Environmental Innovation

Portfolio

Strategic Approaches for Leading Change

UNITED STATES • ENVIRONMENTAL PROTECTION AGENCY

Preface

The U.S. Environmental Protection Agency created a National Center for Environmental Innovation to bring creativity to bear on solving pressing environmental problems. Our long-term goals are to foster a performance-oriented regulatory system, promote environmental stewardship behavior, and create a culture of creative problem-solving.

In pursuing the Center's mission, we recognize the challenge State and federal environmental managers face in finding effective new approaches to achieve environmental results while robustly operating today's regulatory programs. The good news is that the last decade has seen an unprecedented level of creative thinking and experimentation in State and local government and at EPA. The paradox is that the resulting expansion of available approaches has made it more difficult for State and federal managers to identify those strategies relevant to their particular priorities.

This Environmental Innovation Portfolio was prepared to help overcome that barrier by: 1) categorizing the types of strategies that environmental agencies can use to reap better results; 2) highlighting promising projects as examples of approaches that can be adopted or adapted; and 3) promoting networking among people working on similar problems who can benefit from shared experiences.

Our hope is that the Portfolio will help you take advantage of the wealth of experience of your fellow travelers in the quest for increasingly effective environmental protection strategies. We look forward to continuing our partnership with you in that journey, and in continuously improving our methods for sharing our collective experience along the way.

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Introduction

As an environmental agency executive, you know that our system of environmental protection is in transition. More and more, State and federal agencies are trying non-traditional approaches to:

- Solve increasingly complex problems not easily addressed by conventional regulatory solutions.
- Harness better information and technology for environmental gains.
- Move beyond the limitations of single media approaches.
- Encourage environmental stewardship to improve environmental performance and redefine business relationships.
- Accomplish more in the face of budget constraints.

Agency leaders recognize that it is no longer possible to simply implement traditional programs and that it is necessary to identify the most pressing environmental concerns and apply available tools to solve them.

The Purpose of This Portfolio

In response to this challenge, federal and State agencies have developed many innovative strategies, ranging from changes in specific programs to changes in organizational systems and culture. There has been no easy way, however, for other innovators to access and take of advantage of this body of experience.

The Portfolio highlights a broad array of projects and programs that are underway in States and EPA to enhance public agencies' productivity, drive environmental performance improvement, and tackle complex environmental problems.

Therefore, this "Innovation Portfolio" has been developed as a quick navigational guide to the expanding variety of innovative strategies and practices available to public environmental agencies. The Portfolio highlights a broad array of projects and programs that are underway in States and the U.S. Environmental Protection Agency (EPA) to enhance public agencies' productivity, drive environmental performance improvement, and tackle complex environmental problems. Targeting State and federal environmental executives as the primary audience, the

document helps you efficiently sort through the myriad of "good ideas" and locate those most relevant to you. Anyone interested in creative strategies can use the document to stimulate new thinking and identify specific project opportunities.

The document groups innovative approaches into seven descriptive categories, or "change areas" for improved environmental performance. A quick scan of the Portfolio will reveal innovation opportunities relevant to priorities in your organization. Once you identify an area of interest, descriptions of innovative approaches, accompanied by a few illustrative examples, will help you access ideas and experiences from other organizations.

Numerous examples of specific innovative practices, projects, and programs developed by State agencies, EPA, and partnerships illustrate promising "real-world" activities that can be adopted or adapted in your organization. From the expansive collections of innovations available, we selected examples that have been used by environmental agencies to address a core agency function and that have experienced a degree of success.

Seven Change Areas for Improving Environmental Performance

1. **Setting Strategic Direction and Priorities**
   - —Planning
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Leading Change in Your Organization

In addition to the challenge of finding the most appropriate strategy for solving a particular problem, today's public sector environmental managers have the responsibility—and opportunity—to create an organizational climate conducive to innovative approaches that supplement and enhance traditional environmental management activities. Modeling and creating space for "innovativeness" and aligning organizational systems to support development and implementation of new approaches are key aspects of this broader leadership challenge. The following strategies have proven effective at creating an innovation-friendly organization:

- **Define strategic goals as outcomes, not activities.** Defining outcomes allows individuals and organizations to develop creative and innovative solutions to environmental problems.
- **Ask questions that encourage creativity.** Start by asking the right questions: What is the environmental problem we are trying to solve? Who cares about this problem and might partner to meet shared goals? What are the tools and practices available for problem solving? Can performance goals provide flexibility in meeting established requirements?
- **Facilitate horizontal and vertical information flow.** Non-conventional flows of information create space for new perspectives and enable employees to connect new ideas to needs. Involving employees from day-to-day program operations brings front-line experience to change efforts, helping to ensure effective and durable solutions.
- **Encourage collaboration.** Collaborative problem-solving, which engages diverse participant perspectives, is key to crafting innovative solutions to specific environmental challenges.
- **Recognize and reward innovation.** Effectively motivating individuals is critical to developing and successfully applying new practices and tools to environmental protection.

Setting Strategic Direction and Priorities

Planning ✹ *Measurement and Indicators*

The need for strategic planning and measurement processes has risen as agencies grapple with complex, cross-media environmental challenges not easily addressed through conventional regulatory programs. Innovative practices are enabling agencies to improve decision-making, focus resources on priority needs, measure progress, communicate results, and continually improve environmental management efforts.

Planning

Agencies are increasingly recognizing the importance of strategic planning to enhance the productivity of public resources. Improved planning processes are helping agencies: 1) target resources where they are needed most and identify activities for disinvestment; 2) establish timelines to address priority problems in a practical manner; and 3) communicate desired outcomes and measures to internal and external stakeholders. Planning can be applied at various levels, targeting agency-wide, sector-focused, or media-specific activities. Efforts to weave strategic planning into the organizational fabric of agencies are linking strategic direction with budgeting, program execution, and performance measurement. Adopting an ongoing management process for aligning organizational activities with strategic priorities significantly increases the productivity and impact of planning. Through environmental agreements, such as Performance Partnership Agreements, States and EPA are working to align planning and priority-setting activities to leverage broader impacts and to clarify roles and accountability. Agency managers can use innovative practices to bring planning to life, identifying strategic priorities and aligning programs, initiatives, and resources to achieve results.

Compliance Team Planning Process—Indiana

Incorporates agency-wide, holistic compliance and enforcement planning into the Performance Partnership Agreement through the creation of a team of senior managers representing several media divisions and regions. (http://www.in.gov/idem/enppa/jointplanningworksharing.html)

Planning Partnerships—Utah

Coordinates planning efforts between the Utah Department of Environmental Quality and U.S. EPA Region 8 throughout the National Environmental Performance Partnership System (NEPPS) and with 12 local health departments to develop an Environmental Service Delivery Plan. (http://www.eq.state.ut.us/references/planning/)

Measurement and Indicators

Public agencies are improving performance measurement, enabling better informed priority setting and decision-making. Significant progress is being made in developing indicators and performance measures that shed light on: 1) environmental quality outcomes at various geographic levels (e.g., watershed, State, regional, national); 2) environmental performance of specific sources and sectors; and 3) the implementation status and effectiveness of agency environmental improvement programs. Progress is also being made in developing innovative practices and tools for managing, sharing, and communicating performance measures and indicators. Practices in this area help agency managers better assess environmental quality and performance outcomes, making it possible to better target programmatic and policy interventions and to evaluate their effectiveness.

Environmental Indicators—U.S. EPA

Provides a framework for States and U.S. EPA regions to measure and report geographically scalable information on environmental conditions and trends to help construct a robust decision support framework and the reporting of environmental progress in a comprehensive manner to the public. (http://www.epa.gov/indicators/)

King County Measuring for Results—Washington

Publishes an annual report to share environmental goals, progress, and results with the public; indicators focus on measurement of agency program outcomes. (http://dnr.metrokc.gov/dnrp/performance/index.htm)

Improving Agency Service Delivery

Inspections and Enforcement ✹ *Permitting* ✹ *Data Utilization and Information Management* ✹ *Public Education, Outreach, and Engagement*

Pressures grow each year to improve the quality and cost-effectiveness of environmental agency service delivery. Innovative practices enable agencies to improve their core functions, minimizing time and resource requirements while maintaining or improving environmental outcomes. These efforts are resulting in better service to partners and customers, while freeing resources to address additional environmental priorities.

Inspections and Enforcement

Environmental agencies are improving the efficiency and effectiveness of compliance assurance activities. Innovative practices focus on: 1) tailoring compliance oversight approaches to risk-based priorities; 2) changing the way inspections are carried out; and 3) developing alternatives to inspections. Moving away from a one-size-fits-all approach, agencies are matching facility or sector compliance rate and risk profiles with the appropriate level of inspection, reporting and monitoring, and compliance assistance. Multimedia facility inspections are reducing the time and cost of onsite inspections. Agencies are also reducing the inspection resources devoted to high-performing facilities by allowing facility self-auditing and self-reporting as an alternative to conventional inspections. Agency managers can use innovative practices to better target and enhance the effectiveness of compliance assurance resources.

Self-Auditing and Reporting—Rhode Island

Allows certain high-performing industrial facilities to pursue self-auditing and self-reporting to reduce the frequency of inspections undertaken by the Narragansett Bay Commission. (http://www.epa.gov/projectxl/nbc/index.htm)

Sector-Focused Compliance Assistance—U.S. EPA

Through a mixture of compliance assistance and compliance incentives, EPA worked with the largest trade association for industrial bakers to reduce or eliminate leaks of ozone-depleting substances used in refrigeration equipment. (http://www.epa.gov/Compliance/civil/programs/caa/bakery/)

Permitting

Agencies are applying business management tools to reduce permit lead times, errors, and program costs. Environmental permitting programs are sometimes the focus of stakeholder frustration due to permitting backlogs, long lead times, costs, and uncertainty. State and local permitting authorities are streamlining air, water, and waste permitting activities in creative ways. Efforts center on two areas: 1) improving internal agency permitting processes; and 2) shifting away from media-specific permitting for individual facilities. Some agencies are applying business improvement techniques such as Six Sigma and lean manufacturing to analyze and drive improvement in their permitting processes. Agency managers can apply innovative permitting and process improvement practices to streamline permitting programs and reduce permitting backlogs and turn-around times.

Lean Air Permitting Process—Iowa

Uses "lean" rapid improvement methods developed in the manufacturing sector to systematically identify and eliminate unneeded steps and redundant activities in the permitting process, while fostering continuous improvement and employee involvement. (http://www.iowadnr.com/air/prof/kaizen/kaizen.html)

Environmental Results Program—Massachusetts, Rhode Island, and Florida

Implements a multimedia, sector-based regulatory approach, targeting sectors with large numbers of small sources, as an alternative to facility-specific State permits with industry-wide environmental performance standards and annual self-certifications of compliance. (http://www.mass.gov/dep/erp, http://www.dep.state.fl.us/waste/categories/hazardous/pages/autocert.htm, http://www.state.ri.us/dem/programs/benviron/assist/index.htm)

Data Utilization and Information Management

New information management systems are allowing States and EPA to improve environmental program management and decision-making. Advances in information management are enabling agencies to: 1) access and analyze current and historical data; 2) share and aggregate data across jurisdictions; 3) present data in formats that support improved decision-making; 4) collect data electronically in a streamlined manner; and 5) use information technology to provide new and better services. For example, implementation of electronic information exchange mechanisms between facilities and agencies improves data quality and reduces administrative burden. Many States are enhancing their information technology systems and are connecting to the State-EPA Exchange Network, improving

information flows and data sharing. In addition, innovative geographic information integration is empowering planning processes around the country. Agency managers can use innovative information management practices to greatly enhance the value of information that is currently collected—to better inform decision-making, clarify external communications, and reduce the burden of data collection and management.

communication around important environmental challenges and to solicit input and support on agency initiatives; and 2) establishing effective channels for engaging with public inquiries, comments, and concerns. Agency managers can enhance the durability of agency decisions and initiatives through effective public engagement, and can strengthen public support through responsiveness to questions and concerns.

Electronic Discharge Monitoring Reports—Michigan

Automates discharge monitoring reports for NPDES facilities to complete, sign, submit, edit, and re-submit "eDMR" forms online. (https://secure1.state.mi.us/e2rs/skin/main/FrmGuest.aspx)

Smart Growth INDEX—States and U.S. EPA

Simulates alternative land use and transportation scenarios using GIS sketch models to incorporate smart growth principles into planning processes. (http://www.epa.gov/smartgrowth/topics/sg_index.htm)

Pollution Complaint Response—Indiana

Coordinates an agency-wide, multimedia response to citizen inquiries and complaints using Web-based information, enabling the agency to reduce costs and increase public trust. (http://www.in.gov/idem/pollutioncomplaints/)

Ford Good Neighbor Dialogue—Illinois

Brings together stakeholders, academics, and agency representatives in a collaborative process to periodically discuss a large manufacturing facility's environmental management and performance. (http://www.delta-institute.org/pollprev/ford.php)

Public Education, Outreach, and Engagement

Numerous States are pioneering collaborative stakeholder involvement processes to improve the quality and acceptability of environmental improvement initiative outcomes. Environmental agencies are building trust and understanding—which enables behavior change—among stakeholder groups through communication, involvement, and responsiveness. Innovative practices are: 1) bringing together diverse stakeholders in creative forums to enhance

Enhancing Regulatory Outcomes

Permit Flexibility ✹ *Pollutant Trading* ✹ *Small Business Assistance Programs*

States and EPA are developing innovative practices to facilitate improved environmental performance outcomes and regulatory compliance at lower overall cost. Market-based approaches provide flexibility that enables regulated entities to direct resources to least-cost opportunities for meeting requirements. Practices in this area are improving communication between public agencies and regulated entities, while focusing collective attention on performance results.

Permit Flexibility

States, in partnership with EPA, are developing alternative approaches to permitting that encourage improved environmental performance and enhance business competitiveness. These innovative practices address concerns among the regulated community related to the time, cost, and certainty associated with obtaining and operating under conventional air, water, and waste permits. Innovative permitting practices typically work in the context of existing applicable requirements. For instance, innovative permitting practices: 1) focus attention on a facility's actual environmental performance results; 2) reduce the frequency of reporting where a facility is well under applicable limits; 3) allow a facility to make operational changes through a streamlined process; and 4) move away from facility-based to general permits. Agency managers can use flexible permitting practices to address industry requests for increased operational flexibility while maintaining and enhancing environmental protections.

Watershed-Based Stormwater Permits—Michigan

Establishes a voluntary watershed-based NPDES general permit for Municipal Separate Storm Sewer Systems (MS4s) to encourage stormwater management on a watershed basis; includes a discharge elimination plan, public education and participation, and pollution prevention measures. (http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3716-24366--,00.htm)

MACT Rule for Pharmaceuticals —U.S. EPA

Provides industry the option of meeting air toxics requirements by installing new air emission control equipment or by meeting an alternative, pollution prevention, performance-based standard that shifts the focus to improving production processes. (http://www.epa.gov/ttn/atw/pharma/pharmpg.html)

Pollutant Trading

States and EPA regions are using pollutant trading to reduce the cost of complying with permitted emission and effluent discharge levels. Pollutant trading programs create a market in which sources that reduce pollutants below required levels are allowed to sell their excess emission reduction credits to sources where it may be more expensive to reduce pollution to required levels. Trading systems create opportunities to reduce pollution at lower cost and at a more rapid pace than conventional permitting systems. Trading programs can also be designed to encourage participation (and emissions reductions) from sources that may not be required to reduce pollutant levels, such as non-point agricultural sources. Trading programs can be implemented at a range of levels, from inter-plant trading to regional trading, and for a wide variety of air and water pollutants. Agency managers can use trading systems in certain situations to lower the cost of pollutant reductions and to achieve more environmental improvement faster.

Long Island Sound Nutrient Trading—Connecticut

Reduces nitrogen loads in Long Island Sound using a watershed permit for all wastewater treatment plants. Sources discharging less than their annual limit receive credits for overcontrol and facilities that exceed their limit must purchase nitrogen discharge credits. (http://www.dep.state.ct.us/wtr/lis/lisindex.htm)

RECLAIM—California

Establishes facility-wide emissions limits for refineries, power plants, and other large stationary sources of NO_x and SO_x in the Los Angeles area. Each year, emissions limits are reduced and sources can buy or sell emissions credits to meet permitted levels. (http://www.aqmd.gov/reclaim/reclaim.html)

Small Business Assistance Programs

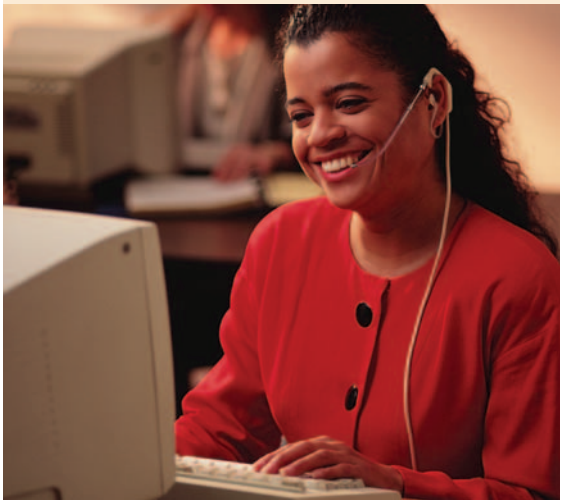
States and EPA are deploying a range of innovative practices and tools to support small businesses in understanding and complying with regulatory obligations and in continually improving environmental performance. Many small businesses do not have environmental managers; in those that do, the managers wear several functional hats, limiting their ability to develop and maintain sophisticated environmental and compliance management systems. Common innovative practices and tools include: 1) guidebooks and materials that clearly and concisely articulate requirements and environmental management opportunities; 2) technical assistance and hotlines that assist small businesses in addressing environmental needs; and 3) regulatory and programmatic approaches that simplify compliance obligations for small businesses. Agency managers can use innovative practices in this area to improve small business compliance rates and environmental performance, while reducing their overall environmental management costs.

Practical Guide to Environmental Management Systems for Small Business—U.S. EPA

Provides practical information and a step-by-step guide for small businesses on how to organize their environmental management responsibilities in a simple, productive, and cost-effective way. (http://www.smallbiz-enviroweb.org/html/pdf/EM_Guide0902.pdf)

Small Business Hotline and Assistance Centers—States and U.S. EPA

Provides direct assistance for small businesses on a number of environmental topics, both general and program-specific. Numerous compliance assistance documents have been developed to assist with specific environmental compliance and performance needs. (http://www.smallbiz-enviroweb.org/sba/sbpra2002_eparesources.html)



Supporting Superior Environmental Performance

Leadership Programs ✹ Challenge Partnerships ✹ Sector-Based Performance Strategies ✹ Environmental Management Systems

Innovative practices seek to build on the foundation provided by the environmental regulatory framework, providing incentives for environmental performance above required levels and forging collaborative relationships with volunteering organizations.

Leadership Programs

Environmental "leadership programs" are an important model for encouraging and rewarding "beyond compliance" environmental performance among the regulated community. Voluntary leadership programs typically establish criteria—such as implementation of an environmental management system (EMS), a track record of sound environmental performance, commitments to improve future performance—that regulated organizations must meet to gain entry. Participating organizations receive access to a variety of benefits such as: 1) public recognition; 2) regulatory incentives designed to reduce the organizations' compliance costs; and 3) access to information or technical assistance designed to facilitate environmental improvement. Several programs rely on a "tiered" approach that links increasing benefits to increasing levels of performance or commitments. Efforts are underway to link and align leadership programs at the State and national levels to improve consistency and strengthen benefits. Agency managers can encourage enhanced environmental performance and reduce the compliance cost to high-performing facilities through the deployment of leadership programs and associated incentives.

National Environmental Performance Track Program—U.S. EPA

Recognizes facilities that consistently meet legal requirements, implement an effective EMS, and make commitments to improving future environmental performance beyond required levels. Performance Track provides various incentives to participating facilities, such as technical assistance and regulatory flexibility. (http://www.epa.gov/performancetrack/)

Clean Texas Program—Texas

Provides member facilities with various State regulatory incentives if they maintain a high-quality EMS, pollution prevention program, and compliance record. The Clean Texas Program works in conjunction with EPA's National Performance Track Program. (http://www.tnrcc.state.tx.us/exec/sbea/cleantx/)

Challenge Partnerships

Voluntary challenge partnerships can motivate environmental performance in new areas or beyond levels required by law without requiring time-consuming or expensive regulatory action. These programs recognize voluntary environmental improvement actions in targeted areas, such as reducing water use or emissions of certain pollutants. Participating companies typically receive public relations benefits associated with recognition of their improvement actions. Some challenge partnerships also provide tools and technical assistance to support organizations in reaching established challenge goals. Voluntary challenge partnerships can target specific industry sectors, or be open to broader participation. Challenge partnerships can also create peer pressure for participation and environmental improvement. Agency managers can use challenge partnerships to communicate environmental improvement priorities to the regulated community and to motivate cost-effective performance improvement.

STEP-UP Program—Maine

The Maine Smart Tracks for Exceptional Performers and Upward Performers (STEP-UP Program) offers recognition and other incentives to businesses interested in implementing sustainable practices. (http://www.maine.gov/dep/oc/stepup/)

WasteWise Program—U.S. EPA

Encourages partners to design solid waste reduction programs and provides technical assistance, information, and recognition to participating organizations. (http://www.epa.gov/wastewise/)

Sector-Based Performance Strategies

Sector-based strategies create an opportunity for regulators and sector representatives to collaboratively remove factors that constrain environmental performance improvement and develop approaches and tools that encourage continual performance improvement within the sector. Organizations within a particular industry or service sector often face common environmental challenges and opportunities that can differ from those faced by other sectors. States and EPA are working with many sectors to: 1) address sector-specific environmental problems; and 2) develop environmental management tools, such as EMS guides, that can help enhance environmental performance in the sector. Agency managers can address priority environmental challenges in their jurisdiction by working collaboratively with relevant industry sectors through an existing sector-based program or by launching a new sector-based initiative.

Sector Strategies Program—U.S. EPA

Convenes stakeholders in government and the private sector to work together to achieve industry-wide environmental gains through innovative actions in 12 manufacturing and service sectors. (http://www.epa.gov/sectors/)

Cleaner Production Challenge—Washington

Helps companies in the aerospace parts manufacturing, and plating and circuit board manufacturing industries reduce the amount of water used, wastewater produced, and hazardous sludge generated by offering onsite technical assistance, employee training, vendor workshops, and peer exchanges. (http://www.pprc.org/cpc/index.htm)

Environmental Management Systems

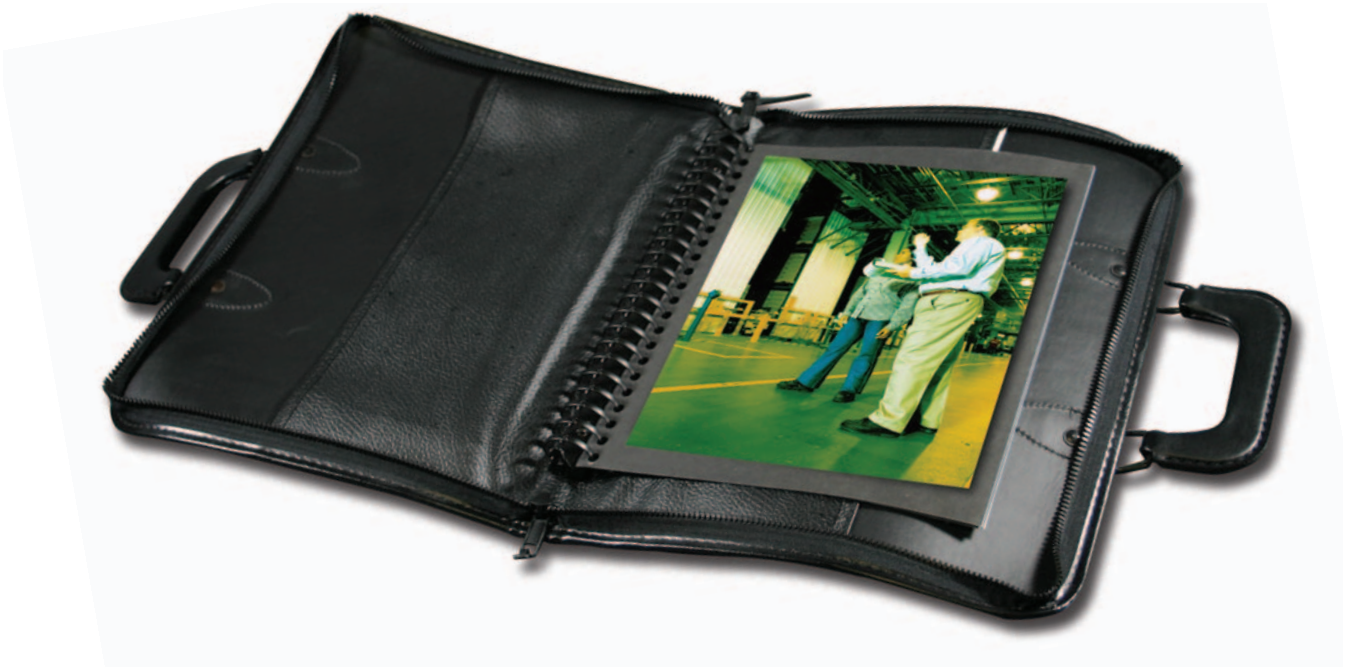
States and EPA have been actively promoting the widespread use of EMSs. EMSs provide organizations of all types with a structured approach for managing environmental and regulatory responsibilities to improve overall environmental performance, including areas not subject to regulation such as resource conservation and energy efficiency. EMSs can also help organizations integrate all these environmental considerations, and get better results, by establishing a continuous process of checking to make sure environmental goals are met, and responding if problems occur. From a business perspective, they can often help make organizations more efficient and more competitive and help address other important issues such as security at key facilities. EMSs are not a substitute for strong regulatory and enforcement programs, but rather complement them. EMSs can indicate opportunities for environmental agencies to streamline regulations, and can be used to support compliance assistance, monitoring, and enforcement.

PEER Centers—U.S. EPA

The Public Entity EMS Resource (PEER) Initiative provides a broad array of information and tools to help public entities (primarily local governments) understand and adopt EMSs for their operations. (http://www.peercenter.net)

Hospitals and Healthcare—U.S. EPA

Encourages the health care industry in U.S. EPA Region 2 to move beyond compliance through the use of EMSs. U.S. EPA Region 2, in collaboration with hospitals, advocacy groups, and trade associations, has developed an EMS template for the industry to better understand its environmental impacts and associated regulations. (http://www.epa.gov/region02/healthcare)



Promoting Environmental Sustainability

Green Building ✹ Green Purchasing ✹ Green Process and Product Design ✹ Product Collections, Take-backs, and Recycling ✹ Climate Change

Communities are increasingly interested in reducing the environmental footprint of economic activities and are looking to public agencies to encourage sustainable behaviors. Agencies are implementing sustainability initiatives internally and are encouraging other organizations and companies to adopt similar practices. Innovative sustainability practices are targeting buildings and property development, production processes, products, and waste generation to cost-effectively lower the material requirements, energy needs, and environmental risk of economic activity.

Green Building

Green building practices are reducing environmental impacts by influencing design, construction, and deconstruction choices. Innovative practices are promoting a variety of sustainable building techniques, such as use of green building materials, energy and water-efficient design, and demolition material reuse and recycling. Other innovative practices are taking a broader perspective by facilitating sustainable design at the neighborhood or community level. Innovative green building practices are: 1) disseminating information on green building techniques; 2) developing tools to facilitate green design choices; and 3) leveraging government's ability to lead by example through its building and construction choices. Agency managers can use these techniques to address specific waste, energy, or water challenges, and to complement broader efforts to encourage environmentally sustainable behaviors.

Building Deconstruction and Reuse—Florida

Coordinates the designation of valuable materials from building disassembly for reuse in a community organization building expansion, reducing landfilling and saving resources. (http://www.deconstructioninstitute.com/)

Green Communities Program —U.S. EPA Region 3

Extends access to tools, technical assistance, and training to integrate environmental goals with economic and social goals applicable to urban, suburban, and rural communities. (http://www.epa.gov/greenkit/)

Green Purchasing

Government agencies are stimulating demand and developing markets for environmentally preferable production products and services using their purchasing power. Public agencies are: 1) changing their own procurement practices; 2) organizing purchasing alliances to further leverage buying power; and 3) increasing access to information regarding environmental attributes of products and services. Agency managers can use innovative practices to increase the availability of environmentally preferable products and to encourage other organizations to purchase them.

Environmentally Preferable Purchasing—Washington

Uses procurement guidelines that integrate environmental impacts and life cycle assessment to stimulate demand for green goods and services. (http://www.metrokc.gov/procure/green/)

Green Power Purchasing—U.S. EPA

Establishes a green energy purchasing cooperative and recognizes green energy buyer leaders to promote renewable energy generation and reduce the cost differential of green energy. (http://www.epa.gov/greenpower/buygreenpower/guide.htm)

Green Process and Product Design

Environmental agencies can influence business process and product design decisions that improve environmental outcomes. Innovative practices frequently: 1) target specific product constituents, such as toxic chemicals, for pollution prevention, waste minimization, and resource conservation; 2) partner directly with companies or industry associations, particularly in the product design and development phase, offering design advice and incentives to adopt green processes and products; 3) support research into environmentally preferable substances and processes; and 4) provide technical assistance and basic tools to small businesses. Agency managers can use innovative practices to help businesses understand the full (and often hidden) costs of process and product design choices.

Industrial Ecology—New Jersey and New York

Uses an industrial ecology framework (examining uses and flows of materials and energy in products) to recommend pollution prevention strategies for five toxic chemicals contaminating New York/New Jersey Harbor. (http://www.nyas.org/programs/harbor.asp)

Sustainable Futures Initiative —U.S. EPA

Applies a structured pollution prevention framework during product development to reduce risk and costs of future processes and products. (http://www.epa.gov/opptintr/newchems/sustainablefutures.htm)

Product Collections, Take-backs, and Recycling

Agencies are employing innovative practices to keep toxic substances, and products containing them, from being landfilled or improperly discarded. Innovative practices, such as collection events and take back systems, are being used to address the logistical challenge of collecting dispersed, used products and wastes. For example, many jurisdictions have programs to collect scrap tires, used motor oil, and other automotive product waste. Efforts are growing to expand collection of used consumer electronic goods. Agencies are supplementing targeted waste collection activities with efforts to repair, demanufacture, and/or recycle the products, often teaming with private sector partners. Agency managers can use product collection efforts to mitigate the environmental and human health impacts of specific products or product constituents until more environmentally preferable designs emerge.

Waste Tires to Heating Fuel—Missouri

Turns scrap tires into tire-derived fuel that combined with coal; provides fuel for the University of Missouri at a fuel cost savings of $100,000 per year and with reduced stack emissions. (http://www.dnr.state.mo.us/magazine/1999_spring/resource-honor-roll.htm)

Consumer Electronics Recycling—Massachusetts

Promotes consumer electronics reuse and recycling using a four-pronged plan including market development, collection infrastructure, statewide recycling contracts, and regulatory reform to take cathode ray tubes off the hazardous waste list. (http://www.mass.gov/dep/recycle/crt/crthome.htm)

Climate Change

Public agencies are taking steps to reduce greenhouse gas (GHG) emissions while improving energy efficiency and economic performance. Public agencies are increasingly realizing that many GHG reduction efforts have additional benefits, such as reducing criteria pollutant emissions associated with energy use and combustion activities. Although addressing climate change issues can involve multi-national cooperation, efforts on a smaller scale can add up to big results. Public agencies are pursuing innovative practices that include: 1) developing GHG emission inventories; 2) establishing and committing to GHG reduction goals and targets; and 3) developing action plans to achieve these goals. Agencies are also implementing specific GHG reduction projects with or without a link to broader planning. Agency managers can use innovative practices to assess the profile of GHG emissions in their jurisdiction and to collaboratively plan an appropriate response strategy.

Greenhouse Gas Action Plan—New Jersey

Commits to reduce GHG emissions to 3.5 percent below 1990 levels (20 million tons), targeting five areas to reach the goal: energy conservation; pollution prevention; technology improvements; recycling and waste management; and resource protection. (http://www.state.nj.us/dep/dsr/gcc/gcc.htm)

Carbon Sequestration—Mississippi and Tennessee

Sequesters carbon in enhanced landscapes through public-private partnerships for ecosystem restoration and reforestation in the lower Mississippi Valley. (http://www.usbcsd.org/lowermississippi.htm)

Leveraging Partnerships for Environmental Protection

Community-based Environmental Partnerships ✹ Government-Industry Partnerships ✹ Inter-Governmental Partnerships

At times, traditional regulatory and programmatic remedies are insufficient to resolve an environmental problem. Effective solutions might require the participation of multiple actors, some of whom are not easily reached through conventional approaches. Innovative, collaborative problem-solving and partnership models are enabling environmental agencies to tackle such complex environmental problems. Successful partnerships distribute the challenge of finding solutions, enlisting partners' energies and resources to achieve mutually desired outcomes. Common partnership models include community-based environmental partnerships (CBEPs), government-industry partnerships, and inter-governmental partnerships.

Community-Based Environmental Partnerships

Environmental partnerships are enabling communities to face complex environmental challenges that necessitate behavior change on a scale that cannot easily be secured when a public environmental agency acts alone. CBEP models typically focus on problems that: 1) require behavior change among multiple actors, often including individuals and households; and 2) are targeted in a specific geographic area. Targeted problems include reducing the effects of toxic substances on human health and ecosystems, improving indoor air quality, and improving the quality of life in urban areas. These partnerships often attempt to leverage existing community-based organizations to engage in collaborative problem-solving and to spur broad-based behavior change. Outreach is a key element of this model, although incentives can supplement education efforts. Agency managers can offer support to groups pursuing CBEPs as a means to encourage greater local participation and ownership of environmental improvement efforts.

Neighborhood Contamination Reduction—South Carolina

Enlists numerous community organizations and local businesses to support education and outreach to reduce community exposure to lead and other hazardous substances as part of the Charleston-North Charleston Community-Based Environmental Partnership (CBEP). (http://www.epa.gov/region4/programs/cbep/charleston.html)

Omaha Asthma Alliance—Nebraska

Created a coalition to lessen the impact of asthma in the Omaha Metropolitan area through the development of a strategic plan that addresses Alliance development, professional education/training, public and patient education, data gathering and tracking, and advocacy. (http://www.lungnebraska.org/whatwedo/aalliance.asp)

Government-Industry Partnerships

Partnerships among government agencies and specific companies or industry coalitions can offer a low-cost and more inclusive approach to improving compliance rates or achieving desired performance outcomes. While significant environmental performance improvement has been achieved through regulatory approaches, opportunities exist in many sectors to improve compliance rates and to enhance environmental performance beyond regulatory minimums. Government-industry partnership models can include several elements, such as: 1) research or joint technology development or testing; 2) education and outreach; 3) technical assistance; 4) regulatory or financial incentives; and 5) public challenges and commitments. Trade associations and other business organizations can play an important role by lowering the transaction costs for interactions between environmental agencies and individual businesses. Agency managers can use government-industry partnership models, or piggyback on existing partnerships, to work collaboratively with industry sectors to address specific environmental challenges.

Sustainable Environment for Quality of Life—North Carolina and South Carolina

Establishes an integrated environmental initiative for the 15-county metropolitan Charlotte region in North and South Carolina involving elected officials, local government staff, business and industry groups, economic development groups, and environmental stakeholder groups to work toward viable solutions to regional growth. (http://www.seql.org)

Businesses for the Bay—Chesapeake Bay Region

Engages State and local government agencies with local businesses to target watershed pollution prevention through voluntary commitments and business-to-business mentoring. (http://www.chesapeakebay.net/b4bay.htm)

Photo

Inter-Governmental Partnerships

Inter-governmental partnerships are enhancing the effectiveness of public agency efforts to address complex environmental challenges. These challenges often involve diverse issue areas, such as public health, natural resource management, land use, transportation, and infrastructure. Jurisdiction over these dimensions typically resides in multiple agencies and organizations, making integrated solutions difficult without coordination. In addition, some environmental problems are better suited to a regional approach that crosses county or State lines. Inter-governmental partnerships can enable public agencies to: 1) coordinate effectively on solutions that require participation of multiple agencies; 2) pool resources to address shared problems; and 3) enhance political or economic clout for achieving a desired outcome. Agency managers can pursue inter-governmental partnerships to align other relevant government agencies in efforts to address strategic environmental priorities.

Western Regional Air Partnership—Western States, Tribes, and Federal Agencies

Supports efforts to improve air quality and visibility in Western States, providing policy and technical tools to enable States and tribes to implement the federal regional haze rule. (http://www.wrapair.org/)

Great Lakes Commission—U.S. EPA, Great Lakes States, Canada

Promotes the orderly, integrated, and comprehensive development, use, and conservation of the water and related natural resources of the Great Lakes basin and St. Lawrence River. (http://www.glc.org/)

Designing Targeted Geographic Solutions

Land Conservation and Growth Management ✸ *Brownfields* ✸ *Airshed Quality* ✸ *Watershed Quality*

Certain environmental challenges are strongly linked to place. They require integrated, multi-dimensional solutions that balance competing pressures for preserving or enhancing quality of life, economic development, public health, ecosystem integrity, and environmental quality. Innovative practices are helping public environmental agencies coordinate or participate in effective responses to such complex challenges as open space protection, land redevelopment, and maintenance of watershed and airshed quality.

Land Conservation and Growth Management

Public agencies are using innovative practices to conserve land and manage growth. Managing quality of life and ecosystem integrity is increasingly challenging as development encroaches on farmland, rural areas, and open space. Public agencies are responding by: 1) implementing open space preservation initiatives; and 2) promoting high density, low impact development. For example, States are purchasing land rights, negotiating conservation easements, and working with landowners to place lands in trust. Agencies are also developing increasingly sophisticated modeling tools to support managed growth without sacrificing traditional development goals. Education and outreach efforts are raising awareness of the costs of sprawl and loss of open space. Public environmental agency managers can play an important role—in collaboration with other partners—in mitigating land use patterns that undermine aspects of environmental quality that are critical to public health, economic development, quality of life, and ecosystem integrity.

Smart Growth Network—States and U.S. EPA

Promotes economic development that simultaneously fosters healthy communities, strong neighborhoods, and transportation choices by providing tools, resources, and information sharing. (http://www.smartgrowth.org)

Livable Communities Program—Minnesota

Creates a fund through the State legislature to invest in local communities to encourage affordable housing opportunities, investment in brownfields redevelopment, and promotion of efficient and connected development. (http://www.metrocouncil.org/services/livcomm.htm)

Brownfields

Numerous initiatives are underway to speed the redevelopment of vacant, underused, and potentially contaminated properties in urban and rural areas. Cleaning up and reinvesting in these "brownfields" properties both improves environmental quality and relieves development pressures on undeveloped, "greenfields" land. Agencies are improving their brownfields and voluntary cleanup programs to reduce factors that constrain contaminated site cleanup and reuse, such as uncertainty around liability and complexity of cleanup and redevelopment requirements. Agencies also use various economic tools, such as loan and tax incentives, usually supported by State and federal appropriations, to encourage contaminated site reuse by lowering the cost relative to greenfields development. Agency managers can use innovative practices in this area to expedite cleanup of contaminated sites and to rapidly return properties to productive use.

The Independent Cleanup Pathway —Oregon

Assists parties in cleaning up low and medium priority contaminated sites, under the state's Voluntary Cleanup Program, without full agency oversight, but with State approval and issuance of No Further Action determination upon completion. (http://www.deq.state.or.us/wmc/cleanup/icp-main.htm)

Tax Increment Financing— Alabama and Other States

Uses the incremental difference in tax revenues anticipated from growth in property taxes generated by cleanup and reuse to finance brownfields redevelopment. (http://www.epa.gov/swerosps/bf/bftaxinc.htm)

Airshed Quality

Addressing airshed quality and the associated public health impacts, particularly in urban nonattainment areas requires innovative approaches to meet guidelines while maintaining flexibility and promoting economic growth. Federal mandates for air quality, particularly ground-level ozone, have set challenging limits for many cities, especially those in nonattainment. To balance growth and support business, States are turning to innovative practices that reduce ozone creating pollutants. Incentives for business action promotes emission reductions and mitigates urban heat island effects. In addition, offset programs can enable continued economic development while ensuring overall pollution reductions are achieved. Further State-federal cooperative efforts provide flexibility in managing airsheds.

Atlantic Station—Georgia and U.S. EPA Region 4

Classifies a brownfields redevelopment on the former Atlantic Steel site for its myriad of design and development strategies to reduce transportation emissions as a Transportation Control Measure (TCM) within the State Implementation Plan (SIP). (http://www.atlanticstation.com/index.htm)

Ozone Flex Program—U.S. EPA Region 6 and States in Region 6

Memoranda of Agreement (MOAs) to outline specific, voluntary, locally tailored pollution control plans to reduce or maintain ozone levels below the one-hour standard, providing flexibility to meet federal mandates in areas that currently exceed the eight-hour standard. (http://www.epa.gov/earth1r6/6pd/air/pd-l/flex.htm)

Watershed Quality

Whereas water quality management has traditionally focused on permitted point sources and their discharges, innovative practices are taking a broader view by considering total watershed quality and examining solutions that simultaneously address water quality, water quantity, and habitat conditions. These efforts are supplementing point source, end-of-pipe regulatory activity by: 1) targeting nonpoint water pollution sources; 2) enabling pollution controls to be established where the most cost effective improvements can be achieved; and 3) building partnerships with a full range of interested parties. States are turning to market mechanisms such as upstream prevention measures to reduce or eliminate the need for plant site water treatment and wetlands mitigation banks to increase water quality and habitat preservation cost effectively. Agencies simultaneously are targeting diffuse, nonpoint sources such as stormwater, animal feedlots, and septic systems with voluntary incentive programs and encouraging more effective and widespread use of treated wastewater through targeted water recycling efforts.

New York City Watershed Protection—New York

Establishes watershed microbial contamination protection measures through land acquisition, land use alteration, and stringent watershed rules to avoid building a costly filtration plant for its drinking water. (http://www.ci.nyc.ny.us/html/dep/html/watershed.html)

Western Iowa Environmental Stewardship Program—Iowa

Brings together livestock producers and processors, federal and State regulators, and academics to implement voluntary, comprehensive nutrient management plans to reduce soil erosion and manure runoff. (http://www.sectorstar.org/state/Project.cfm?ProjectID=103&StatePic=IA)

For More Information

EPA's National Center for Environmental Innovation (NCEI) is dedicated to working with public environmental agency managers to connect innovative approaches to important organizational needs and environmental challenges. The Innovation Portfolio, as well as additional examples of innovative approaches that may be helpful for States, can be found on NCEI's website at:

www.epa.gov/innovation

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