The National Center for Environmental Innovation

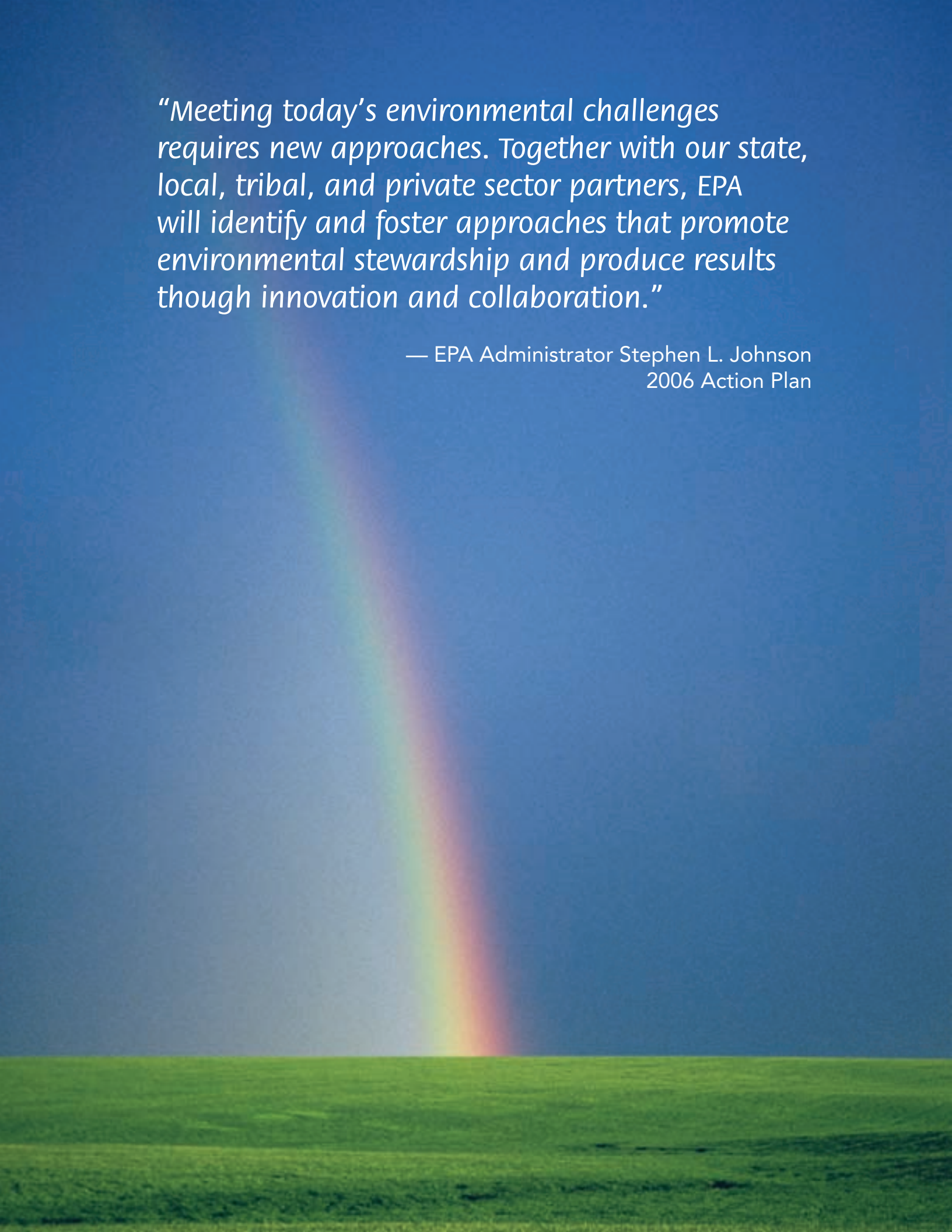
Report on Progress

2005–2006

About the Cover

To innovate means to introduce something new. At EPA, the National Center for Environmental Innovation (NCEI) is often involved in introducing new ideas for improving environmental results. When we find ideas that prove worthy, we focus on helping others apply them in ways that improve environmental programs and policies. And so, just as the dandelion spreads seeds for the next generation of plants, NCEI plays a key role in spreading new ideas for the next generation of environmental protection.

Contents



"Meeting today's environmental challenges requires new approaches. Together with our state, local, tribal, and private sector partners, EPA will identify and foster approaches that promote environmental stewardship and produce results though innovation and collaboration."

— EPA Administrator Stephen L. Johnson
2006 Action Plan

Introduction

How can EPA inspire self-motivated environmental action by businesses, communities, and individuals?

Can environmental agencies develop regulations that provide better results and more flexibility and accountability?

How do we spur new ideas that will lead to the next generation of environmental progress?

Such questions are key to continuously improving our nation's environmental protection system, and they are the kinds of questions that shape our work everyday in EPA's National Center for Environmental Innovation (NCEI).

NCEI was created in 2003 to serve as a focal point for innovation at EPA. In addition to providing leadership on a number of management issues, like evaluating results from innovative initiatives, we also run several innovative programs that are designed to improve environmental results in businesses, communities, and other institutions. NCEI issued its first progress report in 2004, and this latest report describes achievements over the past two years.

Our Goals

- Strong environmental stewardship across society that supports sustainable development and pollution prevention.
- A performance-oriented regulatory system that allows flexibility to achieve environmental goals.
- A culture of creative environmental problem-solving that has a high capacity for collaborative, results-oriented work and the organizational systems needed to support it.

NCEI plays a unique role within EPA. With our multimedia focus, we engage in a wide variety of environmental issues. We also typically approach our work through partnerships—with our colleagues in other parts of the Agency and with public and private sector organizations externally. These collaborations enable us to leverage our resources and benefit from the experiences and expertise that others can bring to environmental problem-solving.

From pilot projects that test new environmental protection strategies, to special programs that are designed to promote environmental leadership, to grants that help states explore innovative policy ideas, NCEI is finding new ways to achieve better environmental results. This report highlights how NCEI is enhancing environmental programs and making progress toward our long-term goals.

Strong Environmental Stewardship

Innovation has never been more important for environmental programs, for the very nature of environmental protection is evolving. In EPA's earliest years, the Agency focused primarily on developing national standards to protect public health and the environment from the most visible and egregious sources of pollution. Regulations still represent one of EPA's most important tools, but today we recognize that regulations are not enough. Controlling polluted runoff and stemming the loss of habitat and biodiversity, for example, require a more inclusive strategy, one that engages the millions of Americans whose everyday choices affect our environment. In short, such challenges require a greater degree of environmental stewardship—where everyone takes responsibility to improve environmental quality and achieve sustainable results. Over the past two years, NCEI has taken a number of steps to promote environmental stewardship—in our own operations and by others.

Recognizing the Importance of "Everyday Choices"

In November 2005, NCEI led the Agency in completing a report to the Administrator that provides an overview of the many ways EPA supports environmental stewardship and the opportunities that are available to do even more. *Everyday Choices: Opportunities for Environmental Stewardship* acknowledged—in a way EPA had never done before—the need to focus not just on pollution control and pollution prevention, but on the long-term sustainability of our natural resources. The report highlighted a number of existing environmental stewardship activities that can move us toward sustainability and identified ways EPA could be more effective in advancing environmental stewardship in the future. Since its release, a number of organizations have expressed their interest in this topic and their excitement about what creative and innovative environmental stewardship strategies might enable us to achieve.

Meanwhile, EPA has shown its commitment to environmental stewardship through our own operations. For example, in 2006, we became the first federal agency to meet 100 percent of our electricity needs with green power. We also "walked the talk" with green buildings—two new EPA facilities were built to achieve a gold rating under the internationally recognized "LEED" (Leadership in Energy and Environmental Design) green building standard. Other significant initiatives EPA designed to support environmental stewardship include the launch of a national water conservation program, WaterSense, modeled after the highly successful ENERGY STAR program for energy efficiency; a voluntary agreement with the nanotechnology industry that will enable us to better understand the environmental implications of this emerging technology; and a grant competition for colleges and universities to support sustainability research.

Rewarding Environmental Leaders

The National Environmental Performance Track is EPA's premiere program for recognizing environmental stewardship. Performance Track is based on the premise that government should complement existing programs with new tools and strategies that not only protect people and the environment, but also capture opportunities for reducing cost and spurring technological innovation. EPA provides exclusive regulatory and administrative benefits to Performance Track members, places them at low priority for routine inspections, and offers public recognition, networking opportunities, and other benefits. To qualify, a facility must consistently comply with environmental requirements and put a high-quality environmental management system in place. They are also required to set three-year goals for continuously improving environmental performance and to work with their employees and local communities to pursue those goals. Currently, 470 facilities from 46 states and Puerto Rico have earned membership in this distinctive program. They include manufacturing facilities as well as such diverse sectors as airports and wastewater treatment plants.

To date, Performance Track members are making significant gains for the environment. Since 2000, members have collectively reduced water use by 3.5 billion gallons, eliminated 97,000 metric tons of carbon dioxide equivalent, and conserved more than 14,000 acres of land while helping to protect their local and national environment. But the results don't

stop there. Performance Track is having another positive effect—helping to transform EPA's relationship with the regulated community. Members now report a more collaborative and constructive dynamic with EPA. This significant development was recognized in 2006 when Performance Track was named a finalist for the prestigious *Excellence in Government* awards. Meanwhile, several companies followed the lead of KLD Research & Analytics in using Performance Track's selection criteria to inform the financial analyses and ratings they provide for investors.

Partnering With Key Economic Sectors

While recognizing the goals and accomplishments of individual facilities is important in encouraging environmental stewardship, there is also much to be gained by encouraging improvement across whole industry sectors. That is the focus of NCEI's Sector Strategies program, which works with specific industries through partnerships with their national trade associations. Together, we are working to address regulatory barriers that can inadvertently hinder environmental improvements, promoting the use of environmental management systems (EMSs) that can be used to address environmental issues more strategically, and measuring and reporting on each sector's environmental progress.

Our work with participating sectors is tailored to meet their specific interests and needs. For example, together with our partners, we are:

- Identifying incentives that would encourage more diesel retrofitting around ports and construction sites.
- Analyzing paint disposal trends as a first step toward developing a national recycling program for leftover paint.
- Promoting recycling of millions of tons of sand that are used by foundry operations each year and that typically wind up in landfills.
- Supporting development of a national environmental compliance assistance center for colleges and universities.
- Exploring a fundamentally different approach to regulating emissions from pulp and paper companies.

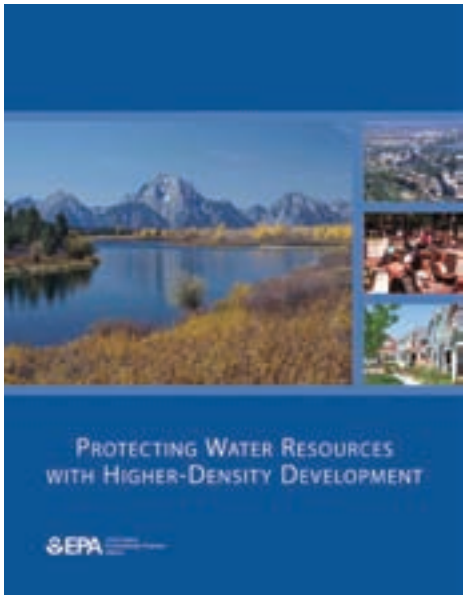
In 2005, NCEI issued a comprehensive report on each sector's environmental performance. In addition to providing the public with clear information about each sector's challenges and accomplishments, this report also gave the sectors a better understanding of the opportunities for improved environmental stewardship. In 2006, NCEI issued a second performance assessment, which broke new ground by providing a first-time look at how Toxics Release

Inventory data can be used to target the greatest hazard reduction opportunities when managing chemicals. This assessment was accomplished by using toxicity-weighted scores for chemicals used in each sector rather than just the number of pounds released. The resulting information provides a valuable tool for future strategic planning.

Encouraging Smart Growth

Environmental stewardship is important at the community level, too. Today a growing number of communities are recognizing how smart growth can align with their environmental stewardship interests, and NCEI is providing tools and programs to support them. For example, we provide technical assistance awarded on a competitive basis to help communities address growth challenges. Over the past two years, we've funded over $750,000 to help 15 communities in urban, rural, and coastal areas. Through this assistance, we've enabled communities to pursue their own unique visions and aspirations while creating models for other communities around the country.

NCEI also produces technical tools to help communities address specific growth challenges. For example, more than 17,000 printed copies of *Protecting Water Resources with Higher Density Development* and *Protecting Water Resources with Smart Growth* have been distributed. These reports help communities understand the impacts that density can have on water quality and identify some of the best tools for reducing them. NCEI's assistance was also extended to states through the launch of a Governors' Institute on Community Design. This partnership, which grew out of a similar initiative launched 20 years ago for mayors, provides state officials with the information they need to lead on growth issues.



NCEI's smart growth expertise is now widely recognized. As an indicator, we are often asked to work on standards that will shape smart growth policies and practices around the country and the world. For example, we have recently contributed to standards for school sitings and road design. And working with U.S. Green Building Council, we just helped complete a new rating system for Green Neighborhoods.

Each year NCEI also announces the National Awards for Smart Growth. By recognizing accomplishments, we are identifying models that can help other communities pursue their own smart growth goals.

Promoting Environmental Management Systems

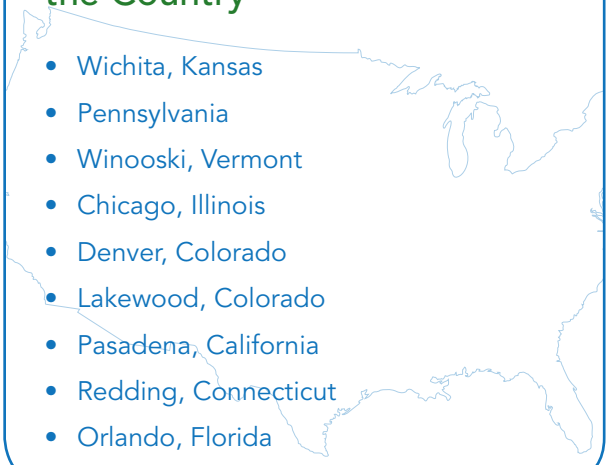
One of the leading tools for managing environmental issues more strategically is an environmental management system (EMS). Increasingly, businesses, government agencies, and other organizations are finding these tools provide a comprehensive framework for reducing environmental impacts and increasing operating efficiency.

In 1999, EPA issued a position statement in support of EMSs. This statement was the first in a series of actions that EPA has taken to promote EMSs, such as making EMSs part of the criteria for membership in Performance Track. In 2005, NCEI led EPA in updating its EMS position to reaffirm support of these important tools. In addition, we launched a research project to examine how financial incentives are used by investment, insurance, and other finance-related industries to promote EMS use and the influence they might have on increasing EMS use in the future.

NCEI's support of EMS was also evident in its work with specific industry sectors. For example, we are currently in the midst of a multi-year effort to develop and implement EMSs at port facilities. These tools are still relatively new to ports. The industry's focus on EMSs comes at an opportune time, as ports look for strategic ways to enhance security and expand their operations to accommodate increased trade and globalization.

National Awards for Smart Growth

Recognizing Progress Around the Country



- Wichita, Kansas
- Pennsylvania
- Winooski, Vermont
- Chicago, Illinois
- Denver, Colorado
- Lakewood, Colorado
- Pasadena, California
- Redding, Connecticut
- Orlando, Florida

Seeking Environmental Gains Through "Lean" Manufacturing

Our growing partnerships with industry revealed another opportunity for environmental improvement— "lean" manufacturing. "Lean" is a widely-used business strategy for cutting costs and improving competitiveness by eliminating waste in the production process. While increased efficiency is the primary driver behind lean, NCEI recognized how lean techniques can open the door to environmental improvement. In 2006, we issued a "Lean and Environment Toolkit" to help companies recognize and maximize the environmental benefits of lean. To help raise awareness among manufacturers, we have developed working relationships with organizations such as the Association for Manufacturing Excellence and the Department of Commerce's Manufacturing Extension Partnership, as well as manufacturing-oriented programs in the states and EPA. For example, EPA's Green Suppliers Network is using lean tools we developed to help companies work with their suppliers on waste minimization and process improvements. We are also working with Performance Track companies to publicize their successes in linking environmental and business goals through lean.

While many NCEI efforts focus on supporting voluntary environmental stewardship, we also understand the importance of enhancing how regulatory programs can protect our environment. Working with others who design and operate regulatory programs, we are looking for ways to improve results and public accountability while increasing flexibility and predictability for the regulated community.

A Performance-Based Regulatory System

Testing Flexible Permits

Each year, EPA and state agencies issue thousands of permits to control air emissions from many diverse sources. In an effort to make the process less burdensome and more effective, we have worked with the national air program to pilot test flexible air permits. These permits can take different forms, but in general they allow facilities to make certain operational changes more rapidly while meeting all environmental standards. For example, companies that agree to a fixed cap on their overall air emissions can make operational changes that would otherwise require a permit modification. This saves the company time and money with no increase in overall emissions. In many cases, emissions are reduced due to the incentive companies have to create room under the cap and allow for future expansion.

The lessons learned from these pilots are now being reflected in the national rules on air permitting. Some of these rules have already taken effect; further changes will be proposed in the near future. If past experience holds true, facilities across the country will be able to operate more efficiently while the environment benefits as well.

Another strategy for improving permitting is to combine numerous requirements into a single permit. Most large facilities have a wide variety of environmental impacts in different media (i.e., air, water, land). Current practice in the United States regulates these impacts separately, often with multiple permits even within one medium. Some countries are moving toward the use of "integrated" permits which provide a more comprehensive approach to controlling overall emissions while addressing a wider range of impacts. NCEI is leading a study of integrated permitting in the United Kingdom. The results, which are being summarized now, are expected to lead to recommendations for how we might use this approach to improve permitting in the United States.

Offering Regulatory Incentives for Environmental Improvement

In an effort to motivate more facilities to become environmental leaders, we worked to create additional incentives for EPA's flagship leadership program, Performance Track. In 2005, NCEI met with the Agency's national waste and water programs to discuss additional incentives that might be offered to top performing facilities. This year, we issued a rule that will reduce their regulatory burden under the Resource Conservation and Recovery Act. This rule allows certain facilities that generate, treat, store, or dispose of hazardous waste to reduce the frequency of self-inspections in some areas from once per day or week to once per month. We estimate this single action could collectively save Performance Track facilities more than three-quarters of a million dollars a year.

Three Performance Track members—a Baxter Healthcare facility in Arkansas and 3M facilities in Nevada and Texas—also benefited from the flexible permits described above. Currently, these permits are only available on a pilot basis, and based on their proven track record, EPA gives preference to Performance Track members in selecting its pilot candidates.

Considering All the Options

Technology-based standards for controlling pollution are an essential tool for protecting public health and the environment. But sometimes technology isn't the best option. For example, over the past two years, we worked with other parts of EPA, several industry sectors, states, and environmental groups on reducing mercury emissions from steel mills. Rather than relying on unproven and expensive technology, we focused on removing the source of the mercury—the mercury-containing light switches in older cars that are crushed and melted during steel recycling. This alternative approach required working with the affected industries and stakeholders to understand their concerns and the incentives that would be important for gaining their support of a voluntary approach to recovering the switches earlier in the process. While this collaboration was neither fast nor easy, ultimately it paid off in a program that will provide better environmental protection than would have been possible through conventional regulation.

Addressing the Needs of Small Business

Finding a better way to regulate thousands of small businesses has driven our interest—and state interest—in an innovative program first tested by the state of Massachusetts. Known as the Environmental Results Program, or ERP, it uses an integrated system of compliance assistance, self-certification procedures, and statistically based performance measurement to provide a more efficient and less burdensome alternative to conventional permitting. NCEI has provided leadership in helping other states learn about and develop their own ERP programs. Sixteen states now use ERP to improve environmental performance across 10 different small business sectors. Evidence of the increasing interest in this approach was seen in 2006 when a number of states came together to create their own ERP consortium.

Supporting Regulatory Innovation in States

Recognizing that states are often in the best position to see what's working and what might be improved, NCEI runs a national grant program to support state environmental innovation. Since inception in 2002, the State Innovation Grant Program has awarded nearly $5 million for 28 projects in 23 states to support innovations related to environmental permitting. Many of these states have used their grants to develop ERPs or environmental leadership programs that complement EPA's National Environmental Performance Track. Others have explored how incorporating EMS into permits can improve results. Projects initiated by states in the first rounds of the State Innovation Grant Competition are now coming to completion and are showing very promising results. In Delaware, for example, an ERP for the auto body repair sector increased compliance rates for this small business sector by nearly 20 percent. Similarly, an innovative approach to stormwater permitting in Arizona allowed the state to begin to address a two-fold increase in permit applications from developers while making the process less costly for the state and providing a substantially reduced application review time for the applicants. Arizona accomplished this by streamlining the permit application process with a Web-based portal, enhanced with an automated analysis of state geographic information.

State Innovation Grants 2005-2006

- Arizona
- Georgia
- Indiana
- Kentucky
- Louisiana
- Massachusetts
- Nevada
- New Hampshire
- New Jersey
- Rhode Island
- Virginia
- Washington

A Culture of Creative Environmental Problem-Solving

As EPA's champion for innovation, NCEI works in a variety of ways to support and promote new methods of achieving environmental goals. As the previous sections highlight, many of those innovations are developed in partnership with outside partners. However, NCEI also works to create a culture of environmental problem-solving within EPA.

Strengthening Decision-Making

With a number of national programs in Washington, D.C., and 10 regional offices around the country, EPA has many opportunities to pursue innovative approaches to environmental protection. Several times a year, NCEI brings the Agency's senior career leadership together to share results and discuss common innovation challenges and priorities. This dialogue clears the way for progress on prescient issues and also provides the EPA Administrator with a valuable resource for assisting with policy development and analysis. For example, in 2006, EPA's Innovation Action Council (IAC), as it is known, focused on identifying innovations that could be helpful in cleaning up diesel emissions, addressing environmental impacts of agriculture, and achieving greater energy efficiency. The ideas generated from those discussions will be informing the action EPA takes in each area. The IAC also provides a valuable forum for addressing innovation issues with states, which have representatives at the table. In 2005, for example, we worked with states on a process for expediting EPA decision-making when they approach the Agency with novel ideas. And in 2006, we joined several states and the Council for Excellence in Government in hosting a national symposium on innovation and results for state and federal environmental agency personnel.

Promoting Collaboration

One trait that is common to many innovations is collaboration by multiple parties. Collaboration on shared objectives enables people to bring more resources, experience, and expertise to bear than would otherwise be available, enriching the final outcome. Today's increasingly complex environmental challenges underscore the need for collaboration as well as innovation. To that end, NCEI provides collaborative problem-solving resources to our colleagues in other parts of EPA. These resources are shared through a newly established Collaboration Practitioner's Network that enables staff to share information and experiences with each other. To further recognize the importance of collaboration, in 2006, NCEI worked to establish a new EPA award to honor those that demonstrate collaborative skills. As a result of these and other efforts, NCEI was also asked to represent EPA on a federal interagency task force charged with implementing an Executive Order on Cooperative Conservation that, as the name suggests, recognizes the importance of working effectively with others to achieve environmental goals. Much of this work builds upon NCEI's expertise on public involvement in environmental protection. NCEI continues to be recognized as a leader in providing public involvement tools and information.

Enhancing Partnership Programs

As the preceding example acknowledges, EPA is increasingly relying on collaborative partnerships to accomplish our mission. Often these collaborations occur through partnership programs that offer benefits to members who want to work with EPA on shared interests, such as improving energy efficiency and reducing waste. These programs can be a highly useful tool for achieving environmental results and a strong complement to regulatory programs. Today, EPA offers membership in more than 50 national partnership programs and more than 20 at the regional level, and NCEI plays an important role in coordinating them for the Agency. We have developed training and guidelines to help programs enhance the design, measurement, and marketing of partnership programs. To enhance information sharing, we also launched a partnership program network within EPA that enables programs to learn from one another and discuss common issues.

Building Evaluation Skills

Evaluating environmental programs and developing sound measures of performance are essential to continuously improving results. As we explore innovative approaches to environmental protection, NCEI has emerged as a leader in promoting evaluation and performance measurement within EPA and across the federal government. Internally, we support an annual competition whereby programs apply for assistance in conducting evaluations and developing performance measures. Over the past two years, NCEI has also provided training on evaluation and performance measurement to nearly 1,700 managers and staff. Our expertise in this area is now recognized among the federal family, so much so that we have been asked to assist with training for some of the federal government's most demanding evaluators in the Office of Management and Budget. NCEI also has been instrumental in establishing a federal Environmental Evaluation Network that brings agencies together to share information and tools on how to better assess the results of environmental programs.

Looking Ahead

Innovation is now a guiding principle at EPA. This is evident in EPA's Strategic Plan, in the Administrator's Action Plan, and in the many examples of creative environmental problem-solving that can be found around the Agency. These examples include a community-based program for reducing toxic pollution at the local level; smart growth initiatives for addressing air and water quality; life-cycle analyses aimed at eliminating waste and conserving natural resources; new research to inform our understanding of sustainability; and the "greening" of EPA's own buildings and operations.

One of NCEI's key roles is to support EPA programs and regions as they pursue innovative approaches for improving environmental results. So what have we learned in that role that can enhance future innovations? How do we improve EPA's ability to craft creative solutions to today's environmental challenges? Our experiences, to date, have yielded a number of important lessons. They include:

- Being realistic about the time and resources required. Many successful innovations at EPA have taken 5-10 years to move from the initial idea stage to a mainstream business practice.
- Finding ways to work across organizational boundaries. Some promising ideas do not have a natural home at EPA, which is still largely organized around specific environmental media. Addressing multi-media challenges requires looking across the Agency and bringing relevant resources together for collaborative problem-solving.
- Committing to the full innovation cycle. New ideas generally follow a predictable pattern—initial testing at a small scale; some form of evaluation that results in refinement (and in some cases, a whole new concept); and broader application of those concepts that prove successful. Innovation is a process—one that requires strategic planning, management, and support at every stage.

For more information about NCEI, please visit www.epa.gov/innovation.

Highlighting lessons learned is just one way NCEI supports our fellow innovators around EPA. Looking ahead, we will continue to provide leadership in a number of other areas that are just as important to EPA's long term innovation success. They include:

- Promoting collaboration as a vital innovation skill. Working with others brings more resources, experiences and perspectives to solving environmental challenges. Using a number of tools, NCEI will support the Agency in effectively designing and managing collaborative initiatives.
- Engaging senior management on cross-cutting issues. Today's environmental challenges are often complex, multi-media, and involve multiple stakeholders. Through EPA's Innovation Action Council, NCEI will work with EPA's senior leaders to explore innovative approaches, to set priorities, and to assure timely, informed decision-making.
- Tracking and measuring results from innovative initiatives. Measuring results enables you to see how well an innovation is working and to then make any necessary improvements—a necessary feedback loop when trying something new. NCEI will continue to offer training and other tools to strengthen EPA's measurement and evaluation skills.

As we begin our fifth year, the mission of NCEI has never seemed more exciting. From state capitals to board rooms to civic meetings, we see a growing number of individuals and organizations that share our interest in innovative approaches for improving environmental results. We look forward to collaborating with committed partners on strategies that can lead the nation to a stronger system of environmental protection and a safer, cleaner, more economically vibrant future.


NCEI
NATIONAL CENTER FOR
ENVIRONMENTAL INNOVATION

United States
Environmental Protection Agency
(1807-T)
Washington, DC 20460

Official Business
Penalty for Private Use $300

EPA-100-R-07-006
May 2007
www.epa.gov/innovation