builders (NAHB). NAHB members construct 80% of the homes built in the United States each year. Using a survey methodology reviewed by EPA, NAHB Research Center estimates the percentage of these homes that are built radon resistant. The percentage built radon resistant from the sample is then used to estimate what percent of all homes built nationwide are radon resistant. To calculate the number of people living in radon resistant homes, EPA assumes an average of 2.67 people per household. NAHB Research Center has been conducting this annual builder practices survey for nearly a decade, and has developed substantial expertise in the survey's design, implementation, and analysis. The statistical estimates are typically reported with a 95 percent confidence interval.

**Methods, Assumptions, and Suitability:** NAHB Research Center conducts an annual survey of home builders in the United States to assess a wide range of builder practices. NAHB Research Center voluntarily conducts this survey to maintain an awareness of industry trends in order to improve American housing and to be responsive to the needs of the home building industry. The annual survey gathers information such as types of houses built, lot sizes, foundation designs, types of lumber used, types of doors and windows used, etc. The NAHB Research Center Builder Survey also gathers information on the use of radon-resistant design features in new houses, and these questions comprise about two percent of the survey questionnaire.



In January of each year, the survey of building practices for the preceding calendar year is typically mailed out to home builders. For the most-recently completed survey, for building practices during calendar year 2000, NAHB Research Center reported mailing the survey to about 39,000 active United States home building companies, and received about 2,200 responses which translates to a response rate of about 5.6 percent. This is the response rate for the entire survey. The survey responses are analyzed with respect to State market areas and Census Divisions in the United States, and are analyzed to assess the percentage and number of homes built each year that incorporate radon-reducing features. The data are also used to assess the percentage and number of homes built with radon-reducing features in high radon potential areas in the United States (high risk areas). Other analyses include radon-reducing features as a function of housing type, foundation type, and different techniques for radon-resistant new home construction. The data are suitable for year-to-year comparisons.

**QA/QC Procedures:** Because data are obtained from an external organization, QA/QC procedures are not entirely known. According to NAHB Research Center, QA/QC procedures have been established, which includes QA/QC by the vendor that is utilized for key entry of data.

**Data Quality Review:** Because data are obtained from an external organization, Data Quality Review procedures are not entirely known. NAHB Research Center indicates that each survey is manually reviewed, a process that requires several months to complete. The review includes data quality checks to ensure that the respondents understood the survey questions and answered the questions appropriately. NAHB Research Center also applies checks for open-ended questions to verify the appropriateness of the answers. In some cases where open-ended questions request numerical information, the data is capped between the upper and lower three percent of the values provided in the survey responses. Also, a quality review of each year's draft report from NAHB Research Center is conducted by the EPA project officer.

**Data Limitations:** The majority of home builders surveyed are NAHB members. The NAHB Research Center survey also attempts to capture the activities of builders that are not members of NAHB. Home builders that are not members of NAHB are typically smaller, sporadic builders that in some cases build homes as a secondary profession. To augment the list of NAHB members in the survey sample, NAHB Research Center sends the survey to home builders identified from mailing lists of builder trade publications, such as Professional Builder magazine. There is some uncertainty as to whether the survey adequately characterizes the practices of builders who are not members of NAHB. The effects on the findings are not known.

Although an overall response rate of 5.6 percent could be considered low, it is the response rate for the entire survey, of which the radon-resistant new construction questions are only a very small portion. Builders responding to the survey would not be doing so principally due to their radon activities. Thus, a low response rate does not necessarily indicate a strong potential for a positive bias under the speculation that builders using radon-resistant construction would be more likely to respond to the survey. NAHB Research Center also makes efforts to reduce the potential for positive bias in the way the radon-related survey questions are presented.

**Error Estimate:** See Data Limitations

**New/Improved Data or Systems:** None

**References:** The results are published by the NAHB Research Center in annual reports of radon-resistant home building practices; see <http://www.nahbrc.org/>. The most recent report, A Builder Practices Report: Radon Reducing Features in New Construction 2000, Annual Builder and Consumer Practices Surveys by the NAHB Research Center, Inc., January 24, 2002. Similar report titles exist for prior years.

**FY 2004 Supporting Performance Measure: People Living in Radon Mitigated Homes**

**Performance Database:** External

**Data Source:** Radon fan manufacturers report fan sales to the Agency. EPA assumes one fan per radon mitigated home and then multiplies it by the assumed average of 2.67 people per household.

**Methods, Assumptions and Suitability:** N/A.

**QA/QC Procedures:** Because data are obtained from an external organization, EPA relies on the business practices for reporting data of the radon fan manufacturers.

**Data Quality Review:** Data are obtained from an external organization. EPA reviews the data to ascertain their reliability and discusses any irregularities with relevant manufacturer.

**Data Limitations:** Reporting by radon fan manufacturers is voluntary and may underestimate the number of radon fans sold. Nevertheless, these are the best available data to determine the number of homes mitigated. There are other methods to mitigate radon including: passive mitigation techniques of sealing holes and cracks in floors and foundation walls, installing sealed covers over sump pits, installing one-way drain valves in untrapped drains, and installing static venting and ground covers in areas like crawl spaces. Because there are no data on the occurrence of these methods, there is again the possibility that the number of radon mitigated homes has been underestimated.

When EPA produces an updated version of its Radon Results (1985-1999) report, it will use more/most recent census data, as appropriate.

No radon vent fan manufacturer, vent fan motor maker or distributor is required to report to EPA; they provide data/information voluntarily to EPA. There are only four (4) radon vent fan manufacturers of any significance; one of these accounts for an estimated 70% of the market.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** None

**References:** See <http://www.epa.gov/iaq/radon/pubs/index.html> for National performance/progress reporting (National Radon Results: 1985-1999) on radon, measurement, mitigation and radon-resistant new construction.

**FY 2004 Supporting Performance Measure: Number of people with asthma who have taken steps to reduce their exposure to indoor environmental asthma triggers.**

**Performance Database:** National telephone survey (National Survey on Environmental Management of Asthma) of a representative sample of 87,652 households, expected to produce 7,889 eligible individuals (based on the number households predicted to have occupants with asthma).

**Data Source:** EPA is the data source. The survey, which has received Office of Management and Budget clearance, seeks information about the measures taken by people with asthma (and parents of children with asthma) to minimize exposure to indoor environmental asthma triggers. All of the questions asked are linked to the survey's objective of determining the extent to which indoor environmental management measures are used by these individuals.

**Methods, Assumptions and Suitability:** EPA has designed a questionnaire in which the respondents are asked to provide primarily yes/no responses. In some cases, respondents are given a range of responses in the form of multiple choice questions and are asked to indicate the one which best defines their response. The survey seeks information on those environmental management measures that the Agency considers important in reducing an individual's exposure to known indoor environmental asthma triggers. By using yes/no and multiple choice questions, the Agency has substantially reduced the amount of time necessary for the respondent to complete the survey and has ensured consistency in data response and interpretation.

The survey instrument was developed in consultation with staff from EPA's Indoor Environments Division (IED), EPA's Regional offices, and the National Center for Health Statistics (NCHS) to ensure that respondents will understand the questions asked and will provide the type of data necessary to measure the Agency's objectives.

EPA estimates that of the 87,652 households which make up the sampling frame, 60 percent, or 52,591, will be contacted successfully and will agree to participate in the screening survey. Of these 52,591 individuals, EPA expects that 15 percent, or 7,889 individuals, will either have asthma or live with someone who does. Only those individuals who have asthma or live with someone who does are considered to be eligible respondents.

**QA/QC Procedures:** Survey is designed in accordance with approved Agency procedures. Additional information is available on the Internet: <http://www.epa.gov/icr/players.html>

**Data Quality Review:** EPA reviews the data to ascertain their reliability and resolves any discrepancies.

**Data Limitations:** Random digit dialing methodology is used to ensure that a representative sample of households has been contacted; however, the survey is subject to inherent limitations of voluntary telephone surveys of representative samples. Limitations of phone surveys include: 1) inconsistency of interviewers following survey directions. For example, an interviewer might ask the questions incorrectly or inadvertently lead the interviewee to a response; or 2) call at an inconvenient time. For example, the respondent might not want to be interrupted at the time of the call and may resent the intrusion of the phone call. The answers will reflect this attitude.

This survey will be used to gain information regarding the number of individuals with asthma that have taken steps to improve the quality of their indoor environment as part of their approach to managing the disease, as well as any barriers they may have encountered while attempting to do so.

**Error Estimate:** For each sample subset, the Agency expects to achieve results within three percentage points of the true value at the 90 percent confidence level. EPA feels that these precision rates will be more than adequate to characterize the extent to which the results measured by the survey are true characteristics of our nation's asthmatic population.

**New/Improved Data or Systems :** None

**References:** There is no website specifically relating to the survey. Inquiries may be made directly to the EPA Office of Indoor Environments. However, asthma information can be obtained at <http://www.epa.gov/iaq/asthma/index.html>

**FY 2004 Supporting Performance Measure:** Children under 6 not Exposed to Environmental Tobacco Smoke (ETS) in the Home

**Performance Database:** National telephone survey (National Survey on Environmental Management of Asthma) of a representative sample of 87,652 homes, expected to produce responses from 52,591 households, who will respond to a question about whether they allow smoking in their home, and if so, whether young children are in the household.

**Data Source:** EPA is the data source. The ETS survey, which has received Office of Management and Budget clearance, seeks information about how many people permit smoking in their home. The information is obtained during the screening phase of the larger asthma survey.

**Methods, Assumptions and Suitability:** EPA has designed the asthma survey questionnaire in which the respondents are asked to provide primarily yes/no responses. By using yes/no and multiple choice questions, the Agency has substantially reduced the amount of time necessary for the respondent to complete the survey and has ensured consistency in data response and interpretation.

The survey instrument was developed in consultation with staff from EPA's IED, EPA's Regional offices, and the National Center for Health Statistics (NCHS) to ensure that respondents will understand the questions asked and will provide the type of data necessary to measure the Agency's objectives.

EPA estimates that of the 87,652 households which make up the sampling frame, 60 percent, or 52,591, will be contacted successfully and will agree to participate in the screening survey. ETS information will be obtained from these 52,591 individuals. The sample will be large enough to yield the number of responses necessary to achieve a two percent precision rate at the 95 percent confidence

**QA/QC Procedures:** Survey is designed in accordance with approved Agency procedures. Additional information is available on the Internet: <http://www.epa.gov/icr/players.html>

**Data Quality Review:** EPA reviews the data to ascertain their reliability and resolves any discrepancies.

**Data Limitations:** Random digit dialing methodology is used to ensure that a representative sample of households has been contacted; however, survey is subject to inherent limitations of voluntary telephone surveys of representative samples. Limitations of phone surveys include: 1) inconsistency of interviewers following survey directions. For example, an interviewer might ask the questions incorrectly or inadvertently lead the interviewee to a response; 2) calling at an inconvenient time. For example, the respondent might not want to be interrupted at the time of the call and may resent the intrusion of the phone call. The answers will reflect this attitude.

**Error Estimate:** EPA's survey has been designed to ensure that, at the 95 percent confidence level, its estimate of the number of children under 6 not exposed to ETS in the house is within two percentage points of the true value. EPA is confident that these precision rates are more than adequate.

**New/Improved Data or Systems:** None

**References:** There is no website specifically relating to the survey. However, Environmental Tobacco Smoke (ETS) information can be obtained at <http://www.epa.gov/iaq/ets> . The public would need to contact OAR directly.

**Performance Database:** Survey of representative sample of schools using a comprehensive database of private and public schools. The survey will help determine the number of schools adopting and implementing good indoor air quality (IAQ) practices consistent with EPA's Tools for Schools (TfS) guidance. The survey is being finalized and results are expected in 2003.

**Data Source:** EPA-developed questionnaire. Other supporting data from the United States Department of Education National Center for Education Statistics.

**Methods, Assumptions and Suitability:** The design of the IAQ Practices in Schools Survey is a random sample with stratification by geography and school type. Such stratification is expected to decrease the variances of sample estimates and, because of interest in these specific strata, add strength to the survey design. Additional data from other sources, such as the United States Department of Education National Center for Education Statistics, will facilitate analysis and interpretation of survey results.

**QA/QC Procedures:** Survey is designed in accordance with approved Agency procedures. Additional information is available on the Internet: <http://www.epa.gov/icr/players.html>

**Data Quality Review:** EPA reviews data for completeness and quality of responses.

**Data Limitations:** Subject to inherent limitations of survey sampling.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** Prior to the survey, EPA simply tracked the number of schools receiving the TfS guidance and estimated the population of the school to determine the number of students/staff experiencing improved indoor air quality. With this survey, EPA is querying a statistically representative sample of schools, to estimate the number of schools that have actually adopted and implemented good IAQ management practices consistent with the TfS guidance.

**References:** See the United States Department of Education National Center for Education Statistics, <http://nces.ed.gov/>. See also Indoor Air Quality Tools for Schools Kit (402-K-95-001) at <http://www.epa.gov/iaq/schools>. There is no website specifically relating to the survey. Inquiries may be made directly to the EPA Office of Indoor Environments.

### **Coordination with Other Agencies**

EPA serves a unique role in programs related to safety, consumer products, and schools because of its experience and track record in raising public awareness of actual and potential indoor air health risks, in addition to past work on indoor air quality issues associated with consumer products, and its expertise in the areas of indoor air quality in schools. EPA also plays a lead role in the Task Force for Environmental Asthma Issues.

EPA works with Federal, state, Tribal, and local government agencies, industry, non-profit organizations, individuals as well as other nations to promote more effective approaches to identifying and solving indoor air quality problems. EPA works with the:

- Department of Health and Human Services (HHS) to develop and conduct programs aimed at reducing children's exposure to known indoor triggers of asthma, including ETS;
- Department of Housing and Urban Development (HUD) on home safety issues, especially those affecting children;
- Consumer Product Safety Commission (CPSC) to identify and mitigate the health hazards of consumer products designed for indoor use;
- Department of Education (DoEd) to encourage construction of schools with good indoor air quality; and
- Department of Agriculture (USDA) to encourage USDA Extension Agents to conduct local projects designed to reduce risks from indoor air quality.

As Co-chair of the interagency Committee on Indoor Air Quality (CIAQ), EPA works with the CPSC, the Department of Energy, the National Institute for Occupational Safety and Health, and the Occupational Safety and Health Administration to review EPA draft publications, arrange the distribution of EPA publications and coordinate the efforts of Federal agencies with those of state and local agencies concerned with indoor air issues.

## **Statutory Authorities**

Radon Gas and Indoor Air Quality Research Act of Title IV of the Superfund Amendments and Re-authorization Act (SARA) of 1986

Toxic Substances Control Act (TSCA), section 6, Titles II, and Title III (15 U.S.C. 2605 and 2641-2671)

Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)

Clean Air Act (CAA)

Safe Drinking Water Act (SDWA)

## Environmental Protection Agency

### FY 2004 Annual Performance Plan and Congressional Justification

#### Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems

**Objective:** Facilitate Prevention, Reduction and Recycling of PBTs and Toxic Chemicals

By 2005, facilitate the prevention, reduction, and recycling of toxic chemicals and municipal solid wastes, including PBTs. In particular, reduce by 20 percent the actual (from 1992 levels) and by 30 percent the production-adjusted (from 1998 levels) quantity of Toxic Release Inventory (TRI)-reported toxic pollutants which are released, disposed of, treated, or combusted for energy recovery, half through source reduction.

#### Resource Summary (Dollars in Thousands)

	<b>FY 2002 Actuals</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
<b>Facilitate Prevention, Reduction and Recycling of PBTs and Toxic Chemicals</b>	<b>\$48,461.0</b>	<b>\$46,115.9</b>	<b>\$49,958.2</b>	<b>\$3,842.3</b>
Environmental Program & Management	\$38,628.1	\$36,122.0	\$39,950.6	\$3,828.6
State and Tribal Assistance Grants	\$9,832.9	\$9,993.9	\$10,007.6	\$13.7
Total Workyears	180.5	196.0	194.5	-1.5

#### Key Program (Dollars in Thousands)

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
ATSDR Superfund Support	\$654.3	\$0.0	\$0.0	\$0.0
Congressionally Mandated Projects	\$1,700.0	\$0.0	\$0.0	\$0.0
Design for the Environment	\$4,707.6	\$4,810.7	\$4,880.6	\$69.9
Facilities Infrastructure and Operations	\$2,726.4	\$2,779.1	\$2,936.7	\$157.6



	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Legal Services	\$70.2	\$197.8	\$203.5	\$5.7
Management Services and Stewardship	\$478.1	\$493.4	\$442.5	(\$50.9)
New Chemical Review	\$1,611.6	\$1,606.4	\$1,591.2	(\$15.2)
PBTI	\$2,572.5	\$2,580.5	\$2,419.0	(\$161.5)
Pollution Prevention Incentive Grants to States	\$5,986.3	\$5,986.3	\$6,000.0	\$13.7
Pollution Prevention Program	\$9,597.8	\$9,902.8	\$10,626.9	\$724.1
RCRA State Grants	\$4,007.6	\$4,007.6	\$4,007.6	\$0.0
RCRA Waste Reduction	\$14,633.7	\$13,740.7	\$16,850.2	\$3,109.5
Regional Management	\$9.3	\$10.6	\$0.0	(\$10.6)

### **FY 2004 Request**

Pollution prevention (P2) is designed to avoid creation of pollutants at the sources, in contrast to risk management and remediation, which are designed to control pollutants that have already been introduced. Under the Pollution Prevention Act of 1990 and its directive that “pollution should be prevented or reduced at the source whenever feasible,”<sup>38</sup> P2 and source reduction became the Agency’s preferred approaches to environmental protection. Compared to approaches that control, treat, or clean up pollution, P2 can sometimes be more effective in reducing potential health and environmental risks to the extent that it may:

- Reduce releases to the environment;
- Reduce the need to manage pollutants;
- Avoid shifting pollutants from one media (air, water, land) to another; and
- Protect natural resources for future generations by cutting waste and conserving materials.

Preventing pollution can be cost-effective to industry in cases where it reduces excess raw materials and energy use. P2 can also reduce the need for expensive “end-of-pipe treatment” and disposal, and support quality improvement incentives in place at facilities.<sup>39</sup> Current EPA strategies include institutionalizing preventive approaches in EPA’s regulatory, operating, and compliance/enforcement programs and facilitating the adoption of pollution prevention techniques by states, tribes, the academic community and industry. EPA uses market incentives,

<sup>38</sup> 40 CFR part 710, as amended by 68 FR 848, January 7, 2003

<sup>39</sup> Pollution Prevention Act of 1990, Section 13103, Findings

environmental management tools and new technologies to promote wider adoption of P2 measures.

In FY 2004, EPA is proposing an integrated and coordinated cross-agency proposal designed to address the serious issue of children's environmental health in schools. The initiative includes a cross-media component that will provide comprehensive, easily accessible information and guidance to schools on how to reduce potentially harmful exposures to pollutants in schools. It also includes components designed to: 1) improve indoor air and reduce asthma attacks in schools, 2) implement integrated pest management programs in schools, and 3) reduce exposure to lead and mercury in schools.

Even though more work remains, much progress has been made in carrying out these strategies. Perhaps the fastest growing opportunities lie in private sector partnerships, which enable EPA's knowledge of P2 principles and techniques to be combined with industry-specific expertise in production and process design. Another opportunity for building P2 practices into industrial operations lies in partnerships with the academic community. By developing and providing educational tools for universities to train the next generation of engineers, we plant the seeds needed to replicate P2 practices throughout industry.

### **FY 2004 Key Program Activities**

In FY 2004, EPA will work to achieve the pollution prevention objective by pursuing a coordinated set of activities, tailoring programs and projects to the concerns and interests for each arena. Every type of organization and each individual consumer have a part to play in preventing pollution. P2 approaches can be flexibly applied to most endeavors. The Agency will promote effective pollution prevention through the following programs and activities:

#### **Pollution Prevention Program**

*(a) Suppliers Partnership for the Environment.* Businesses can sometimes reduce costs significantly by implementing effective P2 programs. However, there are times when the savings are not readily apparent because of the structure of the company's internal accounting system. The Agency will play a role in encouraging businesses to modify their management accounting systems to fully and explicitly account for environmental costs. These strategies are designed to improve the current business management framework in ways that will enable companies to more easily choose prevention practices. The Agency will develop Suppliers Partnership for the Environment to provide corporations with a fully developed, self-sustaining module for the delivery of environmental technical assistance and pollution prevention tools, such as the Persistent Bioaccumulative and Toxic (PBT) program. Emphasis in FY 2004 will highlight voluntary efforts with selected industrial sectors to green their supply chains. These partnerships will be fully implemented in FY 2004.

*(b) Government Actions.* The Agency is invested in sharing information and supporting State programs on Pollution Prevention. During FY 2004, State Program Support will include management of the Pollution Prevention Grants and P2 Results as well as support of the National Pollution Prevention Roundtable. In the area of Information Sharing, EPA will continue

funding the Pollution Prevention Information Clearinghouse and management of the highly successful Pollution Prevention Resource Exchange.

(c) *Safer Products.* EPA has the lead in implementing the Pollution Prevention Act (PPA) and in carrying out Executive Order 13101 and its predecessor, Executive Order 12873, section 503. The PPA requires EPA to “identify opportunities to use Federal procurement to encourage source reduction.”<sup>40</sup> These orders require the Federal government to use its purchasing power - about \$230 billion in goods and services each year - to create a demand for products and services that have a reduced impact on the environment (i.e., environmentally preferable products, or EPPs). The Agency finalized guidance in 1999 to help executive agencies identify and purchase environmentally preferable products and services.<sup>41</sup> In FY 2004, EPA will expand demonstration projects to include several priority product categories. It will also continue its partnership with the National Park Service (NPS) and provide assistance and technical information to Federal agency purchasers on greening purchases of cleaning products, food serveware, conference and meeting services, and electronics.

Looking at the demand side of the equation, the Buy Clean program applies Environmentally Preferable Purchasing principles to indoor environmental quality, with an emphasis on its potential to reduce risk to schoolchildren from exposure to indoor air pollutants. In FY 2004, EPA will finalize and distribute the case studies from the pilot Buy Clean projects and recognize the accomplishments of the schools that participated in the pilot.

EPA will continue with its efforts to provide information that consumers can use to make environmentally friendly choices. Using the principles established by the Consumer Labeling Initiative (CLI), EPA will continue to promote proper labeling. Proper labeling is especially important for products that are used by or around children, so that parents can evaluate potential risks to children from possible exposure to toxic chemicals. During FY 2004, the CLI program will work specifically with Federal and local governments, States, and community organizations to broaden its public outreach on *Reading the Label – First*, encouraging consumers to read the product label prior to purchase and use.

(d) *PBT Program.* The Agency is concerned about persistent, bioaccumulative, and toxic (PBT) substances, such as mercury, dioxins/furans, and PCBs, because these pollutants persist in the environment and can build up to high concentrations in human and animal tissue. Some PBTs can cause developmental and neurological defects in fetuses and young children and some are also suspected endocrine disruptors.<sup>42</sup>

## **Pollution Prevention (P2) Grants Program**

The States are the primary sources for businesses and communities seeking assistance in identifying and applying prevention approaches. EPA has provided seed money to help states promote innovation and develop state capacity. The P2 grants foster the development of new P2

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<sup>40</sup> Pollution Prevention Act of 1990, Section 13103, EPA Activities, (b) Functions

<sup>41</sup> Federal Register, Friday, Aug. 20, 1999. Part VII, EPA Vol. 64, No. 161. Final Guidance on Environmentally Preferable Purchasing for Executive Agencies, Notice

<sup>42</sup> EPA web page - Frequently Asked Questions- How do PBTs harm us and the environment?

<http://www.epa.gov/pbt/faq/htm#1>

# PBT Program Connections



approaches by providing funds to states in the areas of technical assistance and training, education and outreach, regulatory integration, demonstration projects, legislative activities and awards programs. Another key program for states, the Pollution Prevention Resource Exchange, helps to support technical assistance organizations by coordinating the development and dissemination of up-to-date information on P2 approaches.

## Persistent, Bioaccumulative, Toxic Chemicals

To address continuing issues associated with PBTs, EPA launched a cross-office, cross-media PBT program in FY 1999. Through this effort, the Agency seeks to prevent, minimize and, when possible, eliminate PBTs, which are harmful to both human health and the environment. The initiative's cross-media approach is designed to stop the transfer of PBT pollutants across media using all of EPA's tools: regulatory, compliance assistance, enforcement, research, voluntary actions, prevention, and international negotiations. The PBT program fosters cross-agency collaboration on activities related to priority PBTs by building on actions by individual national program offices and regions, and by providing resources for priority PBT activities that further this agency wide effort. In FY 2002, EPA released Alkyl-lead, the first of several National Action Plans.<sup>43</sup> In FY 2004, primary attention will be focused on mercury and dioxins/furans. While all twelve National Action Plans are being developed, the Agency continues to look for opportunities to seek reductions in these priority PBT chemicals.

A good reduction opportunity has been found in the Hospitals for a Healthy Environment (H2E) program, which is a collaborative effort among EPA, the American Hospital Association, Health Care Without Harm, and the American Nurses Association. As voluntary H2E

<sup>43</sup> Federal Register, July 23, 2002, Vol. 67, Number 141, Page 48177-48178 - Final National Action Plan for Alkyl-lead; Notice of Availability. EPA web site: <http://www.epa.gov.pbt/alkyl.htm>

participants, hospitals and health care facilities pledge to eliminate mercury use by FY 2005 and to reduce total hospital waste by 50 percent by 2010. In FY 2004, H2E will continue to enroll partners, and we expect that as many as one-third of the nation's 6,000 hospitals will pledge to the program. With the FY 2005 goal fast approaching, H2E will be working hard in FY 2004 to report measurable results from the program.

In FY 2004, the Agency will publish its Mercury National Action Plan with long-term goals for EPA's future mercury activities, and will continue the Agency's ongoing mercury activities aimed at reducing releases, reducing exposure, reducing use in products and processes, and ensuring safe management of wastes and supplies. For all priority PBTs, critical measurement and monitoring efforts will be in their third year, facilities will be collecting PBT chemical release data under the new TRI rule and submissions under TSCA for approval of new PBT chemicals for entry into commerce will be under close scrutiny. New activities for FY 2004 will include:

- Implementing a cross-agency routine PBT monitoring strategy.
- Continuing efforts on Mercury and PCBs and actively implementing the strategy/action plan for dioxin and furan.
- Seeking continued improvement in PBT risk communication through an agency wide consolidated PBT website (created in 2003).
- Reviewing the results from major measurement, monitoring and data collection efforts.
- Infusing into sector partnerships the products of Regional/State PBT-funded activities.

### **Design for the Environment and Other Programs**

One of the Agency's key P2 industry sector-based programs focuses on fostering cleaner technologies and the reduction of potential risks to health and the environment through the adoption of safer chemicals and workplace practices. EPA's Design for the Environment (DfE) Program works in partnership with industry sectors to develop comparative risk, performance, and cost information about alternative technologies, chemicals, and processes to better aid industry in making environmentally informed decisions. Through this program, EPA has entered into long-term partnerships with more than 15 industries, including printing and graphics; textile and garment care; electronics and computers; automotive manufacturing, repair, and refinishing; industrial and institutional laundries; foam furniture manufacturing; paints and coatings; and others. The Agency is developing a program to bring its chemical expertise into the marina sector, and plans to give marinas and boat owners the information and tools needed to make environmentally informed decisions.

DfE partnerships have begun to see changes in either the use of chemicals or workplace practices in industrial and institutional laundry product formulations, dry-cleaning and garment care, automotive refinishing practices, printing processes, and in the electronics industry.

DfE has completed comparative assessments on over 800 chemicals and continues to evaluate additional chemicals each year.<sup>44</sup> The switch to alternative cleaner, safer chemistries and/or the adoption of P2 practices in the workplace can result in the reduction of the use of hazardous chemicals.<sup>45</sup> These use reductions will translate into lower quantities of hazardous chemicals released, disposed of, treated, or combusted for energy recovery; contributing to the overall objective of achieving a 20 percent reduction in such quantities.

DfE's partners in the flexographic ink, electronics, and automotive refinishing industries completed the multi-year technical portion of the partnership project but outreach activities continue. DfE is also investigating the feasibility of technology transfer of DfE "lessons-learned" to additional industries. For example, EPA will work with other industries that employ spray application practices and use chemicals similar to those found in the collision repair industry, such as the foam manufacturing industry. DfE will continue its outreach activities with regional, state, and local assistance providers by conducting workshops on how to effect continuous improvement in collision repair shops, using the DfE Best Practices Outreach Kit.

The DfE electronics industry partnership will continue to focus on life cycle impacts of lead solder and its alternatives. The ongoing partnership with the electronics industry, which faces rapid and continuous change and the expansion to new areas of investigation, is valued by both DfE and the partners. In the marina industry, the focus will be on developing tools and chemical information to help marina operators and boat owners make environmentally preferable choices. The DfE formulator initiative will continue to reach new industries in FY 2004, including cleaning and related products, fragrances, solvents, and other markets. DfE has developed partnerships with industry and regional groups to implement its expanded goals. DfE is placing greater emphasis on working with the Regional and State P2 Programs to incorporate DfE strategies and goals into regional-based projects. The DfE Program will maintain a leadership role but will serve more as a technical and communications guide to regional and state partners. DfE will look to the Regional and State P2 programs to identify critical areas of concern and opportunities for integrating DfE concepts. The DfE Program will promote the use of its approaches including substitutes assessment, life-cycle analysis, best management practices, and environmental management systems and continue to foster stronger Regional ties through collaborative projects with EPA regional offices.

### **Resource Conservation and Recovery Program**

Pollution prevention and safe recycling are two of the nation's most effective tools for environmental protection. Well implemented, systematic source reduction and recycling programs solve waste management problems at their source, lowering pressure on the environment and reducing energy use at a number of critical points: production of raw materials, subsequent processing into finished products, and eventual transport and disposal at a waste management facility. At the same time, the best programs save business, industry, government, and citizens' money.

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<sup>44</sup> U.S. EPA, Office of Pollution Prevention and Toxics, Design for Environment, [www.epa.gov/dfe](http://www.epa.gov/dfe)

<sup>45</sup> U.S. EPA, Office of Pollution Prevention and Toxics, Design for Environment, [www.epa.gov/dfe](http://www.epa.gov/dfe)

The Resource Conservation and Recovery Act (RCRA) directs EPA to promote a reduction in the amount of waste generated and to improve recovery and conservation of materials through recycling. The RCRA program emphasizes a national policy focusing on a hierarchy of waste management options that advocates source reduction, reuse and recycling over treatment and disposal. In the 1990 Pollution Prevention Act, Congress codified this hierarchy of waste management options, reaffirming the need for source reduction and recycling programs for both hazardous and municipal solid wastes.

The waste reduction activities in this objective include:

- Fostering partnerships with states;
- working with tribes and local communities;
- carrying out plans to reduce toxic chemicals in industrial hazardous waste streams; and
- defining techniques to reduce the generation of municipal, hazardous and other solid waste through pollution prevention and developing methods to increase hazardous, municipal, and non-hazardous industrial solid waste recycling.

EPA launched the Resource Conservation Challenge (RCC) as a major national effort to find flexible, yet more protective ways to conserve our valuable natural resources through waste reduction and energy recovery. The RCC puts Resource Conservation and Recovery back into RCRA by conserving our resources and saving and recovering energy through waste reduction and waste minimization. To make that happen, EPA is challenging everyone to take personal responsibility for their day-to-day actions, and to do at least one thing daily that conserves our natural resources.

In FY 2004, EPA will implement aspects of the Challenge through the National Waste Minimization Partnership program to reduce hazardous wastes containing priority chemicals. EPA will sponsor industry workshops, encourage increased technical assistance and information sharing, and publicly recognize industry leaders. Regional and state staffs will encourage partners and aid in identifying waste minimization goals and avenues for achieving them cost-effectively. We expect to expand our work from our five industrial pilot facilities to other key industrial sectors such as facilities generating lead and cadmium containing hazardous wastes. EPA will also encourage the piloting of chemical management systems which create a positive economic incentive for chemical suppliers to partner in finding ways to reduce chemical use.

As part of the Agency's effort to remove regulatory barriers to safe hazardous waste and materials recycling and to promote ways to improve and encourage recycling, EPA will continue to respond to court decisions concerning its jurisdiction over recycling secondary materials.

In FY 2004, the Agency will place an emphasis on efforts that minimize the use of hazardous constituents and maximize the recovery of hazardous materials. EPA will examine where it can implement regulatory innovations, including appropriate rules, guidance, and other outreach materials, to increase the safe recycling of hazardous wastes. We will focus on specific industry sectors, like metal finishing, petroleum, and academic research laboratories. For

example, we will work with academic laboratories to tailor RCRA regulations to achieve maximum efficiency while continuing the high level of human health and environmental protection. This effort is designed to reduce the use of constituents and chemicals of concern and educate high school and university students on safe handling methods. The goal is to promote environmental stewardship within academia so that, once the students graduate, they can integrate environmental values into their workplace and lives. EPA also plans to promulgate regulations excluding cathode ray tubes from hazardous waste regulation and complete the proposal covering metal finishing processes.

EPA will work to address issues raised in comments on the proposal to reform regulations applicable to the Definition of Solid Waste. Depending on the number of issues, their complexity, and the need for additional study, the Agency should be able to make significant progress in FY 2004 on finalizing the regulations. In addition, we will continue to collaborate with regions and states to clarify or revise existing policy and guidance related to hazardous waste recycling.

In FY 2004, the Agency will experiment with projects that test alternative regulatory requirements. For example, EPA will be reviewing and developing alternatives for the current generator regulations, identifying opportunities to streamline the regulations to reduce burden on generators and promote safe hazardous waste recycling. To encourage energy conservation, EPA plans to develop partnerships with the automotive and fuel industries to address any RCRA barriers to emerging technologies, such as fuel cells.

EPA also will focus efforts on promoting environmentally sound management and recovery of wastes and materials that are in international commerce.

One of EPA's goals in the area of municipal solid waste (MSW) is to increase the portion of MSW recycled nationally to 35% by 2005. MSW includes waste generated from residences, commercial establishments, institutions, and industrial non-process operations. This challenging goal was set with a clear vision that achieving 35% recycling would require a response by almost every segment of society (manufacturers, other businesses, all levels of governments, and all 280 million Americans), since all generate MSW and have opportunity to increase the portion recycled.

The growth of recycling today has slowed from the pace of the early 1990s, making attainment of the 35% rate by 2005 more difficult than originally foreseen. Clearly, recycling is not in a downturn; however, it is growing at a slower rate, despite the efforts of EPA and recycling program implementers across society. Several factors contribute to this trend including: reaching audiences where recycling is more difficult (e.g., high rise apartments, office and business settings, and public facilities) and changes in the waste stream (e.g., rapid turnover of new electronics products, increased packaging from e-commerce, new beverage containers, etc.)

While EPA alone cannot attain the national goal, in FY 2004 the Agency will work with others to address these challenges using a broad range of methods and tools including:



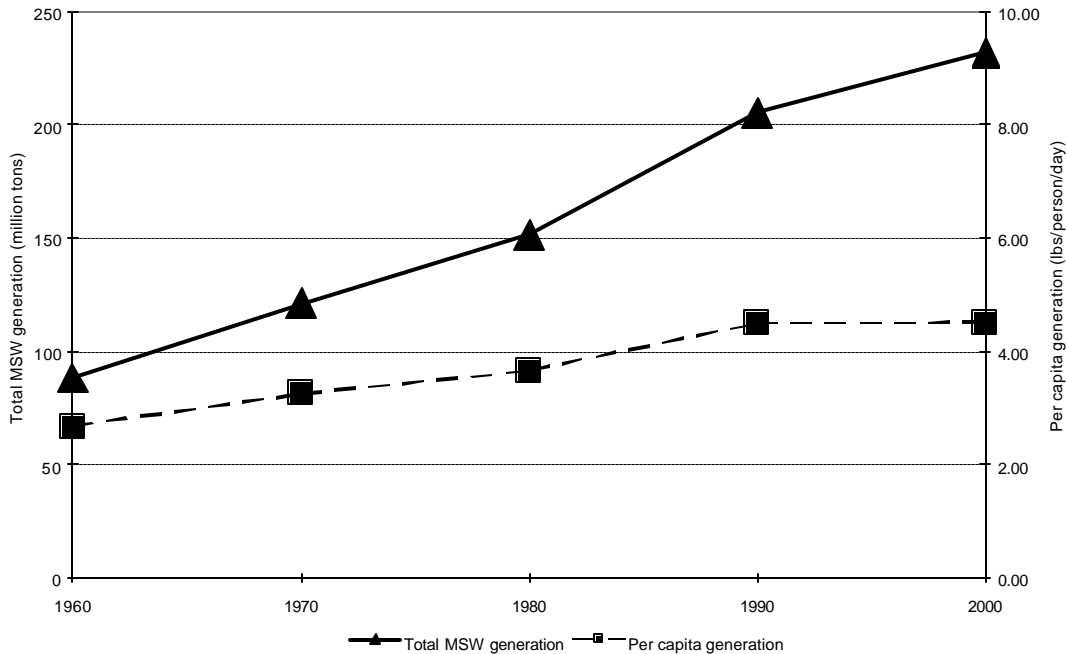
- Establishing and expanding many partnerships with industries, states and other entities to reduce waste. These partnerships will produce smarter and faster results, which ultimately will create a cleaner environment.
- Working with major retailers, electronic manufacturers and the amusement and motion picture industries to revitalize, create, and display waste prevention and recycling messages, especially messages related to used computers and other electronics recycling.
- Spreading the conservation and recycling message to consumers, youth and under-served communities, via movie and video trailers; on posters targeted to schoolchildren; on in-store display advertisements; and in print and broadcast public service announcements. These efforts aim to educate and encourage everyone to make smarter environmental decisions.
- Designing activities and communication tools that encourage students and teachers to start innovative recycling programs and make smart environmental decisions.
- Developing tools and projects to promote waste reduction, recycling, and neighborhood revitalization in Hispanic and African-American communities, and on Native American lands.

Waste reduction has clear benefits in combating the ever-growing stream of municipal solid waste (MSW) and is also an integral part of the Resource Conservation Challenge. Annual generation of MSW grew steadily from 88 million to 232 million tons between 1960 and 2000. EPA's municipal solid waste program provides national leadership, technical assistance and outreach for businesses, industry, and municipalities implementing source reduction and recycling systems in their plants, facilities and communities. This also includes states and tribes whose laws provide the structure for these activities. The program implements a coordinated set of strategies to manage waste, including source reduction (also called waste prevention), recycling (including composting), combustion, and landfilling. Preference is given to strategies that maximize the diversion of waste from disposal facilities, with source reduction (including reuse) as the highest priority. In addition, the Challenge asks businesses, manufacturers, and consumers to adopt a resource conservation ethic; to operate more efficiently; to purchase more wisely; and to make and use products that are easy to recycle and are composed of recycled materials. The Challenge also provides new and convenient opportunities for consumers to reduce, reuse and recycle waste.

Early successes under the RCC, which will continue into FY 2004, include:

- Joining with 8 major partners from the manufacturing, retail and recycling communities, in launching the "Plug Into Recycling" education campaign;
- Working with partner on nationwide public service announcements on recycling; and completing major steps in encouraging "green buildings" and reducing construction and demolition debris.

Figure ES-1: MSW Generation Rates from 1960 to 2000



While challenging American businesses and consumers to realize the impact of their actions on the environment, EPA continues to expand successful, existing programs such as WasteWise and Jobs Through Recycling. Using new approaches to waste management, EPA aims to reduce more waste, to increase recycling and the use of recycled products, and to recover more energy from waste, while still protecting human health and the environment.

EPA continues to reap the benefits of well-established programs, such as WasteWise. Developed in FY 1994 as a voluntary partnership program to help businesses, governments, and institutions reduce and recycle municipal solid waste, the program now has more than 1,200 partners in more than 50 industrial sectors, including many Fortune 500 companies. Through FY 2001, WasteWise partners have reduced over 35 million tons of waste through waste prevention and recycling efforts. EPA also estimates that their partners' efforts since the program's inception have prevented the emission of nearly 30 million tons of carbon equivalent, similar to removing more than 20 million cars from the road for one year. To help partners reach waste reduction goals, EPA is providing a variety of technical assistance tools, including a hotline, newsletters and bulletins, and on-line resources. In FY 2002, six tribes were presented with WasteWise awards to recognize their outstanding efforts in implementing solid waste projects and education programs on their reservations.

WasteWise continues to facilitate progress within the Federal sector and now has 75 Federal organizations as partners. In 2002 WasteWise initiated a campaign to promote large volume waste reductions that included electric utilities, pulp and paper, and automotive sector companies. The initial emphasis of the campaign was on beneficial use of coal ash from utilities. EPA worked with key industry, government and non-governmental organizations to develop technical assistance materials to promote the use of Resource Management as a holistic tool for

waste management and reduction. EPA is continuing its efforts to develop a product stewardship agreement with the electronics industry and is also working with the carpet industry to continue implementation of an agreement reached in FY 2001.

EPA is also engaged in a number of efforts to facilitate greater infrastructure and market development for collecting, reusing, and recycling computers and other electronic components, as well as the design of more environmentally friendly products. EPA is working with electronics manufacturers, recyclers, retailers, state and local governments, and non-governmental organizations, as part of the National Electronics Product Stewardship Initiative (NEPSI), to create a national financing system, culminating in a voluntary national agreement for managing used electronics. EPA is also working to create information on the management of end-of-life electronics to optimize resource recovery and minimize risks during recycling.

Early in FY 2002, the carpet industry's trade association and major manufacturers, along with a variety of state and regional governments, signed a breakthrough Memorandum of Understanding (MOU) establishing a goal of diverting 40 percent of used carpets from landfills by 2012 (compared to current levels of under 5 percent). EPA will continue to work with the carpet manufacturers in FY 2004 to support the development of recycling infrastructure and provide for market development as well as opportunities for the government procurement agencies to purchase recycled content.

EPA will work closely with the network of state and Tribal recycling and economic development officials created through our Jobs Through Recycling (JTR) program. This program has already provided significant assistance to entrepreneurs creating or expanding recycling businesses throughout the country. During FY 2004, the JTR program will continue to help quantify and communicate the employment and financial impacts of recycling businesses.

### **Children's Health**

An integrated Environmental Management System (EMS) approach allows schools to efficiently manage their limited resources so that they can target the most pressing environmental issues. In FY 2004, the Agency will assemble existing guidance, identify gaps and develop additional guidance as needed to assist school districts and individual schools in implementing Environmental Management Systems. At the local level, a pilot project approach will demonstrate the effectiveness of the integration. The EMS will incorporate the best practices for handling, storing, recycling or disposing of excess, outdated, or hazardous chemicals, pesticides, and materials; building energy and air quality; design and rehabilitation; children's health; and how to involve administrators, teachers, and students in a continuing program.

### **Green Chemistry and Green Engineering**

The Pollution Prevention Act not only established a national policy to prevent or reduce pollution at its source, it also provided an opportunity to expand beyond traditional EPA programs and devise creative new strategies to protect human health and the environment.<sup>46</sup> Green chemistry--the design of chemical products and processes that eliminate or reduce the use

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<sup>46</sup> Pollution Prevention Act of 1990, Section 13103, EPA Activities, (b) Functions

or generation of hazardous substances--is a highly effective approach to pollution prevention because it applies innovative and cost-effective scientific solutions to real-world environmental problems, all through voluntary partnerships. Green Engineering focuses more closely on outreach to practicing and future engineers and their approach to the design and redesign of new and existing industrial processes.

The goal of the Green Chemistry Program is to promote the research, development, and implementation of innovative chemical technologies that eliminate or reduce hazardous substances during the design, manufacture, and use of chemical products and processes. More specifically, the Green Chemistry Program supports fundamental research in the area of environmentally benign chemistry as well as a variety of educational activities, international activities, conferences and meetings, and tool development. Green Chemistry partners include industry, trade organizations, academia, scientific societies, and other state and Federal government organizations.

#### **Eliminating 150 Million Pounds of Pollutants**

By the end of FY 2004, EPA expects that over 150 million pounds of hazardous chemicals and solvents will have been eliminated through the Green Chemistry Challenge Award Program. Initiated in 1996, the Presidential Green Chemistry Challenge Award program has achieved significant pollution prevention by reducing the quantity of hazardous chemicals and solvents in the environment through the adoption of safer technologies and chemicals. Thus far, cumulative pounds of hazardous chemicals and solvents eliminated are 152 million pounds; cumulative gallons of hazardous chemicals and solvents eliminated are 4.7 million gallons. As such, EPA's FY 2004 projections have already been exceeded. At these rates, potential eliminations in the future are 1.6 billion pounds per year and 650 million gallons per year. Substances eliminated include chlorofluorocarbons (CFCs), volatile organic solvents (VOCs), persistent, toxic, and bioaccumulative chemicals and solvents, as well as very corrosive and toxic chemical substances. The program is also positively impacting water and energy uses and carbon dioxide emissions.

The Green Chemistry Challenge Program continues to be effective at catalyzing the behavioral change necessary to drive the research, development, and implementation of green chemistry technologies. In addition, this program also continues to provide an opportunity to quantitatively demonstrate the technical, environmental, and economic benefits that green chemistry technologies offer.

In recent years, the program has made significant progress in several areas such as the following:

- Broad, competitive, non-target research efforts,
- Education activities,
- Recognition efforts, and
- International initiatives.

Through FY 2005, the Green Chemistry Program will also be focusing its education, outreach, awards, and research efforts to target audiences not currently involved in green chemistry product and process design and specific high priority chemicals, products, and/or processes for which safer alternatives are not available. For example, the Program will be

entering a multi-year partnership with the United Negro College Fund Special Programs to explore opportunities for incorporating green chemistry into the chemistry curricula of historically African-American colleges. In addition, the Program will investigate inherently safer chemical alternatives to high volume chemical processes in an effort to reduce our nation's chemical vulnerabilities.

Another approach to eliminating pollution before it occurs is the Green Engineering program. The goals of the Green Engineering program are twofold:

- To incorporate “green” or environmentally-conscious thinking and approaches into the academic and industrial communities regarding the design, commercialization and use of processes and products, and
- To promote and foster development and commercialization of Green Engineering approaches and technologies.

The focus of the Green Engineering Program in the past few years has been on the academic community. To accomplish its goals, the Green Engineering Program first developed modules and a standardized textbook, published in 2001 and titled “Green Engineering: Environmentally Conscious Design of Chemical Processes and Products,”<sup>47</sup> which can be used by universities for Green Engineering courses to provide starting references for practicing engineers. Over the past few years, the Green Engineering Program has also worked with the universities and the American Society of Engineering Education's Chemical Engineering Division to develop “Green Engineering champions” and to incorporate Green Engineering into Chemical Engineering curricula. The aim is to develop future chemical engineers with Green Engineering training.

In FY 2004, the focus of the Green Engineering Program will broaden to include practicing engineers in addition to the academic community. The Green Engineering program will be working with the American Institute of Chemical Engineers and others to convert Green Engineering textbook and materials into industrial format and to develop training for practicing engineers. The Green Engineering program will also be working with other groups (with industry participation) to incorporate Green Engineering into their activities. In addition, there has been interest from non-chemical engineering disciplines to incorporate Green Engineering principles into other engineering curricula.

The pollution prevention approaches discussed above are intended to provide assistance and incentives to various sectors of society to promote new habits and new ways of doing business that are sustainable, cost-effective and beneficial to the environment. These activities can promote greater ecological efficiency and therefore help to reduce the generation and release of production-related waste.

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<sup>47</sup> U.S. EPA, Office of Pollution Prevention and Toxics, Design for Environment, [www.epa.gov/dfe](http://www.epa.gov/dfe)

**FY 2004 Change from FY 2003 Request**

EPM

- (+724,100, +1.2 FTE) This increase will support the Children’s Health Initiative to reduce childhood exposure to hazardous chemicals.
- (+\$3,109,500) A redirection of \$2,700.0 from Goal 5, Objective 2, will support increases for energy recovery, recycling, waste minimization and retail efforts. Redirection reflects completion of program guidance documents, cost savings from docket consolidation and nearing completion of permitting goals. Additional resources have been provided for payroll, cost of living, and enrichment.
- There are additional increases in payroll, cost of living, and enrichment for new and existing FTE

**GOAL: PREVENTING POLLUTION AND REDUCING RISK IN COMMUNITIES, HOMES, WORKPLACES AND ECOSYSTEMS**

**OBJECTIVE: FACILITATE PREVENTION, REDUCTION AND RECYCLING OF PBTS AND TOXIC CHEMICALS**

**Annual Performance Goals and Measures**

**Reducing PBTs in Hazardous Waste Streams**

- In 2004 Reduce waste minimization priority list chemicals in hazardous waste streams an additional 3% (for a cumulative total of 46% or 81 million pounds) by expanding the use of State and industry partnerships and Regional pilots.
- In 2003 Reduce waste minimization priority list chemicals in hazardous waste streams by 43% to 86 million pounds by expanding the use of state and industry partnerships and Regional pilots
- In 2002 FY 2002 data is currently not available. Data will be available in December 2003.

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
Percentage reduction in generation of priority list chemicals from 1991 levels.	not available	3%	3%	reduction

Baseline: The target for FY 2002 was for a reduction of 40% (91.2 million pounds) from the 1990 levels. Data will be available in December 2003.

**Municipal Solid Waste Source Reduction**

- In 2004 Divert an additional 1% (for a cumulative total of 33% or 79 million tons) of municipal solid waste from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.5 pounds per day.
- In 2003 Divert an additional 1% (for a cumulative total of 32% or 74 million tons) of municipal solid waste from land filling and combustion, and maintain per capita generation of RCRA municipal solid waste at 4.5 pounds per day.
- In 2002 FY 2002 data is currently not available for the diversion of municipal solid waste from land filling and combustion or maintaining per capita generation of RCRA municipal solid waste. Analysis of FY 2002 data is anticipated by September 2004.

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
Millions of tons of municipal solid waste diverted.	not available	74	79	million tons
Daily per capita generation of municipal solid waste.	not available	4.5	4.5	lbs. MSW

Baseline: An analysis conducted in FY 2000 shows 70 million tons (30%) of municipal solid waste diverted and 4.5 lbs. of MSW per person daily generation.

**Reduction of Industrial / Commercial Chemicals**

- In 2004 Prevent, reduce and recycle hazardous industrial/commercial chemicals and municipal solid wastes
- In 2003 The quantity of Toxic Release Inventory (TRI) pollutants released, disposed of, treated or combusted for energy recovery in 2003, (normalized for changes in industrial production) will be reduced by 200 million pounds, or 2%, from 2002. This data will be reported in 2005.
- In 2002 Data Lag

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request	
Reduction of TRI non-recycled waste (normalized)	Not Available	200 Million	200 Million	lbs
Alternative feed stocks, processes, or safer products identified through Green Chemistry Challenge Award			210	Prod/proc (cum)
Number of participants in Hospitals for a Healthy Environment			2000	Participants
Quantity of hazardous chemicals/solvents eliminated through the Green Chemistry Challenge Awards Program			150 million	lbs
For eco-friendly detergents, track the number of laundry detergent formulations developed.			36	formulations

Baseline: The baseline for the TRI non-recycled wastes measure is the amount of non-recycled wastes reported in FY2003. The baseline for eco-friendly detergents is 0 formulations in 1997. The baseline for the alternative feed stocks / processes measure is zero in 2000. The baseline for the quantity of hazardous chemicals / solvents measures is zero pounds in the year 2000. The baseline for the hospitals measure is zero in FY2001.

**Verification and Validation of Performance Measures**

**Performance Measure: Reduction of TRI non-recycled wastes from FY 2003.**

**Performance Database: TRIM:** Toxics Release Inventory Modernization, formerly **TRIS** (Toxics Release Inventory System) provides facility/chemical-specific data quantifying the amount of TRI-listed chemicals entering wastes associated with production process in each year. The total amount of each chemical in production-related wastes can be broken out by the methods employed in managing such wastes, including recycling, energy recovery, treatment, and disposal/release. Amounts of these wastes not recycled are tracked for this performance measure.

**Data Source:** Regulated facilities report facility-specific, chemical-specific release, waste and recycling data to EPA. For example, in calendar year 1999, 22,639 facilities filed 84,068 TRI reports.

**Methods, Assumptions, and Suitability:** TRI data is collected as required by sections 313 of EPCRA and 6607 of Pollution Prevention Act (PPA) (40 CFR '372; [www.epa.gov/tri/](http://www.epa.gov/tri/)). Only certain facilities in specific Standard Industrial Classification (SIC) codes are required to report annually the quantities of over 650 listed toxic chemicals and chemical categories released to each environmental medium and otherwise managed as waste(40 CFR ' 372; [www.epa.gov/tri/](http://www.epa.gov/tri/)). Regulation requires covered facilities to use monitoring, mass balance, emission factors and/or engineering calculations approaches to estimate releases and recycling volumes. For purposes of this performance measure, data controls are employed to facilitate cross-year comparisons: a

subset of chemicals and sectors are assessed that are consistently reported in all years; data are normalized to control for changes in production using published United States Department of Commerce economic indices.

**QA/QC Procedures:** Most facilities use EPA-certified automated Toxics Release Inventory (TRI) FORM R reporting tools, which contains automated error checking mechanisms. Upon receipt of the facilities' reports, EPA conducts automated edits, error checks, data scrubs, corrections and normalization during data entry and subsequent processing to verify that the information provided by the facilities is correctly entered in TRIM. The Agency does not control the quality of the data submitted by the regulated community. EPA does, however, work with the regulated community to improve the quality of their estimates.

**Data Quality Review:** The quality of the data contained in the TRI chemical reports is dependent upon the quality of the data that the reporting facility uses to estimate its releases and other waste management quantities. Use of TRI Form R by submitters and EPA's performance data reviews combine to help assure data quality. The GAO Report, Environmental Protection: EPA Should Strengthen Its Efforts to Measure and Encourage Pollution Prevention (GAO - 01 - 283), recommends that EPA strengthen the rule on reporting of source reduction activities. Although EPA agrees that source reduction data are valuable, the Agency has not finalized regulations to improve reporting of source reduction activities by TRI-regulated facilities. From the various data quality efforts, EPA has learned of several reporting issues such as incorrect assignment of threshold activities and incorrect assignment of release and other waste management quantities (EPA-745-F-93-001; EPA-745-R-98-012; [www.epa.gov/tri/tridata/data\\_quality\\_reports/index.htm](http://www.epa.gov/tri/tridata/data_quality_reports/index.htm); [www.epa.gov/tri/report/index.htm](http://www.epa.gov/tri/report/index.htm).) For example, certain facilities incorrectly assigned a 'processing' (25,000 lb) threshold instead of an 'otherwise use' (10,000 lb) threshold for certain non-persistent, bioaccumulative and toxic (PBT) chemicals, so they did not have to report if their releases were below 25,000 lbs. Also, for example, some facilities incorrectly reported fugitive releases instead of stack releases of certain toxic chemicals.

**Data Limitations:** Use of the data should be based on the user's understanding that the Agency does not have direct assurance of the accuracy of the facilities' measurement and reporting processes. TRI release data are reported by facilities on a good faith, best-estimate basis. EPA does not have the resources to conduct on-site validation of each facility's reporting data, though on-site investigations do occur each year at a subset of reporting facilities.

**Error Estimate:** From the various data quality efforts, EPA has learned of several reporting issues such as incorrect assignment of threshold activities and incorrect assignment of release and other waste management quantities (EPA-745-F-93-001; EPA-745-R-98-012; <http://www.epa.gov/tri/report/index.htm>; [www.epa.gov/tri/tridata/data\\_quality\\_reports/index.htm](http://www.epa.gov/tri/tridata/data_quality_reports/index.htm); [www.epa.gov/tri/report/index.htm](http://www.epa.gov/tri/report/index.htm))

**New/Improved Data or Systems:** EPA plans to develop regulations for improving reporting of source reduction activities by TRI reporting facilities.



**References:** [www.epa.gov/tri/](http://www.epa.gov/tri/) and additional citations provided above. (EPA-745-F-93-001; EPA-745-R-98-012; <http://www.epa.gov/tri/report/index.htm>; [www.epa.gov/tri/tridata/data\\_quality\\_reports/index.htm](http://www.epa.gov/tri/tridata/data_quality_reports/index.htm); [www.epa.gov/tri/report/index.htm](http://www.epa.gov/tri/report/index.htm))

**Performance Measure: Millions of tons of municipal solid waste diverted**

**Performance Database:** Data are provided by the Department of Commerce. EPA does not maintain a database for this information.

**Data Source:** 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 described in the EPA report titled “Characterization of Municipal Solid Waste in the United States.” The Department of Commerce collects solid waste generation and recycling rate data from various industries.

**Methods, Assumptions and Suitability:** Data on domestic production of materials and products are compiled using published data series. United States Department of Commerce sources are used where available, but in several instances more detailed information on production of goods by end-use is available from trade associations. The goal is to obtain a consistent historical data series for each product and/or material. Data on average product lifetimes are used to adjust the data series. These estimates and calculations result in a material-by-material and product-by-product estimate of MSW generation, recovery, and discards.

**QA/QC Procedures:** Quality assurance and quality control are provided by the Department of Commerce’s internal procedures and systems. The report prepared by the Agency, “Characterization of Municipal Solid Waste in the United States,” is then reviewed by a number of experts for accuracy and soundness.

**Data Quality Review:** The report, including the baseline numbers and annual rates of recycling and per capita municipal solid waste generation, is widely accepted among experts. There are various assumptions factored into the analysis to develop estimates of MSW generation, recovery and discards.

**Data Limitations:** Non-hazardous waste data limitations stem from the fact that the baseline statistics and annual rates of recycling and per capita municipal solid waste generation are based on a series of models, assumptions, and extrapolations and, as such, are not an empirical accounting of municipal solid waste generated or recycled.

**Error Estimate:** N/A. Currently, the Office of Solid Waste (OSW) does not collect data on estimated error rates.

**New/Improved Data or Systems:** Because the statistics on MSW generation and recycling are widely reported and accepted by experts, no new efforts to improve the data or the methodology have been identified or are necessary. EPA plans to develop regulations for improving reporting of source reduction activities by TRI reporting facilities.

**References:** *Municipal Solid Waste in the United States: 1999 Facts and Figures*, EPA, July 2001 (EPA 530-R-01-014), <http://www.epa.gov/osw/index.htm>

**FY 2004 Performance Measure: Quantity of hazardous chemicals/solvents eliminated through the Green Chemistry Challenge Awards Program and Number of alternative feedstocks, processes or safer products identified through Green Chemistry Challenge Awards Program**

**Performance Database:** EPA is developing an electronic database (“metrics” database) which will allow organized storage and retrieval of green chemistry data submitted to the agency on alternative feedstocks, processes, and safer chemicals. The database is being designed to store and retrieve in systematic fashion information on the environmental benefits and, where available, economic benefits that these alternative green chemistry technologies offer. The database is also being designed to track the quantity of hazardous chemicals and solvents eliminated through implementation of these alternative technologies.

**Data Source:** Industry and academia submit nominations annually to EPA in response to the Presidential Green Chemistry Challenge Awards.

**Methods, Assumptions, and Suitability:** This is an output measure tracked directly through Office of Pollution Prevention and Toxics (OPPT) record-keeping systems. No models or assumptions or statistical methods are employed.

**QA/QC Procedures:** Data undergo a technical screening review by EPA before being uploaded to the database to determine whether data submitted adequately support the environmental benefits described. Subsequent to Agency screening, data is reviewed by an external independent technical expert panel. Additional comments provided by this panel are incorporated into the database. This panel is convened primarily for judging nominations submitted to the Presidential Green Chemistry Challenge Awards Program and selecting winning technologies.

**Data Quality Review:** Review of industry and academic data as documented in United States EPA, Office of Pollution Prevention and Toxics, Green Chemistry Program Files available at <http://www.epa.gov/opptintr/greenchemistry/>

**Data Limitations:** Occasionally data are limited for a given technology due to confidential business information (the Presidential Green Chemistry Challenge Awards Program does not process CBI). Occasionally, the percentage of market penetration of implemented alternative green chemistry technology (potential benefits versus realized benefits) is unclear. In these cases, the database is so noted.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** None.

**References:** <http://www.ams.usda.gov/science/pdp/index.htm>

**FY 2004 Performance Measure: Number of participants in the Hospitals for a Healthy Environment Mercury Project**

**Performance Database:** EPA, in cooperation with its institutional partners, operates a voluntary program whereby hospitals and associated industries can voluntarily sign up to become an H2E Partner (hospitals) or Champion (associated industries). The purpose of the H2E Program is to reduce mercury emissions and waste at hospitals.

**Data Source:** Sign-up forms from participating H2E institutions.

**Methods, Assumptions, and Suitability:** The sign-up program is the first step for a hospital or associated industry to participate in the H2E. No assumptions or models are employed.

**QA/QC Procedures:** H2E staff contact each participant to confirm their sign-up, and welcome them to the program.

**Data Quality Reviews:** N/A.

**Data Limitations:** Data limited to name of facility, contact person and information.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** Database will be expanded after H2E receives ICR approval.

**References:** United States EPA Office of Pollution Prevention and Toxics, Hospitals for a Healthy Environment Program (H2E). Program information and data available at <http://www.h2e-online.org/about/index.htm>

**FY 2004 Performance Measure: The number of eco-friendly laundry detergents developed.**

**Performance Database:** Information on laundry detergent ingredients is supplied on a proprietary basis by formulator companies. Information on potential safer substitute ingredients as identified by the formulator is held proprietary as well.

**Data Source:** Laundry detergent manufacturers. General information on chemicals in detergent component classes; source of potential safer substitutes.

**Methods, Assumptions, and Suitability:** Assume that formulator companies determine performance of eco-friendly detergents.

**QA/QC Procedures:** Formulator companies report periodically on the status of their formulations and notify DfE in advance of potential ingredient changes.

**Data Quality Reviews:** N/A.

**Data Limitations:** N/A.

**Error Estimate:** N/A.

**New/Improved Data or Systems:** Formulator companies notify DfE of Agency-approved changes in detergent ingredients.

**References:** N/A.

### **Coordination with Other Agencies**

This objective spans a broad range of pollution prevention activities, which can yield reductions in waste generation in both the public and private sectors. For example, the Environmentally Preferable Product initiative, which implements Executive Orders 12873 and 13101, is promoting the use of cleaner products by Federal agencies, which may stimulate demand for the development of such products by industry.

This effort includes a number of demonstration projects with other Federal departments/agencies, such as the General Services Administration (use of safer products for indoor painting and cleaning), Department of Defense (use of safer paving materials for parking lots), and Defense Logistics Agency (safer solvents). The program also works with the National Institute of Standards and Technology, the International Standards Organization, and other groups to develop standards for Environmental Management Systems.

In addition to business, industry and other non-governmental organizations, EPA will work with Federal, State, Tribal, and local governments to encourage reduced generation of waste as well as the safe recycling of wastes. Frequently, successful projects require multiple partners to address the multi-media nature of effective source reduction and recycling programs. The Agency has brought together a range of stakeholders to examine alternatives in specific industrial sectors, and several regulatory changes have followed which encourage hazardous waste recycling. Partners in this effort include the Environmental Council of States, the Tribal Association on Solid Waste and Emergency Response, and the Association of State and Territorial Solid Waste Management Officials.

As Federal partners, EPA and the United States Postal Service (USPS) work together on several municipal solid waste projects. For instance, rather than dispose of returned or unwanted mail, EPA and the USPS developed and implemented successful recycling procedures and markets, including the return of unwanted mail (advertisements, catalogues, etc.) to the Post Office for recycling rather than disposal by the recipient. In addition, EPA Regional offices have provided significant assistance to the National Park Service to implement Integrated Solid Waste Management Plans at parks in western states. EPA also works with the Small Business Administration to provide support to recycling businesses.

EPA has worked with the Council on Environmental Quality (CEQ) and the Federal Environmental Executive (FEE) to reinvigorate Federal leadership for sustainable recycling. In particular, the Agency is currently engaged with the Department of Defense, Department of Education, USPS, Department of Energy, the FEE, and other agencies to foster proper management of surplus electronics equipment, with a preference for reuse and recycling. With these agencies, and in cooperation with the electronics industry, EPA participated in developing

a draft interagency memorandum of understanding (MOU) which will lead to increased reuse and recycling of an array of computers and other electronics hardware used by civilian and military agencies. Implementation of this MOU will divert substantial quantities of plastic, glass, lead, mercury, silver, and other materials from disposal.

### **Statutory Authorities**

Toxic Substances Control Act (TSCA) sections 4 and 6 and TSCA Titles II, III, and IV (15 U.S.C. 2605 and 2641-2692)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) sections 3, 4, 5, 6, 11, 18, 24, and 25 (7 U.S.C. 136a, 136a-1, 136c, 136d, 136i, 136p, 136v, and 136w)

Pollution Prevention Act (PPA) (42 U.S.C. 13101-13109)

Clean Air Act (CAA) section 309 (42 U.S.C. 7609)

Clean Water Act (33 U.S.C. 1251-1387)

Emergency Planning and Community Right-to-Know Act (EPCRA) (42 U.S.C. 11001-11050)

Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901-6992k)

Solid Waste Disposal Act as amended by the Hazardous Waste Amendments of 1984.

**Environmental Protection Agency**

**FY 2004 Annual Performance Plan and Congressional Justification**

**Preventing Pollution and Reducing Risk in Communities, Homes, Workplaces and Ecosystems**

**Objective:** Assess Conditions in Indian Country

By 2005, EPA will assist all Federally recognized tribes in assessing the condition of their environment, help in building tribes' capacity to implement environmental management programs, and ensure that EPA is implementing programs in Indian country where needed to address environmental issues

**Resource Summary**  
(Dollars in Thousands)

	<b>FY 2002 Actuals</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
<b>Assess Conditions in Indian Country</b>	<b>\$64,326.3</b>	<b>\$70,909.4</b>	<b>\$76,435.2</b>	<b>\$5,525.8</b>
Environmental Program & Management	\$13,163.6	\$13,439.7	\$13,935.2	\$495.5
State and Tribal Assistance Grants	\$51,162.7	\$57,469.7	\$62,500.0	\$5,030.3
Total Workyears	98.9	90.7	91.3	0.6

**Key Program**  
(Dollars in Thousands)

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
American Indian Environmental Office	\$9,911.6	\$10,219.7	\$10,665.9	\$446.2
Facilities Infrastructure and Operations	\$1,165.4	\$1,250.3	\$1,154.4	(\$95.9)
Legal Services	\$1,383.0	\$1,428.7	\$1,470.8	\$42.1
Management Services and Stewardship	\$426.9	\$475.5	\$518.1	\$42.6
Regional Management	\$80.0	\$65.5	\$126.0	\$60.5

	<b>FY 2002 Enacted</b>	<b>FY 2003 Pres. Bud.</b>	<b>FY 2004 Request</b>	<b>FY 2004 Req. v. FY 2003 Pres Bud</b>
Tribal General Assistance Grants	\$52,469.7	\$57,469.7	\$62,500.0	\$5,030.3

### **FY 2004 Request**

Under Federal environmental statutes, the Agency has responsibility for assuring human health and environmental protection in Indian country. Since 1984, EPA policy has been to work with tribes on a government-to-government basis that affirms the vital trust responsibility that EPA has with every Federally recognized Tribal government. EPA endeavors to address Tribal environmental priorities, ensure compliance with environmental laws, provide field assistance, assure effective communication and consultation with tribes, allow flexibility in grant programs, and provide resources for Tribal operations.

A lack of comprehensive environmental data severely impacts our ability to properly identify risk to human health and the environment in Indian country. Progress toward building Tribal and EPA infrastructure and completing a documented baseline assessment of environmental conditions continues to be a major focus for the Agency and tribes. These baseline assessments will provide a blueprint for planning future activities through the development of Tribal/EPA Environmental Agreements (TEAs) or similar Tribal environmental plans to address and support priority environmental multi-media concerns in Indian country. In FY 2004, resources will be used to support the Baseline Assessment project, write national assessment reports, and track environmental progress in Indian country. For its part, EPA will be able to assess conditions in Indian country under a wide variety of parameters on national, regional, and local levels and make appropriate program decisions. In FY 2004, the Agency will formalize interagency data standards and protocols to ensure information is collected and reported consistently among the Federal agencies by working as the co-lead (EPA with the Department of Interior, Bureau of Indian Affairs) on the Federal Geographic Data Committee (FGDC) Tribal data workgroup. The interagency efforts of the Baseline Assessment Project will promote consistency throughout the Federal government in assessing environmental conditions in Indian country and are conducted under OMB Circular A-16.

Under the authority of the Indian Environmental General Assistance Program (GAP) Act of 1992, EPA provides grants to Tribal governments and intertribal consortia for developing the capacity to administer multi-media environmental protection programs. In FY 2004, EPA is requesting an additional \$5 million (total of \$62.5 million), which will help 45 additional tribes develop environmental programs. This includes assessing the status of a tribe's environmental condition, building an environmental program tailored to the tribe's needs, developing environmental education programs, developing solid waste management plans, assisting in the building of Tribal environmental capacity, and alerting EPA to serious conditions involving immediate public health and ecological threats.

EPA has strived to work effectively with Indian tribes since before the promulgation of its formal Indian Policy in 1984. Vital to that policy are the principles that the Agency has a

government-to-government relationship with tribes and that “EPA recognizes tribes as the primary parties for setting standards, making environmental policy decisions and managing programs for reservations, consistent with agency standards and regulations.” To that end, EPA “encourage[s] and assist[s] tribes in assuming regulatory and program management responsibilities,” primarily through its Treatment in the Same Manner as a State (TAS) process under several environmental statutes.

EPA’s policy has been and will continue to be that tribes develop the capability to implement Federal programs themselves. However, in working with tribes, EPA has realized that TAS does not suit the needs of all tribes. Some tribes with acute pollution sources and other environmental problems may be too small to support fully delegated or approved environmental programs. Other tribes are wary of seeking TAS status because it may lead to costly litigation that may in turn lead to a diminishment of Tribal sovereignty. As a result few tribes have sought TAS under EPA’s various regulatory programs. In the absence of EPA-approved Tribal programs, EPA generally faces practical challenges in implementing the Federal programs in Indian country. EPA will continue to encourage and work with tribes to develop their capability to implement Federal environmental programs.

Also, in accordance with EPA’s longstanding policy, the Agency is considering additional approaches for how EPA and Indian tribes might work together to protect public health and the environment in Indian country. As part of that effort, EPA is again proposing language that would allow EPA to award cooperative agreements to Federally recognized Indian tribes or qualified Intertribal consortia to assist the Administrator in implementing Federal environmental programs for Indian tribes. These cooperative agreements would be made notwithstanding the Federal Grant and Cooperative Agreement Act requirements that Federal agencies use a contract when the principal purpose of a transaction is to acquire services for the direct benefit or use of the United States. Cooperative agreements, rather than a contract under the Federal acquisition regulation, are the preferred funding mechanism, since they better reflect the government-to-government relationship. These cooperative agreements would not be awarded using funds designated for State financial assistance agreements.

The proposed language would promote Tribal participation when EPA is directly implementing Federal environmental programs in Indian country or for tribes. It would also help tribes build the capacity to achieve TAS status if they wish to do so. While EPA would retain final decision-making authority and ultimate responsibility for all regulatory activities where EPA directly implements Federal programs, the proposed language would allow for varying degrees of Tribal involvement in assisting EPA in carrying out the Federal program depending upon a tribe’s interest and ability in carrying out specific work. Some tribes might perform much of the work for EPA necessary to develop and carry out Federal environmental programs. Other tribes might gradually increase their involvement as their capacity to assist EPA increases over time. In this way, the proposed language would improve environmental protection while also building the capacity and expertise of the tribes to run their own environmental programs.



## **FY 2004 Change from FY 2003 Request**

### EPM

- There are increases for payroll, cost of living, and enrichment for new and existing FTE.

### STAG

- (+\$5,030,300) Increase in Indian General Assistance Program grants to help Federally recognized tribes and intertribal consortia develop environmental programs.

## **GOAL: PREVENTING POLLUTION AND REDUCING RISK IN COMMUNITIES, HOMES, WORKPLACES AND ECOSYSTEMS**

### **OBJECTIVE: ASSESS CONDITIONS IN INDIAN COUNTRY**

#### **Annual Performance Goals and Measures**

##### **Tribal Environmental Baseline/Environmental Priori**

In 2004          Percent of Tribes will have an environmental presence (e.g., one or more persons to assist in building Tribal capacity to develop and implement environmental programs).

In 2003          In 2003, AIEO will evaluate non-Federal sources of environmental data pertaining to conditions in Indian Country to enrich the Tribal Baseline Assessment Project.

In 2002          A cumulative total of 331 environmental assessments have been completed.

Performance Measures:	FY 2002 Actuals	FY 2003 Pres. Bud.	FY 2004 Request		
Percent of Tribes with delegated and non-delegated programs (cumulative).			5%		Tribes
Percent of Tribes with EPA-reviewed monitoring and assessment occurring (cumulative).			20%		Tribes
Percent of Tribes with EPA-approved multimedia workplans (cumulative).			18%		Tribes
Environmental assessments for Tribes. (cumulative)	331				Tribes, etc.
Non-federal sources of environmental data pertaining to conditions in Indian Country.		20			Data sources

Baseline:          There are 572 tribal entities that are eligible for GAP program funding. These entities are the ones for which environmental assessments of their lands will be conducted.

#### **Program Assessment Rating Tool**

##### Tribal General Assistance

As part of the Administration's overall evaluation of effectiveness of Government programs, the Tribal General Assistance program was evaluated with the following specific findings:

1. The program's purpose is very clear and agreed upon by interested parties. Not all tribes currently have the financial resources and technical ability to develop and implement Federal environmental programs on their own.
2. Strategic planning is the program's weakest area, and plans from 2003 and earlier had weak performance goals that focused on processes more than environmental outcomes.
3. In recognition of these weaknesses, EPA has been working to develop new long-term goals and efficiency measures.
4. The program also adopted new annual performance measures, which more accurately reflect the program's purpose and activities.
5. GAP has improved its program management over the last year. It implemented a new grants management system which provides better information on grantee activities, and it also developed a tribal database which holds environmental, cultural, and administrative information on each of the tribes.

As a result of these findings, the Administration recommends:

1. Increasing GAP funding to \$62.5 million, \$5 million above the 2003 President's Budget level of \$57 million, in recognition that program management is improving.
2. That EPA use the new information from the recently implemented grants management system to further improve the program's strategic planning and management, including the development of long-term goals and efficiency measures.

### **Verification and Validation of Performance Measures**

#### **FY 2004 Performance Measure: Tribes with an environmental presence.**

**Performance Database:** An environmental presence for a tribe implies the development of the capacity to implement environmental programs: to assess environmental conditions, to establish environmental priorities, and then to manage programs that result in improvement of the environment. The American Indian Environmental Office (AIEO) has made tremendous progress in developing an electronic baseline assessment system used to access tribal environmental information and to track the progress of the development of an environmental presence in Indian country. The Tribal Information Management System (TIMS) provides the capability for each tribe to understand and effectuate program priorities to build a strong, sustainable environment for the future based upon sound, quality information.

TIMS is a web-based application used to access Baseline Assessment Project environmental information on Federally recognized Indian tribes. The site is located at <https://oasint.rtpnc.epa.gov>. Public access to this information via the web cannot be provided until EPA completes consultation with the tribes, but is expected within the next year. TIMS contains information about the condition of the environment for a tribe, the nature and status of

regulated facilities on tribal lands, and the nature and extent of tribal environmental management program activities. TIMS is not a static document. It is a real-time system that extracts information from EPA and external data systems as they are maintained and updated by various Federal, non-Federal, and tribal partners. TIMS is also a vehicle for tribes, Federal agencies and non-Federal agencies, to develop partnerships, improve communication, and to establish tribal environmental priorities in a coordinated, multimedia, and interagency way.

The outputs of TIMS serve many purposes, such as: (1) allows EPA to accurately assess the establishment of an environmental presence in Indian country in a data rich and meaningful way, and to report that result annually as a measure of performance goals; (2) allows EPA to measure trends and changes in environmental conditions and program results over time; and, (3) provides information for tribes and agencies to establish environmental priorities in a coordinated fashion.

**Data Sources:** Current TIMS data sources are existing Federal databases, both from EPA and other agencies, supplemented by data sources collected from the EPA regions as appropriate. All data sources are identified and referenced in the TIMS application. In FY 2003, AIEO will analyze data from 20 non-Federal data sources for enrichment of the Tribal Baseline Assessment Project. In particular, the integration of data sources from Federal, non-Federal and tribal partners will be used to assess environmental conditions and environmental vulnerabilities for Alaska Native Villages. Building upon these accomplishments, in FY 2004 we expect to formalize interagency data standards and protocols, working with the Federal Geographic Data Committee (FGDC) formed as a result of OMB Circular A-16, to ensure information is collected and reported consistently among the Federal agencies.

**Methods, Assumptions and Suitability:** The methodology for developing assessments of environmental conditions in Indian country will be standard statistical methods of analysis of variance. Chi Square and Fisher linear model techniques will be used to evaluate the statistical significance of comparisons of tribal conditions, with regard to specific environmental parameters, compared to the nation as a whole. The data used to develop these statistical inferences are in general non-aggregated point measurements that have been geographically indexed. Sample sizes are generally large enough (often in the hundreds of thousands when evaluating parameters such as regulated facilities) to provide the necessary degrees of freedom to make statistical inferences in spite of the large variance in sizes of reservations in Indian country. The data are suitable for year-to-year performance comparisons, and also for trend analysis. Forecasting technologies have not yet been tested on the data.

**QA/QC Procedures:** All the data used in the baseline project have quality assurance and metadata documentation prepared by the originating agency. These will all be described in a Quality Management document: "Manual to TIMS: Tribal Information Management System." AIEO will standardize data and metadata standards established by the Federal Geographic Data Committee.

**Data Quality Reviews:** Quality of the external databases will be described but not ranked. Data correction and improvement is an ongoing part of the baseline assessment project. Tribes will have the opportunity to review and comment upon their Tribal Profile. Mechanisms for adjusting data will be supplied. Errors in the tribal profile are subject to errors in the underlying data. The baseline project has developed a special site <http://db-server.tetrattech>

[ffx.com/baseline/datacenter](http://ffx.com/baseline/datacenter) which will be used to: 1) allow direct editing and correction of text of the narrative profiles, 2) submit geographic corrections to maps and boundary files, or to submit files of different kinds of political units for analysis, and 3) submit corrections to quantitative data points, and 4) display the bibliography of documents used to compile the TIMS information system, including PDF scans of many of the documents.

**Data Limitations:** The largest part of the data used by the baseline assessment project has not been coded to particular tribes by the recording agency. AIEO uses new geographic data mining technologies to extract records based on the geographical coordinates of the data points. For example, if a regulated facility has latitude and longitude coordinates that place it in the boundaries of the Wind River Reservation, then it is assigned to the Arapaho and Shoshone Tribes of the Wind River Reservation. This technique is extremely powerful, because it “tribally enables” large numbers of information systems which were previously incapable of identifying tribes. This will be applied to all the EPA databases. There are limitations, however. When database records are not geographically identified with latitude and longitude, the technique does not work and the record is lost to the system. Likewise, the accuracy of the method depends on the accuracy of the reservation boundary files. EPA continues to request up-to-date and accurate coverage of reservation boundaries and land status designations from other agencies.

**Error Estimate:** Analysis of variation of the various coverage of reservation boundaries that are available to EPA indicates deviations of up to 5%. The other source of error comes from records that are not sufficiently described geographically for assignment to specific tribes. For some agencies, such as USGS, the geographic record is complete, so there is no error from these sources. It is estimated that 20% of the regulated facilities in EPA regulatory databases are not geographically described, and thus will not be recognized by the AIEO methodology.

**New/Improved Data or Systems:** The technologies used by the baseline assessment project are all new and state of the art. Everything is delivered on the Internet, with security, and no need for any special software or data disk on the desktop. The geographic interface is an ESRI product called ARC/IMS, which is a web-based application, with a fully functional GIS system that is fully scalable. In FY 2003, the entire system will be rendered in 3D. The baseline project uses XML protocols to attach to and display information seamlessly and in real time from cooperating agency data systems without ever having to download the data to some intermediate server. Finally, the baseline assessment project has developed web based, secure program inputting systems that allow regional project officers to track programs and input programmatic data that directly feed into the TIMS reports, performance reporting systems, and other customizable reports.

## **References:**

Manual to TIMS: Tribal Information Management System (draft).

[Http://www.epa.gov/enviro/html/bia/tribal\\_em.html](http://www.epa.gov/enviro/html/bia/tribal_em.html)

<https://oasint.rtpnc.epa.gov/TIMS>

<http://db-server.tetrattech-ffx.comn/baseline/datacenter>

<https://oasint.rtpnc.epa.gov/TATS>

<http://gap-demo.tetrattech-ffx.com>

## **Coordination with Other Agencies**

### Solid Waste Interagency Workgroup

EPA and a large number of Agencies including the Bureau of Indian Affairs, the Indian Health Service, the Federal Aviation Administration, the National Oceanic and Atmospheric Administration, and the Departments of Housing and Urban Development, Agriculture (Forest Service and Rural Utilities Service), and Defense are working collaboratively to identify, prioritize and close solid waste dumps in Indian country. The Group is focusing on 146 of the highest priority sites from the Indian Health Service's 1997 Report to Congress, entitled "Open Dumps on Indian Lands," which contains an inventory of 1,162 open dumps in Indian country. Additional agencies are likely to participate as the workgroup further defines its goals and strategy.

### Other Examples of Interagency Coordination

EPA and the Department of Interior are coordinating an Interagency Tribal Information Steering Committee that includes the Bureau of Reclamation, Department of Energy, Department of Housing and Urban Development, United States Geological Survey, Federal Geographic Data Committee, Bureau of Indian Affairs, Indian Health Service, Department of the Treasury, and Department of Justice. This Interagency effort is aimed to coordinate the exchange of selected sets of environmental, resource, and programmatic information pertaining to Indian country among Federal agencies in a "dynamic" information management system that is continuously and automatically updated and refreshed, to be shared equally among partners and other constituents.

Under a two- party interagency agreement, EPA works extensively with the Indian Health Service to cooperatively address the drinking water and wastewater infrastructure needs of Indian tribes. EPA is developing protocols with the Indian Health Service Sanitation Facilities Construction Program for integration of databases of the two agencies, within the framework of the Tribal Information Management System.

EPA has organized a Tribal Working Group in the Federal Geographic Data Committee, and, along with BIA, is the co-chair of the group. In the Tribal Working Group, EPA will play a lead role in establishing common geographic data and metadata standards for Tribal data, and for establishing protocols for exchange of information among Federal, non-Federal and Tribal cooperating partners.

EPA is developing protocols with the Bureau of Reclamation, Native American Program, for integration of databases of the two agencies, within the framework of the Tribal Information Management System. EPA is also developing agreements to share information with the Alaska District, United States Army Corps of Engineers.

**Statutory Authorities**

Indian Environmental General Assistance Program (GAP)

Act of 1992 as amended (42 U.S.C. 4368b)