

US EPA ARCHIVE DOCUMENT



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# SUPPORTING ENVIRONMENTAL INNOVATION IN THE STATES:

A Report on the Results  
from Projects Supported  
by the EPA State Innovation  
Grant Program



US EPA ARCHIVE DOCUMENT

**NCEI**  
NATIONAL CENTER FOR  
ENVIRONMENTAL INNOVATION  
[WWW.EPA.GOV/INNOVATION](http://WWW.EPA.GOV/INNOVATION)



## Principles from the State/EPA Innovations Agreement<sup>1</sup>

**Experimentation:** Innovation involves change, new ideas, experimentation and some risk of failure. Experiments that will help us achieve environmental goals in better ways are worth pursuing when success is clearly defined, costs are reasonable, and environmental and public health protections are maintained.

**Environmental Performance:** Innovations must seek more efficient and/or effective ways to achieve our environmental and programmatic goals, with the objective of achieving a cleaner, healthier environment and promoting sustainable ecosystems.

**Smarter Approaches:** To reinvent environmental regulation, regulator should seek creative ways to remedy environmental problems and improve the environmental protection systems, and be receptive to innovative, common sense approaches.

**Stakeholder Involvement:** Effective stakeholder involvement produces better innovation projects and catalyzes public support for new approaches. Stakeholders must have an opportunity for meaningful involvement in the design and evaluation of innovations. Stakeholders may include other state/local government agencies, the regulated community, citizen organizations, environmental groups, and individual members of the public. Stakeholder involvement should be appropriate to the type and complexity of the innovation proposal.

**Measuring and Verifying Results:** Innovation must be based on agreed-upon goals and objectives with results that can be reliably measured to enable regulators and stakeholders to monitor progress, analyze results, and respond appropriately.

**Accountability/Enforcement:** For innovations that can be implemented within the current regulatory framework, current systems of accountability and mechanisms of enforcement remain in place. For innovations that involve some degree of regulatory flexibility, innovators must be accountable to the public, both for alternative regulatory requirements that replace existing regulations and for meeting commitments that go beyond compliance with current requirements. Regulators will reserve full authority to enforce alternative regulatory requirements to ensure that public health and environmental protections are maintained, and must be willing to explore new approaches to establish accountability for beyond compliance commitments.

**State-EPA Partnership:** The States and EPA will promote innovations at all levels to increase the efficiency and effectiveness of environmental programs. We must work together in the design, testing, evaluation, and implementation of innovative ideas and program, utilizing each other's strengths to full advantage.

<sup>1</sup> [www.ecos.org/files/1426\\_file\\_Agreement.pdf](http://www.ecos.org/files/1426_file_Agreement.pdf)

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# Chapter 1:

## Introduction to EPA's State Innovation Grant Program

The U.S. Environmental Protection Agency's (EPA) National Center for Environmental Innovation (NCEI) has prepared this report to describe the results to date for projects funded under the EPA State Innovation Grant Program. EPA expects that the projects highlighted in this report will be of primary interest to state environmental agencies, who may wish to develop similar projects and build upon the successes and approaches highlighted here. This report may also be useful to the EPA Programs and Regions to help them identify additional opportunities for stimulating further innovation in permitting programs.

This chapter provides an overview of the State Innovation Grant Program, information on the program's goals and strategic target areas, a summary of awards to date, and a description of how the program meets EPA's accountability requirements. Chapter 2 provides a detailed description of the results of completed projects supported by State Innovation Grants, while Chapter 3 summarizes State Innovation Grants projects that are currently underway. Chapter 4 describes lessons learned and potential directions for the program.

### Program Overview and History

NCEI developed the State Innovation Grant Program as part of its implementation of the Agency's 2002 Innovation Strategy, *Innovating for Better Environmental Results: A Strategy to Guide the Next Generation of Innovation at EPA*.<sup>1</sup> The Strategy was developed by the EPA Innovation Action Council (IAC) to establish a management framework for its innovation activities, including the testing, evaluation, and diffusion of effective new environmental protection approaches. The strategy has four main elements:

1. Strengthen EPA's innovation partnerships with states and tribes.

2. Focus on priority environmental problems that demand innovative approaches.
3. Diversify environmental protection tools and approaches.
4. Foster a more "innovation-friendly" culture and management systems.

Experience from earlier pilot testing programs has demonstrated strong state leadership in developing creative new approaches that produced better environmental results or improved efficiency in government operations or for regulated entities. However, such efforts were significantly constrained by resource limitations. As a way to address the first element of EPA's Innovation Strategy—*strengthen[ing] EPA's innovation partnerships with states and tribes*—and help overcome state funding constraints, NCEI established the State Innovation Grant Program fund to state pilot projects. In announcing the new program, then EPA Administrator Christine Todd Whitman recognized the very significant role of the states as the front-line laboratory for testing new ideas and committed EPA support to continuing that tradition.

Since 2002, the program has completed six competition cycles and has awarded 38 assistance agreements to support state innovation projects.<sup>2</sup>

### Program Goals

Beginning with the initial 2002 competition, EPA set out to help states build on previous innovation experience that had largely been focused on improvements at individual facilities, and instead undertake more strategic innovation projects that promoted larger-scale models for "next generation" environmental protection. EPA's goal was to provide funding for seed projects that had potential to: 1) go beyond single facility

<sup>1</sup> EPA 100-R-02-002, available online at <http://www.epa.gov/opei/strategy>

<sup>2</sup> Detailed information about each of the competition cycles is available online at <http://www.epa.gov/innovation/stategrants/>



experiments to promote “systems-oriented” change; 2) provide better results from a program, process, or sector-wide innovation; 3) and promote integrated (cross-media) environmental management approaches with a high potential to be transferred to other states. Additionally, EPA wanted to use the State Innovation Grant Program to:

- Build more effective collaboration with states to identify areas ripe for innovation.
- Help state agencies identify operating cost efficiencies.
- Realize cost or time savings for regulated entities.
- Elicit the best state ideas through a competitive process.
- Build in measurement and evaluation essential to transferring the innovation.

## Strategic Theme and Targets for the Program

EPA selected “innovation in permitting” as the theme for the State Innovation Grant Program believing that intersection between regulation and practical implementation to be fertile ground for creative improvements. Under this theme, EPA identified three strategic target areas as the focus for State Innovation Grants funding: applications of the Environmental Results Program model (ERP); exploration of the use of Environmental Management Systems in the context of permitting (EMS); and later, state environmental leadership and recognition programs like EPA’s National Environmental Performance Track, many of which provide permit incentives.

### Environmental Results Program

The ERP model is an innovative approach to improving the environmental performance of various small business sectors and other groups with large numbers of small facilities. ERP is an integrated system of plain-lan-

guage compliance assistance that encourages pollution prevention, facility self-assessments and self-certification, and statistically-based performance measurement to guide a combination of random and targeted inspections to verify both facility-specific and sector-based performance. The approach was originally designed by the Massachusetts Department of Environmental Protection (MA DEP) to improve the environmental performance of the dry cleaner, photo processor, and printing sectors.<sup>3</sup> Based upon the documented evidence of performance improvements in Massachusetts’ early years of ERP, a favorable evaluation of the initiative by the National Academy of Public Administration, and in recognition of the significance of the environmental threat that can be posed by large groups of small pollution sources, the EPA has actively supported diffusion of ERP across the states since 2000. More information on ERP is available in the *ERP States Produce Results—2007 Report, States’ Experience Implementing the Environmental Results Program*.<sup>4</sup>

### Environmental Management Systems

EMS are a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. Most EMS are built on the “Plan, Do, Check, Act” model providing for a continual cycle of planning, implementing, reviewing, and improving the processes and actions that an organization undertakes to meet its business and environmental goals. Some states have initiated programs that incorporate EMS into permitting programs, and more are expected to do so in the future.

EPA’s EMS Strategy (*Strategy for Determining the Role of Environmental Management Systems in Regulatory Programs*) describes the issues and considerations of interest to EPA as the Agency explores whether and how EMS can play a role in its regulatory programs. EPA policy is to encourage the widespread use of EMS across a range of organizations and settings to improve environmental performance and compliance; promote pollution prevention through source reduction; and continual improvement. The Strategy also identifies a

<sup>3</sup> See <http://www.epa.gov/projectxl/massdep/index.htm> for more information about the original ERP designed by Massachusetts.

<sup>4</sup> The Executive Summary of the 2007 ERP Report is available online at [http://www.epa.gov/erp/erp\\_states.pdf](http://www.epa.gov/erp/erp_states.pdf).

number of policy ideas to test and the State Innovation Grant Program has been a mechanism for conducting tests of those ideas related to permitting. More information about EPA's interest in EMS is available online at <http://www.epa.gov/ems/index.htm>.

## National Environmental Performance Track Program

Performance Track is a partnership program that recognizes and rewards private and public facilities that demonstrate strong environmental performance beyond compliance requirements. It promotes a collaborative, performance-based leadership system for environmental protection in which superior environmental performers are acknowledged and treated differently than other regulated entities that are at or below a compliance threshold. Performance Track is designed to augment the existing regulatory system by creating additional incentives for facilities to achieve environmental results beyond those required by law. To qualify, facilities must have functioning environmental management systems (EMS), a track record of good compliance, a commitment to environmental improvements, and an active community interaction program. In return for their efforts and commitments, EPA recognizes Performance Track facilities as environmental leaders and offers regulatory and administrative flexibility that encourages them to continue working to improve their environmental performance. Performance track incentives are also designed to encourage other facilities to join the program and demonstrate their environmental leadership. A number of states that have similar performance-based environmental leadership programs in place are in the process of developing such programs, or are actively working with EPA to recognize and reward Performance Track members by cooperatively implementing Performance Track incentives in their state. Since 2005, the State Innovation Grant Program has helped support such state efforts. More information about Performance Track is available online at <http://www.epa.gov/performance-track/>.

These three strategic target areas can assist permitted entities address a wide range of permitted entities. Spe-

cifically, ERP tends to focus on entities with relatively little environmental expertise (often small businesses), and is primarily oriented toward helping those facilities come into compliance (although ERP also encourages pollution prevention and other best management practices). Environmental leadership programs focus on entities with more environmental expertise that have already achieved compliance, and these programs are intended to foster beyond-compliance performance. EMS helps facilities at any level to continually improve their performance and reduce their environmental impact, whether they are seeking to achieve compliance or go beyond compliance. Taken together, these types of innovative approaches funded by the Grant Program can be applied to a wide range of entities to encourage environmental performance improvements. The first two competitions for State Innovation Grants focused on ERP and EMS, while the most recent three rounds of competitions also included projects focused on Performance Track-like programs.

In addition to projects supporting these three strategic target areas, EPA has provided State Innovation Grants to a small number of exploratory projects related to the overall theme of innovation in permitting. These exploratory projects included two efforts designed to demonstrate watershed-based permitting approaches, and one project designed to achieve permit process streamlining through the application of information system innovation.

## Summary of Awards to Date

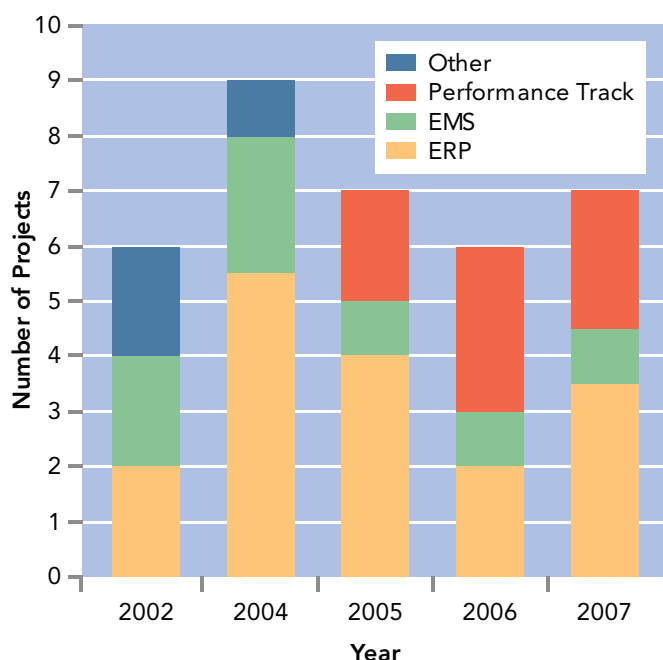
The State Innovation Grant program opened its first competition in 2002. There were subsequent solicitations in 2004, 2005, 2006, 2007, and 2008. This report will focus on the projects funded in the five competitions from 2002 through 2007 (at the time of this report three awards for projects from the 2008 competition are pending and the projects have not been initiated). There have been 35 project awards in the five competitions from 2002 to 2007 totaling almost \$6.7 million. The recipient states themselves contributed almost \$2.435 million in matching funds for these projects. The 35 projects funded to date include:



- 17 projects testing ERP.<sup>5</sup>
- 8 projects examining the use of EMS in permitting (one of these projects is a combination of EMS and ERP).
- 8 projects that create or enhance performance-based environmental leadership programs similar to Performance Track (one of these projects is a combination of ERP and an environmental leadership program).
- 2 projects that support testing of watershed-based permitting.
- One permit process streamlining project that used innovative information technology applications.

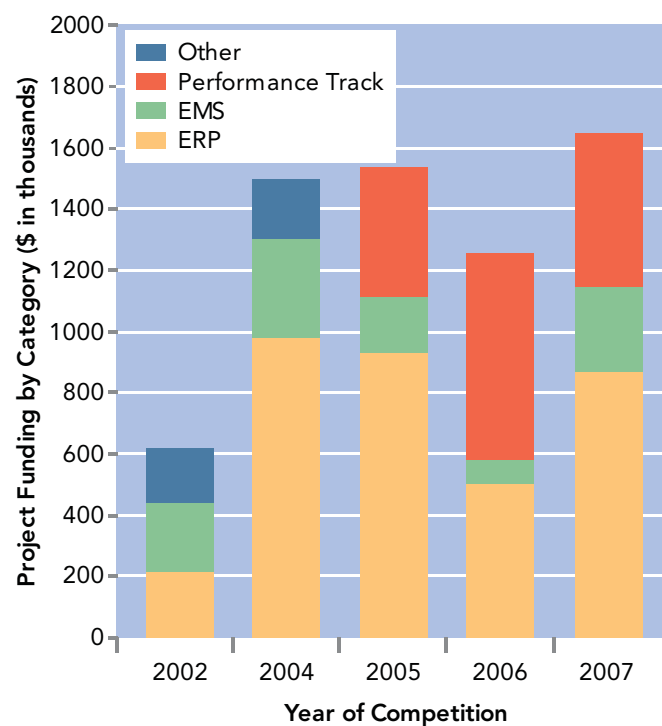
Figure 1-1 illustrates the distribution of projects by type through the five competition cycles within the strategic areas.

**Figure 1-1: Number of State Innovation Grant Projects, by Project Type**



Total funding for the first (pilot) State Innovation Grant competition in FY 2002 was \$617,500 funded across FY02 and FY03. The next four competitions that followed the pilot funded at approximately \$1.2–1.6 M annually. Figure 1-2 illustrates how the selection of projects in each cycle of competition translate to investment of EPA resources.

**Figure 1-2: State Innovation Grant Award Totals by Project Type**



A summary of the number of proposals submitted, and awards made for each of the competition years is provided in Table 1-1.

<sup>5</sup> This figure includes two projects that combined ERP with other types of innovations.

**Table 1-1. Summary of State Innovation Grant Competitions**

Competition Cycle (Fiscal Year)	Number of Proposals	Number of Projects Funded	Total Amount of Funding
2002*	29	6	\$0.618 M
2004	33	9	\$1.526 M
2005	26	7	\$1.528 M
2006	25	6	\$1.355 M
2007	17	7	\$1.644 M
<b>Total</b>	<b>130</b>	<b>35</b>	<b>\$6.671 M</b>

\* Three of the six awards selected in 2002 were actually funded in 2003.

Table 1-2 presents summary information about specific state awards for the five competition cycles from 2002–2007. Additional information on each project appears in later chapters.

**Table 1-2. Summary of State Innovation Grant Awards 2002–2007**

Competition Cycle (Fiscal Year)	State	Topic	Amount of Award
2002	MA	Watershed-based Permitting	\$100 K
2002	DE	Autobody ERP	\$117 K
2002	AZ	Streamlined Stormwater Permitting	\$79 K
2002	IL	Injection Well ERP	\$97 K
2002	TX	Strategically Directed Regulatory Structure	\$75 K
2002	CO	Whole-facility EMS	\$150 K
2004	VT	Underground Storage Tank ERP	\$200 K
2004	ME	Autobody/ Auto Repair ERP	\$152 K
2004	RI	Auto Salvage ERP	\$200 K
2004	MN	Concentrated Animal Feeding Operations (Agriculture) ERP	\$130 K
2004	MI	Dry Cleaner ERP	\$199 K
2004	WI	Printing Sector Combined ERP/EMS	\$215 K
2004	IN	Community EMS	\$125 K
2004	SC	EMS for Landfills	\$107 K
2004	WY	Watershed-based Permitting/Coalbed Methane Permitting	\$198 K
2005	MA	Common Performance Measures for ERP Programs	\$255 K
2005	VA	Underground Storage Tank ERP	\$250 K
2005	IN	Autobody Sector ERP	\$215 K
2005	NV	Drycleaner ERP	\$203 K
2005	WA	Industrial Footprint Approach	\$182 K
2005	NH	Environmental Performance Track	\$234 K

*continued on next page*

Table 1-2. Summary of State Innovation Grant Awards 2002–2007 (continued)

Competition Cycle (Fiscal Year)	State	Topic	Amount of Award
2005	KY	Environmental Performance Track	\$189 K
2006	RI	Underground Storage Tank ERP	\$250 K
2006	LA	ERP for the Oil and Gas Sector	\$250 K
2006	GA	EMS for the Textile Sector	\$80 K
2006	VA	Environmental Performance Track	\$225 K
2006	IN	Environmental Performance Track	\$225 K
2006	AZ	Environmental Performance Track	\$225 K
2007	ME	Parking Lot Stormwater ERP	\$300 K
2007	RI	Construction Stormwater ERP	\$200 K
2007	NY	ERP for Small Business Sectors	\$255 K
2007	KY	Compliance Assistance On-Ramp for State Performance Track	\$189 K
2007	TN	Stormwater Performance Track	\$200 K
2007	WI	Dairy Sector EMS	\$275 K
2007	WA	Sustainable Washington ERP/Performance Track	\$225 K

## Measurable Outcomes

Projects selected under the State Innovation Grant program are intended to be fully compliant with EPA's "Environmental Results under EPA Assistance Agreements" Policy to ensure accountability and the productive use of public dollars. The policy requires that all Agency competitions include a commitment to demonstrate results as a criterion for selection. Specifi-

cally, the policy requires that grant work plans contain 1) well-defined outputs, and, to the maximum extent practicable, well-defined outcomes; and 2) a description of how the project would support specific EPA Strategic Plan goal(s), objectives(s) and, where available, sub-objective(s). The State Innovation Grant Program requires that grant work plans include all of these elements.

# Chapter 2:

## Results of Completed State Innovation Grants Projects

**A**s of spring 2008, seven projects funded by the State Innovation Grant Program have been completed. These projects reflect a diverse range of topics within the competition area including two Environmental Results Programs for a small business sector, three projects designed to promote Environmental Management Systems, and two projects designed to develop innovative or streamlined permit approaches. The completed projects are:

### Environmental Results Programs (ERP) Projects

- **Delaware** Department of Natural Resources and Environmental Compliance's voluntary ERP for the auto body repair sector.
- **Maine** Department of Environmental Protection's voluntary ERP for the auto body repair sector in southern Maine.

### Environmental Management Systems (EMS) Projects

- **South Carolina** Department of Health and Environmental Control's project to facilitate adoption of EMS in its permit or enforcement programs for Resource Conservation and Recovery Act (RCRA) solid waste disposal facilities.
- **Colorado** Department of Public Health and the Environment's EMS Permit Pilot Project, which worked with four corporate partners to incorporate EMS as part of their environmental permits.
- **Texas** Commission on Environmental Quality's initiative to implement the state's Strategically Directed Regulatory Structure, which was designed to encourage innovative permitting activities and support innovative programs, including EMS, permitting activities, and incentives.

### Innovative and Streamlined Permit Projects

- **Arizona** Department of Environmental Quality's project to develop a Web-based Storm Water permit application system under the National Pollution Discharge Elimination System (NPDES).
- **Massachusetts** Department of Environmental Protection's watershed-based permit system for the Assabet River.

This chapter describes these seven completed State Innovation Grant projects, including background information, program development, and project outcomes. Note that the outcomes presented here are generally those reported by the states in their final project reports. EPA has not conducted a detailed, independent evaluation of any of these projects yet although, where EPA offers its own commentary or findings, the text so indicates. The chapter begins by describing the ERP projects, followed by EMS projects, and innovative/streamlined permit projects.

### Environmental Results Programs

ERP is an innovative approach to improving the environmental performance of business sectors that have large numbers of small facilities. ERP combines compliance assistance, self-certification, agency inspections, and statistically-based performance measurement to efficiently improve environmental results across typically small business sectors.<sup>6</sup> The steps involved in a typical ERP are illustrated in Figure 2-1.<sup>7</sup> Both states that have completed State Innovation Grant projects to develop ERPs, Delaware and Maine, have followed these steps. Delaware and Maine have also focused on the same sector—auto body shops—with the goal of improving their compliance and environmental performance.

<sup>6</sup> For more details on how ERP works, see "ERP States Produce Results - 2007 Report. States' Experience Implementing the Environmental Results Program Executive Summary," EPA100-R-07-007, May 2007. Available online at [http://www.epa.gov/erp/erp\\_states.pdf](http://www.epa.gov/erp/erp_states.pdf).

<sup>7</sup> Note that after states complete an ERP cycle, program staff often review changes in compliance rates, gather feedback from participants, and refine their ERP activities to improve program effectiveness. To date, the Delaware and Maine programs have not completed this step.

**Figure 2-1: Typical ERP Cycle**

**Step 1: Inventory.** Identify the myriad small facilities that are sources of pollution, many of which are often unknown to regulators.

**Step 2: Statistical Baseline Inspections.** Conduct random inspections to accurately measure existing environmental performance and focus outreach on the biggest problems.

**Step 3: Compliance Assistance.** Work with trade associations to create and provide plain-language, user-friendly assistance that improves compliance and promotes pollution prevention.

**Step 4: Self-Certification.** Facilities conduct self-assessments using a detailed checklist closely linked to assistance materials. Responsible officials certify to their facilities' environmental performance on each item. If necessary, they submit plans to return to compliance.

**Step 5: Targeted Follow-Up.** Identify potential problem facilities via certification analysis, and target them for inspections, correspondence or phone calls. Provide assistance and/or initiate enforcement, as needed.

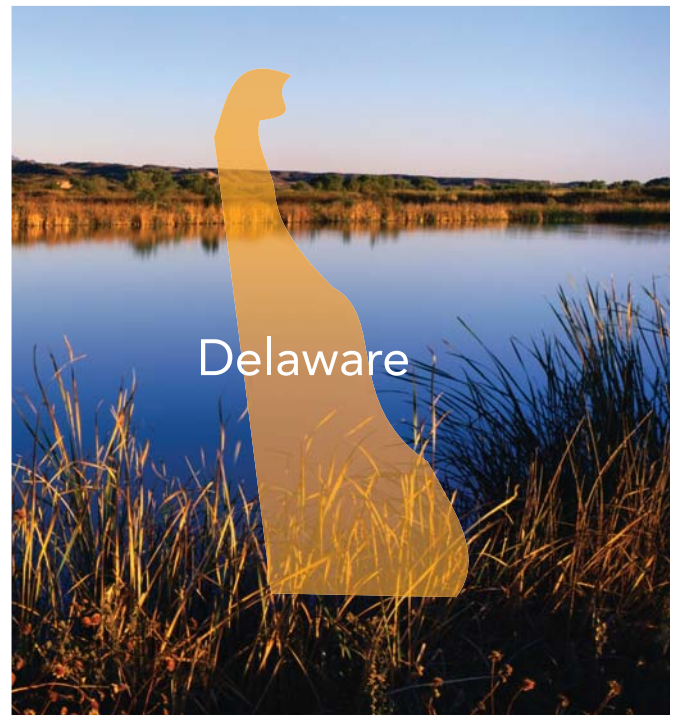
**Step 6: Statistical Post-Certification Inspections.** Conduct random inspections to accurately estimate performance changes and verify facility certifications.

**Step 7: Informed Decision-Making.** Assess performance data and consider whether to adjust compliance assistance or other strategies directed at the sector or, if sufficient progress has been made over time, target resources elsewhere.

## Delaware Environmental Results Program for the Auto Body Sector

### Background

The Delaware Department of Natural Resources and Environmental Control (DNREC) received a State Innovation Grant in early 2003 to undertake a statewide voluntary ERP for the auto body repair sector. DNREC targeted the auto body repair sector to address the substantial proportion of facilities in this sector that were not in compliance with permitting requirements. The Air Quality Management section of the DNREC had conducted preliminary research that determined that most auto body repair shops in the state had been operating illegally and/or without a permit. At the time the project started, Delaware had 152 auto body shops statewide, most of them small- and medium- sized shops. DNREC concluded that most facility operators at these shops were unaware of their environmental obligations. Unlike the larger corporately-owned chain shops, Delaware's small auto body repair facilities did not have the resources to hire environmental consultants to ensure their compliance with environmental laws. The sector was therefore an ideal candidate for a small business-focused ERP.







DNREC's overall goal in implementing this ERP was to improve environmental compliance among auto body repair shops. Delaware also hoped to achieve this improvement in compliance with a relatively small investment of state resources by using the ERP rather than its traditional regulatory approach. The traditional approach required a regulatory agency staff large enough to inspect every auto body repair shop on a regular basis, and required DNREC staff to spend time with each shop owner individually to inform and instruct them about permit compliance. In contrast, ERP's combination of compliance assistance, self-certification, and statistically-based sampling allowed for efficient use of a relatively small regulatory staff to conduct inspections and provide collective outreach and education through compliance assistance workbooks and workshops.

DNREC developed its ERP as a voluntary program, meaning that auto body repair shops were not required under law to participate in the program, although they are required to meet regulatory requirements. To encourage auto body shops to participate in ERP, DNREC developed a number of incentives, including: a simplified auto body-specific air permit application; a waived permit application fee (\$165); a period of amnesty for shops in non-compliance; free technical assistance and pollution prevention audits; and a Web-based ERP portal and electronic submission system for self-certification reporting. At the time DNREC began the ERP program, 104 of the 152 total shops in the state (68 percent) agreed to participate in the program. DNREC attributed this success rate to its focused outreach and compliance assistance efforts, plus the incentives provided for shop owners.

## Program Development and Implementation

DNREC began developing its ERP in March 2003. The state, using the assistance of a contractor with ERP expertise, undertook an intensive planning process to define how the ERP would work. DNREC also visited vocational schools that taught auto body repair techniques and consulted with Rhode Island on its auto body compliance assistance initiatives. As a result of their research, DNREC staff:

- Developed an inspection checklist to be used in preliminary ERP inspections.
- Identified a protocol for digitization of facility information received from ERP auto body repair shops.
- Developed a database to maintain location, permit, and compliance data for all of the auto body facilities in the state.

Under the terms of the grant, EPA required Delaware to demonstrate the beneficial effects of its auto body ERP. To accomplish this, DNREC assessed the change in compliance rates achieved through ERP by measuring the initial or "baseline" compliance rate and comparing it to the end-of-project compliance rate. To establish the baseline, DNREC inspected a statistically-based sample of 74 shops in 2003 and assessed their compliance with environmental requirements using the inspection checklist. In addition, the inspectors gathered information about other business practices, such as adoption of pollution prevention measures, which provide an indication of the shops' overall environmental performance. The indicators of how well each shop was meeting its environmental compliance requirements and adopting beneficial environmental practices are collectively termed Environmental Business Practice Indicators (EBPIs).

After conducting the baseline assessment, DNREC conducted a series of educational workshops to inform shops about environmental compliance requirements and voluntary best management practices that reduce the environmental impact of auto body repair shops. In addition, DNREC developed a workbook and other



materials explaining all applicable environmental requirements for the auto body sector in plain language. DNREC's workbook included information on air, water, and waste requirements, as well as voluntary pollution prevention, energy efficiency, and best management practices. The workbook was designed to educate facility owners and operators about all of the EBPIs that would be measured in on-site inspections and in self-certification forms (discussed below).

DNREC also provided shop owners and operators with self-certification forms which presented a series of questions designed to enable them to determine if they were in compliance with the environmental requirements covered by the ERP. If the owners/operators determined they were out of compliance in any area they were expected to fix the problem as soon as possible. If the shop could not address the issue before returning the self-certification form, the owner/operator was expected to submit a return-to-compliance plan stating how they planned to bring the shop into compliance and the timeframe for accomplishing this. In addition, all owners/operators signed a legally-binding certification that stated that the data they provided to DNREC was true.

Following this education and outreach process, facility owners/operators were allowed a period of several months to review the workbook, complete the self-certification form, and return it along with any applicable return-to-compliance plans to DNREC.

After this period, DNREC followed up with a sample of facilities to assess the extent to which the education and outreach process had improved compliance and environmental performance, as measured by the EBPIs. Over a one-month period, DNREC performed 47 random post-certification inspections of participating facilities.

## Project Outcomes

DNREC reported very positive results from this pilot ERP program for the auto body sector. These results included a significant improvement in compliance with environmental regulations among participating facilities. DNREC identified the following improvements

from its ERP pilot for the auto body sector:

- Compliance with the five air pollution control requirements measured increased by an average of 24 percentage points.
- Compliance with the one water pollution requirement measured increased by an average of 77 percentage points.
- Compliance with the four hazardous and universal waste management requirements measured increased by an average of 43 percent.
- The percentage of shops voluntarily undertaking eight specific pollution prevention and best management practices increased by an average of 20 percentage points.

Overall, across all indicators measured, Delaware found that shops increased compliance and performance by an average of 30 percentage points. In addition, DNREC found the program helped the agency improve its ability to monitor and track ongoing environmental progress through permits. Of the 103 auto body shops that participated in the ERP, 90 submitted an application for an air pollution permit—a requirement that most of the shops stated they did not know about prior to the ERP. Permits are important tools that enable state environmental agencies to monitor a facility's performance and ensure compliance with environmental regulations. Prior to the ERP, DNREC had not been aware that these 90 auto body shops needed permits.

Delaware reported that 18 percent of the participating facilities submitted return-to-compliance plans, indicating that they had one or more environmental violations when they submitted their self-certification forms. Since DNREC did not require shops that corrected environmental violations before they submitted the self-certification forms to complete a return-to-compliance plan, there may have been additional facilities that found and corrected compliance issues before submitting their self-certification forms to DNREC.

The improvements in environmental compliance and performance described above suggest a corresponding reduction in pollution from the participating auto body

shops, although DNREC did not undertake a direct measurement of reduction in effluents and discharges and waste.

Overall, DNREC found ERP to be a success, and the state began a second-round of facility self-certifications in summer of 2007. In addition to the anticipated continuation of the auto body ERP itself, several pollution-prevention efforts have grown out of the ERP and are being implemented across the state. For example, DNREC's Energy Office held a "bio-products" workshop in December 2005 to educate auto body shop owners and other interested facilities about ways to use more environmentally-friendly products, such as soy-based cleaning solutions and degreasers, in place of traditional cleaning products.

## Maine Environmental Results Program for the Auto Body Sector

### Background

The auto body sector in Maine is subject to federal and state environmental regulations pertaining to air, water, solid, and hazardous waste, however facilities in this sector generally lack an awareness of the environmental regulations that apply to them. The auto body sector in Southern Maine includes approximately 100 shops, comprised mostly of small to medium sized facilities that operate with a minimal commitment of resources for environmental compliance. In particular, the Maine Department of Environmental Protection (ME DEP) has determined that auto body shops are often out of compliance with air requirements. Air quality is of particular concern in southern Maine, where the counties of Cumberland, Sagadahoc, and York have historically not met national ambient air quality standards for ground-level ozone.<sup>8</sup> To address air pollution and compliance concerns posed by auto body shops in southern Maine, the ME DEP applied for and received a State Innovation Grant in 2004 to undertake a voluntary ERP for this sector.



### Program Development and Implementation

Maine's ERP included a multimedia approach that addressed all of the federal and state environmental regulations pertaining to the auto body sector. The ERP also encouraged facilities to go beyond compliance and incorporate voluntary best management practices (BMPs) and pollution prevention measures.

Maine's ERP included the following components:

- 1. Compliance Assistance:** ME DEP hosted a workshop to educate auto body facilities on environmental regulations and developed a plain language, multimedia compliance workbook for sector operators that covered all federal and state environmental regulations that apply to the auto body sector. The workbook also included BMPs and pollution prevention measures to encourage facilities to go beyond compliance.
- 2. Self-Certification:** The ME DEP developed a plain language, multimedia self-certification compliance checklist for the auto body sector that closely paralleled the workbook. The checklist was designed to allow facilities to self-identify where they were out of compliance, and fix any violations they found. If a facility was out of compliance and could not fix the violation immediately, it was instructed to submit a return-to-compliance plan that explained how the facility would return to compliance within 30 days.

<sup>8</sup> The entire state of Maine is now officially meeting the ground-level ozone federal national ambient air quality standards. Maine's Redesignations and Maintenance Plans request was published in the December 11, 2006 Federal Register.



ME DEP was able to achieve a 42 percent self-certification rate, and of the facilities that submitted self-certification forms, 81 percent of facilities initially identified that they were out of compliance with one or more requirements.

**3. Agency Inspections and Performance Measurement:** Using a statistically-based random design, ME DEP conducted baseline onsite assessments prior to compliance assistance and self-certification using a sector-specific pollution prevention checklist they had developed. These baseline assessments were conducted prior to compliance assistance and self-certification. The ME DEP also conducted statistically random post-certification assessments after compliance assistance and self-certification, and the two assessments were compared to determine the effect of the ERP. Maine's Auto Body ERP was a voluntary program. To encourage facilities to participate in the program, ME DEP developed several incentives available to all participants, including:

- A recognition system for Environmental Leaders (EL).
  - ELs received the official EL logo decal to display at their facility.
  - ELs were listed as participants on the ME DEP's ERP Web page.
- Use of ME DEP's Small Business Compliance Incentives Policy (SBCIP) for facilities that voluntarily reported that they were out of compliance.

- For violations that were not serious, small businesses had an opportunity to work with the ME DEP's small business technical assistance staff to solve environmental violations within 90 days without an enforcement action.

- Free technical assistance from the ME DEP.
- An opportunity to use compliance assistance and self-certification to identify and fix violations which otherwise could lead to enforcement actions if detected by an inspector.

## Project Outcomes

ME DEP's goals for the ERP were to promote pollution prevention concepts, increase public and industry awareness of environmental health concerns, and increase environmental compliance. In ME DEP's view, the project met each of these goals, as discussed below.

ME DEP found that the ERP workbook and other outreach methods successfully promoted pollution prevention concepts. Specifically, the ME DEP workbook included pollution prevention measures and ways to reduce operating costs, reduce waste disposal costs, protect the environment, improve worker health and safety, and project a positive image to customers. ME DEP also gave pollution prevention tips to facilities while conducting onsite baseline and post-certification assessments, as well as during the workshop. Finally, ME DEP conducted onsite visits after the post-certification assessments to help facilities implement pollution prevention practices. As an incentive to implement pollution prevention practices, the state gave away 10 LaserPaint™ devices to the facilities that implemented the largest number of pollution prevention practices. LaserPaint™ is an attachment for any make/model spray paint gun that maximizes paint transfer efficiency and therefore reduces air emissions from spray painting.

ME DEP worked to increase awareness of environmental health concerns by educating shops about these concerns through the workbook, workshop, and onsite visits. For example, during the workshop, ME DEP showed pictures of what ozone damage looks like, and explained health effects of ozone. ME DEP also ex-

plained that sanding dust can be harmful if heavy metals such as lead, chromium, cadmium are present.

ME DEP found that most auto body facilities were very receptive to the ERP. Owners and operators of the shops said that before participating in the ERP, they did not know what regulations applied to them, and thus they were very appreciative of the ME DEP's assistance. Many of the larger auto body facilities were pleased that ME DEP was visiting smaller auto body facilities as well as the larger ones, in order to level the playing field and assure that all facilities have to follow all of applicable regulations.

ME DEP measured the following changes in auto body shop compliance with environmental requirements:

- The overall rate of compliance improved by 10 percentage points.
- Compliance with hazardous waste requirements increased by an average of 3.7 percentage points.
- Compliance with a waste oil requirement increased by 3.4 percentage points.
- Compliance with a universal waste requirement increased by 52.5 percentage points.
- The number of shops undertaking voluntary pollution prevention and BMPs increased by an average of 11.6 percentage points.
- Compliance with air pollution requirements decreased by an average of 2.5 percentage points.

With regard to the slight decrease in the percentage of facilities meeting air pollution requirements, it is important to note that the average rate of compliance with these requirements was still high (ranging between 87.4 and 92.7 percent), even after this small decrease in the compliance rate. In this case, the fact that one or two shops fell out of compliance during the ERP cycle slightly reduced what was an overall very high compliance rate. It is interesting to note this relatively high compliance rate for air pollution requirements, in light of the fact that the project was initially motivated by a concern over air quality.

ME DEP hopes to continue the efforts it began with the State Innovation Grant by expanding the auto body ERP to additional counties or the entire state; developing a stormwater ERP; or developing a mandatory ERP, or a voluntary ERP with threat of regulation for those facilities that do not participate.

## Environmental Management Systems

Environmental Management Systems (EMS) are a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency. EMS provide organizations of all types with a structured system and approach for managing environmental and regulatory responsibilities to improve overall environmental performance and stewardship, including areas not subject to regulation such as product design, resource conservation, energy efficiency, and other sustainable practices. EMS can also facilitate the integration of the full scope of environmental considerations into the mission of the organization and improve environmental performance by establishing a continual process of checking to ensure environmental goals are set and met. The most common framework EMS use is the plan-do-check-act process, with the goal of continual improvement. A well-designed EMS includes procedures for taking corrective action if problems occur and encourages preventive action to avoid problems.<sup>9</sup>

Many companies across the country are implementing EMS to meet their environmental obligations and to enhance overall environmental performance. As more facilities invest time and money in these systems, they are challenging states to recognize and integrate EMS into the environmental regulatory framework. EPA recognized this challenge when it issued its *Strategy for Determining the Role of Environmental Management Systems in Regulatory Programs* in April 2004. This strategy document urged states to explore ways to incorporate EMS options into the permitting and regulatory structure. Through the State Innovation Grant program, EPA sought to partner with states to find out whether EMS could be used to improve the efficiency

<sup>9</sup> For more information on EMS, see <http://www.epa.gov/ems/index.html>.



and effectiveness of regulatory tools such as permitting. Three states, South Carolina, Colorado, and Texas, have completed State Innovation Grants-funded projects to incorporate EMS into their permitting programs.

## South Carolina's Initiative to Incorporate EMS into Permit Decisions

### Background

The South Carolina Department of Health and Environmental Control (DHEC) received a State Innovation Grant to explore the relationship between EMS and environmental permitting in 2004. While DHEC recognizes facilities with EMS through its voluntary environmental leadership program (South Carolina Environmental Excellence Program, or SCEEP), there are no regulatory benefits for having an EMS. Through the State Innovation Grant, DHEC had an opportunity to study ways in which a facility's EMS could be integrated into the regulatory framework. By conducting a comparative analysis of selected facilities' EMS and permits, the project sought to:

- Study how an EMS could improve the overall performance of a facility.
- Explore ways permit requirements could be integrated and streamlined based on an EMS.



- Determine how an EMS could ensure consistency in the development, implementation, and enforcement of a permit.
- Evaluate the potential benefits of incorporating EMS as an incentive for permitting options.

### Program Development and Implementation

DHEC first formed a cross-media project advisory team comprised of permitting, compliance and enforcement staff representing the major media programs (Air, Land, Water, and Laboratory Resources). This team provided assistance and advice throughout the implementation of the project.

The project involved a review of the permitted activities and the EMS of four participating facilities. The criteria for facility selection were: membership in SCEEP and/or the EPA Performance Track program; a fully implemented EMS; a good compliance record; types of permits; and willingness to participate in DHEC staff training. Each facility held multiple permits issued by DHEC including, air, NPDES, wastewater pretreatment, stormwater, and/or hazardous waste treatment, storage or disposal (TSD). The four facilities selected for participation in the project included a U.S. Air Force Base and three manufacturers which produce automotive belts, chemicals, and cement. Involvement of one of these facilities (the cement manufacturer) was later discontinued because it was determined that the facility did not have the types of permits that were initially targeted for study.

Working with the participating facilities, the project undertook the following major tasks:

1. Providing EMS training for Agency staff, and more intensive training for the project advisory team to increase awareness and understanding of the purpose and mechanics of an EMS.
2. Examining each facility's existing permits and its EMS to determine how an EMS can impact permit requirements by:

- (a) Providing possible incentives in permitting options.
  - (b) Streamlining administrative and/or other permit requirements.
  - (c) Improving consistency in how permits are written, monitored and enforced.
  - (d) Improving environmental performance and results in maintaining or going beyond compliance.
3. Determining ways in which specific permit requirements could be addressed, altered or consolidated through an EMS.
  4. Evaluating the potential to incorporate EMS into facility permits.

With the assistance of an EMS consultant, the project team conducted initial permit reviews. The team initially assessed the permits in light of the ISO 14001 EMS standard, and made general comparisons between the permit requirements and the EMS standard.<sup>10</sup> Then, the project team conducted site visits and analyzed facility permits and their EMS to characterize the overlapping regulatory and operational similarities between them.

## Project Outcomes

In general, DHEC found that although each facility was compliance-oriented, the use of an EMS assisted in tightening the compliance system function. The project also found that there is a good correlation between the facility's EMS and its permits, in that they both included similar management topics. The EMS provided the "road map" for the verification of permit and compliance management through the "plan-do-check-act" cycle of the EMS.

DHEC found that permits set the required standards, while the EMS provided the activities, steps, and details about how to meet the permit standards. DHEC concluded that while EMS are not a substitute for permits, they may allow for streamlining of certain permit requirements.



While there may be an opportunity to streamline permit requirements based on EMS, this permit streamlining process may not translate into administrative cost savings for permit writers, since EMS add components that require verification/confirmation as part of the permitting process. However, there may be administrative cost savings if EMS are used as a tool for inspectors to evaluate facility compliance. An inspector may not have to inspect to the same level or "depth" of a traditional facility inspection. For example, at the pre-inspection interview, some aspects of the inspection may be adequately covered by review of the facility's EMS. In addition, DHEC found that there may be an opportunity to allow facilities to provide self-certification for certain aspects of permits where it can be demonstrated that the EMS provides more details/safeguards for meeting the regulatory requirement.<sup>11</sup>

The project team assessed the possibility of reducing the frequency of inspections across media programs based upon a facility's EMS and past compliance record, *provided* the EMS was submitted for DHEC prior-review and the facility attested to the use of an independent third-party auditor. However, in order to pursue this opportunity, a commitment from the U.S. EPA is needed to provide flexibility to state media-specific regulatory programs to enable their annual grants/work plan commitments to incorporate EMS into consideration for the purpose of determining frequency of facility inspections.

<sup>10</sup> ISO stands for the International Organization for Standardization. ISO promotes the development and implementation of voluntary international standards. ISO 14000 refers to a series of voluntary standards in the environmental field. The ISO 14001 standard requires that a community or organization put in place and implement a series of practices and procedures that, when taken together, result in an EMS. For more information, see <http://www.epa.gov/owm/iso14001/isofaq.htm>.

<sup>11</sup> Note that the project focused on the role of the EMS, but did not specifically address the role of the EMS audit.



DHEC noted that one question that was not addressed by the project is a characterization of the universe of facilities in South Carolina that actually have EMS, and the correlation of compliance and enforcement histories for those facilities. The final project report recommended a future step for DHEC is to include a cross-media pilot study through the 2008 inspection schedules that would include for each inspection a report on three basic questions: 1) Does the facility have an EMS; and if so, 2) What type; and 3) Is it certified by an independent third-party auditor? This would provide information on the universe of facilities with EMS and would be valuable information as DHEC considers incorporating EMS into the regulatory framework. The project team did feel strongly that regardless of the type of EMS that a facility had, in order for the agency to recognize it, it was critical that it be independently audited and certified.

DHEC will continue to encourage regulated facilities to implement EMS through membership and recognition in SCEEP. In the past, facilities have encouraged DHEC to recognize EMS in its regulatory activities, and to offer incentives that encourage companies to develop and implement EMS. This study has provided valuable information about the relationship of EMS to the permitting process and, more importantly, the value of EMS to facilities in managing compliance obligations and enhancing environmental performance.

In reviewing this project, EPA identified several lessons that can be applied to EMS projects in the future. First, management support is crucial to exploring the use of EMS in the regulatory framework. Also, program staff must be trained to understand the role that EMS can play in the regulatory framework. In addition to training at the outset of the program, ongoing training is also needed to maintain staff awareness and address staff turnover. While training was not the primary focus of DHEC project initially, it quickly grew in importance as project staff realized the need for more information about EMS at the program staff level. While EMS have played a prominent role in the national dialogue on environmental performance—both by industry and by EPA program staff, e.g. permit engineers, inspectors, and enforcement staff who typically have the most in-

teraction with a facility on a day-to-day basis, tend not to be familiar with EMS or their potential to promote compliance and environmental performance.

EPA also found that the DHEC project suggests several examples where performance standards, in conjunction with an EMS, could supplant prescriptive operational controls, such as:

- RCRA training requirements.
- Emergency preparedness and response.
- NPDES nonconformity, corrective action, and preventive action.
- RCRA Waste Minimization Plan.
- Title V Air Permit Annual Compliance Certification.

The comparison of EMS and permits that DHEC completed indicates a strong potential for using performance standards in place of prescriptive operational controls. However, this cannot occur until there is a substantive culture change in how permits have been traditionally written. Furthermore, such a change would require support from EPA, since the state is federally authorized or delegated to administer and enforce the RCRA, Title V, and NPDES Storm Water programs and as such must maintain an “equivalent” and adequately enforced program.

EPA reviewed the project’s performance measures to assess the impact of the EMS on environmental performance for facilities participating in this project. Specific performance measures included improved environmental performance through waste reduction or waste avoidance, environmental condition indicators, pollution prevention and waste minimization opportunities, and environmental compliance indicators. By reviewing performance measure data and comparing it to when the facilities implemented their EMS, EPA found that there was not a strong relationship between implementing an EMS and improving environmental performance. Moreover, a review of facility compliance records showed that facilities participating in the project did have some minor compliance issues after the

implementation of their EMS. All of the facilities stated that the EMS assisted in strengthening the compliance management and enhanced the regulatory linkage with management practices. However, having an EMS did not guarantee compliance, and facilities still had some compliance situations that had not been prevented or identified by their EMS. The relationship between presence of an EMS and impact on environmental performance and compliance merits additional review and analysis in future EMS projects.

## Colorado EMS Permit Pilot Project

### Background

The Colorado Department of Public Health and Environment (DPHE) received a State Innovation Grant to develop an EMS Permit Pilot Program. The three-year pilot program was initiated to challenge the conventional approach to permitting. DPHE believed that, by using EMS to serve in place of regulated facilities' environmental permits, the project could address the environmental limitations of technology-based standards while reducing the regulatory burdens on business and industry. Early on in the project development, DPHE moved to developing a permit that integrated the facility's EMS with its permits, rather than attempting to substitute an EMS for a permit. The program involved the voluntary participation of four corporate partners from the aerospace, agricultural, and semi-conductor industry sectors.

DPHE initiated the pilot program to test whether a cross-media environmental permit incorporated into a regulated facility's EMS would produce greater environmental benefits and higher compliance rates compared to traditional media-specific permits. DPHE anticipated that EMS permits would result in reduced oversight of participating facilities, while granting them increased flexibility to meet environmental and production demands. If successful, the program would allow regulators to consider cross-media impacts and benefits in decision-making, and in doing so, become more efficient and able to leverage limited resources. DPHE expected that granting facilities the authority to



determine how best to meet their environmental goals would ultimately lead to increased innovation and integration of pollution prevention concepts. The Department also anticipated the program would foster greater involvement by community stakeholders and generate better information for the public and DPHE through annual external audits. Other goals of the program included:

- Identifying opportunities to use a participating facility's EMS to replace and/or augment DPHE's regulatory functions, including inspections, minor permit modifications, and compliance reporting.
- Achieving reductions in overall administrative burdens by consolidating all environmental permits into one permit and establishing a single point of contact at DPHE.
- Establishing provisions for stakeholder involvement and public participation throughout the EMS permitting process.

### Program Development and Implementation

The program was conceived and implemented by a cross-media team comprised of DPHE employees representing the air pollution, hazardous waste, water quality, radiation, and sustainability programs. DPHE team members invited stakeholders, including representatives from the regulated community, environmental and community organizations, and local and federal government entities to help develop the program. The first task of the broader stakeholder group was to promulgate the EMS Permit Pilot Program regulation in



accordance with the legislation passed by the Colorado legislature authorizing the program. Over the course of numerous meetings, stakeholders reached agreement on the specific components of the program established in the regulation, including: eligibility criteria for regulated facilities; requirements for permit applications, processing, issuance, and modification; public participation provisions; criteria for operational flexibility; requirements for continual improvement projects; and compliance monitoring and reporting requirements.

DPHE expected implementation of the program to involve developing and issuing facility-wide EMS permits to five facilities. DPHE carefully screened the five initial participants to ensure that each was considered an environmental leader within its respective industry.<sup>12</sup> DPHE arranged for third-party baseline assessments, which included measurement of existing environmental conditions and an EMS audit, to be conducted at each participating facility. Following the completion of the assessment, DPHE assisted facilities with developing or implementing their EMS.

Once the developed or modified EMS were in place, participating facilities and DPHE began the EMS permit application process. The EMS permit application form incorporated requirements from the state's air, water, and waste programs. Applicants identified requirements from their existing conventional permits and could add other applicable environmental requirements

for inclusion in their EMS permit. In addition, facilities were required to list their requests for operational flexibility, provide relevant data to allow DPHE and local agencies to perform equivalency determinations, propose continual improvement projects, and submit a compliance certification form. DPHE worked with each facility to prepare a Community Involvement and Communications Plan (CICP), another requirement of the permit application process. CICPs outlined the facility's approach for establishing effective communication with community stakeholders.

Upon completion of the EMS permit applications and CICPs, DPHE drafted and issued the EMS permits.<sup>13</sup> Participating facilities provided assistance to DPHE during the permitting process in a number of ways: identifying continual improvement projects; proposing operational methods and technologies to comply with regulatory requirements that also provide an incentive for pollution prevention; reviewing cross-media impacts of selected methods and/or technologies; convening an EMS Permit Program Advisory Group to provide feedback on the application and draft permit. DPHE developed specific environmental standards and work practices requirements for EMS permits, ensuring that these permits are considered equivalent to facilities' existing environmental permits. Prior to issuance of the draft or final EMS permits, the Department solicited inputs from stakeholders and conducted a public comment process as required by state law.

## Project Outcomes

DPHE's analysis of data over the course of the program on EMS performance and regulatory compliance reflected improvements in performance compared to the baseline environmental and compliance assessments. Follow-up assessments conducted by a third-party contractor at the conclusion of the pilot program document an overall increase in environmental performance across the four facilities. On average DPHE reported that participating facilities achieved a 15 percent reduction in emissions of air pollutants, a 27 percent reduction in hazardous wastes generated, a three percent

<sup>12</sup> The fifth participating facility, Badger Creek Farms, eventually dropped out of the program because it felt the requirements for developing an EMS were overly burdensome.

<sup>13</sup> Two final EMS permits have been issued by DPHE: Ball Aerospace and Aeroflex. No agricultural facility permits were issued, although DPHE worked closely with those facilities in developing their EMS.



decrease in electrical energy use, and a 10 percent reduction in natural gas consumed.

DPHE noted that the decision by U.S. EPA requiring all participating facilities' conventional environmental permits to remain in effect for the duration of the program had serious implications for testing the efficacy of the EMS permits. DPHE staff had to dedicate significant time to the maintenance of these existing permits, leading to conflicting priorities and resistance to the EMS permitting process. Moreover, the requirements of the existing permits prohibited DPHE from granting participating facilities full operational flexibility, i.e., the ability to implement alternative monitoring and record-keeping procedures and pollution prevention strategies. Limitations on operational flexibility also affected facilities' ability to pursue unique and meaningful continual improvement projects.

DPHE found that most industrial facilities had already implemented continual involvement projects that address significant environmental impacts. The one exception, a company that first implemented an EMS through the pilot program, realized notable environmental benefits from its continual improvement projects.

The public participation requirements of the pilot program, i.e., facility development and implementation of a CICP and EMS Permit Program Advisory Group, led to enhanced communication with the community and involvement by the public. DPHE noted that developing the CICP consumed participating facilities' time and resources, but ultimately increased facilities' awareness of community concerns as well as stakeholders' understanding of facility environmental impacts and plans for improvement under the EMS permit.

EMS conformance and compliance audits conducted at each participating facility are important components of the program. DPHE created a compliance audit through the EMS permit intended to stand in place of a traditional state inspection.<sup>14</sup> In establishing the compliance audit, the state did not relinquish its enforcement authority. Instead, it made decisions about whether to conduct inspections at participating facilities on a case-

by-case basis in order to direct its resources at the most pressing environmental problems. DPHE conducted an inspection at each facility during the program and provided a third-party consultant to conduct annual compliance audits.

With the completion of the EMS Permit Pilot Program, DPHE has forged a new permitting and regulatory approach that relies on a performance-based EMS being integrated with a facility's environmental permit(s). Action taken by Colorado's General Assembly during the 2007 legislative session with passage of Senate Bill 07-218, made this pilot program a permanent one within DPHE. Now that the program has moved from pilot to permanent, DPHE expects to work with EPA to explore the potential for operational flexibility.

## Texas Commission on Environmental Quality's Strategically Directed Regulatory Structure

### Background

In 2001, the Texas legislature passed two laws: the first mandated the creation of the Strategically Directed Regulatory Structure (SDRS) to support innovative programs and promote performance-based regulation, while the second law required the state to develop regulatory incentives for implementing performance-based



<sup>14</sup> Note, however, that the companies involved in developing the regulation were not interested in reduced inspections as an incentive. They perceive the state and local inspections as a "check on their system", a valuable connection to the regulators, and of value to the facility when promoting environmental needs to management.



regulations through EMS. Subsequent rules adopted by the Texas Commission on Environmental Quality (TCEQ) encouraged the voluntary use of EMS and provided a framework for how the SDRS would support existing and new innovative programs. Building on the state's environmental leadership program (Clean Texas), the SDRS was envisioned as a way to offer incentives to regulated facilities that commit to and can demonstrate that their practices are more protective of the environment and public health than existing standards.

TCEQ received a State Innovation Grant in 2003 to support the implementation of the SDRS. TCEQ's goals in setting out on this grant project were to 1) encourage innovative permitting activities to address significant air and water quality issues; and 2) support innovative programs, including EMS, permitting activities, and incentives. The project focused on three main components: 1) integrating EMS into permitting and encouraging improved environmental performance via incentives; 2) providing EMS training for TCEQ permit staff and regulated facilities; and 3) evaluating performance and documenting project results.

## Program Development and Implementation

At the outset of the SDRS project, which was initiated in 2004, TCEQ identified permits appropriate for integration with EMS and established a process to enable expedited permitting for Clean Texas members with an approved EMS. The state also established a joint

approach for training permit staff on EMS. These efforts culminated in memoranda of agreement signed by the agency's Small Business and Environmental Assistance Division (SBEA) and Office of Permitting, Remediation and Registration (OPRR). These memoranda formalized the incentives offered to Clean Texas members including expedited permitting and reduced investigation frequency.

TCEQ conducted a series of outreach and education activities for Agency management and staff, industries, and local government. SBEA conducted briefings on Clean Texas and EMS for the TCEQ management team and EMS-specific training for permitting and enforcement personnel. TCEQ also held training workshops for regulated entities throughout the state. These workshops were designed to show companies how they could use an EMS to meet or exceed their permit and other compliance requirements and improve their environmental performance. Other sessions focused on introducing EMS concepts to local government officials and demonstrating how EMS can help cities comply with regulations, specifically the Municipal Separate Storm Water Sewer System rule.

An important objective of the SDRS project was to pilot permitting incentives among Clean Texas members with an EMS approved by TCEQ. The agency granted expedited reviews for permit amendments to a number of eligible facilities and piloted incentives involving flexibility from permitting requirements for two Clean Texas members. One facility received authorization for a "flexible permit" that provides the facility operational flexibility to make predefined changes without seeking advance approval from TCEQ. For the other facility, TCEQ authorized a reduction in the frequency with which the facility conducts required fugitive emissions monitoring.

In an effort related to the permitting incentives implemented under the SDRS, TCEQ recently adopted a rule that authorizes landfills to use an agency-approved EMS as their site's operating plan. The rule, designed by the agency's Municipal Solid Waste (MSW) Permitting Division, encourages MSW facilities to implement an EMS and provides more flexibility than site operating plan requirements currently allow.

## Project Outcomes

TCEQ implemented the SDRS project and achieved its overall goal of integrating EMS into the permitting process and developing specific permitting incentives for Clean Texas members. However, TCEQ was not able to quantify the direct impact of the permitting incentives on efficiency and environmental outcomes. Annual environmental audits conducted at Clean Texas facilities during the grant period demonstrate measurable environmental benefits, such as reductions in pollutants emitted, wastes generated, and water and energy consumption, in addition to reductions in associated costs. However, these results were realized by all participants in Clean Texas and are not unique to the facilities that implemented EMS and were granted permitting incentives under SDRS. It is possible that the comprehensive EMS training offered to the state's businesses and industry as part of SDRS produced changes in awareness that motivated facilities to join Clean Texas and prompted existing members to make further commitments to innovation and environmental performance, such as implementing EMS. However, TCEQ did not specifically measure/track this.

The amount of time and money saved by participants and OPRR as a result of expedited permit reviews and greater permit flexibility also cannot be quantified. TCEQ acknowledges high transaction costs associated with the project, particularly the time invested by facilities seeking regulatory incentives. In each case, the process of reaching agreement from all stakeholders on the proposed incentives took longer than anticipated. The agency attributed the slow rate of progress to a number of factors, including:

- Lack of understanding by facilities about what was expected of them.
- Competing priorities for permitting staff.
- Difficulty in obtaining agency approval for non-standard or new innovative actions or procedures.

Another contributing factor was the extensive compliance screening process required for Clean Texas

members. Over time, this process, wherein TCEQ staff review the compliance history and status of participating facilities, evolved from an objective assessment of enforcement data to a more comprehensive, subjective evaluation.

Limitations on the range of incentives that could be offered to Clean Texas members also affected the participation of facilities and the overall impact of the SDRS project. Although many incentives were proposed, after careful consideration and consultation with the relevant TCEQ program offices, only a few were ultimately approved. For many of the potential incentives, federal and state regulatory constraints prohibited their adoption. For others, programmatic concerns prevented TCEQ from approving them. TCEQ found that interest among facilities in Clean Texas was related to the type of incentives offered and their perception of the relative benefits resulting from membership compared to the costs to the company in effort, time, and uncertainty. In particular, companies showed less interest in participating when the availability of incentives was tied to the successful completion of all Clean Texas membership requirements or when they learned that the incentives available would not provide flexibility for certain federal regulations, which would require a rule change to implement.

The State Innovation Grant program assisted TCEQ in fulfilling its goal of implementing the SDRS project. The project resulted in the integration of EMS into the agency's permitting process, improved environmental performance through the application of regulatory incentives and other innovations to move beyond compliance, and an increased awareness among the Texas businesses and industry about the importance of performance-based EMS. TCEQ will continue to encourage the use of EMS by regulated facilities to improve environmental performance. To this end, the agency plans to conduct additional training on EMS development and implementation for small businesses and local governments as well as expand its Clean Texas recruitment efforts.



## Innovative Streamlined Permits

EPA has provided funding for a small number of projects designed to test other innovations in permitting. Two of these projects, carried out by Arizona and Massachusetts, have now been completed. The Arizona project focused on improving the permitting process through innovative use of information technology, while the project in Massachusetts was intended to develop a watershed-based permit.

### Arizona Smart Permitting for Stormwater Permits and Notice of Intent to Discharge

#### Background

In early 2003, the Arizona Department of Environmental Quality (AZ DEQ) Water Division was facing a significant fiscal problem as it worked to undertake additional responsibilities in its stormwater permitting program. Prior to 2003, AZ DEQ had been accustomed to processing approximately 2,000 National Pollution Discharge Elimination System (NPDES) permit applications a year. As part of the federal Clean Water Act Phase II Storm Water Regulations, EPA issued a rule change in March 2003 that lowered the threshold amount of land development construction acreage that required an NPDES permit from five acres to one acre, effectively mandating an expansion of the number of construction sites required to obtain an NPDES permit for stormwater discharge. AZ DEQ estimated that it would have to address 3,000 to 5,000 construction permit applications—a doubling of permit work each year—with no possibility of an increase in staffing levels.<sup>15</sup>

Arizona had already adopted EPA's general permit approach to streamline its Stormwater General Permit program for the construction sector. Under this plan, construction applicants eligible for a general permit needed only to file a Notice of Intent to Discharge (NOI) 48 hours before construction began. However, the processing of the general permit was completed by hand, which was time and labor intensive for AZ



DEQ staff. AZ DEQ's general permit processing system involved receiving paper NOIs, inspecting them for completeness, and then entering them into a database. Any NOIs that appeared to be incomplete required weeks for additional review and clarification. As a result, construction companies that filed NOIs often started construction before receiving approval from AZ DEQ. Arizona needed to find a way to get ahead of the curve, before being overwhelmed by the expected huge increases in the number of NOIs, and turned to the State Innovation Grant program to help fund its transition from a traditional paper-based permit system to an automated permit processing system.

In spring of 2003, AZ DEQ received a State Innovation Grant for the development of a Web-based Storm Water permit application system under the NPDES. The system was designed to streamline the permit application process through information systems automation.

#### Program Development and Implementation

AZ DEQ began its automated stormwater permit pilot project with the hope of saving time and money for applicants and creating a more effective and efficient permitting process for Arizona. AZ DEQ coined the name "Smart NOI" for their State Innovation Grant-funded automation project. The goals of the project were to develop an internet portal to help publicize the general permit and allow potential dischargers to file their NOIs online. The project also sought to streamline

<sup>15</sup> Arizona has delegated authority over its NPDES program, and therefore is charged with the responsibility of issuing NPDES permits.

the processing of NOI through the use of an automated, online, Geographic Information System (GIS)-based review.

The Web portal was designed to be simple for permit applicants to use, while allowing AZ DEQ to screen applicants through an automated process to determine which projects would require site-specific permits or other detailed review by AZ DEQ staff. As soon as an applicant completes the initial screening questions, data that identify the name, location, environmental conditions of the site and other information are uploaded to a secure AZ DEQ site. A series of AZ DEQ validation programs use GIS to determine if the location of a proposed construction site impinges on sensitive drinking water sources, impaired or unique water sources, or endangered species locations. The system uses a series of decision rules to determine which projects will require a full permit application. In addition, the system checks the application for completeness and overall data quality. Based on this review, the program either, approves the data and moves it to an AZ DEQ permitting database, or flags the data for further review by the state's permitting staff. This approach allows AZ DEQ staff to focus more intensively on construction sites that require their direct involvement and guidance.

The construction site applicant receives an instant response from the Smart NOI system to indicate if a more detailed review will be necessary and what level of permit coverage is required for the facility. If only NOI is required, the developer can complete the NOI online immediately and move forward with construction after 48 hours. Alternatively, in cases where a site-specific permit is required, the program generates the necessary permit application forms that the applicant could fill out and mail in to AZ DEQ. (Facilities are required to print out, sign, and mail in their applications, rather than just submitting them online, because the state requires a signed copy of permit applications but does not have an electronic signature system available.) Overall, the online Smart NOI system provides a vast improvement over the previous paper application process, which required applicants to wait several weeks for a response before completing the necessary permit application paperwork.

AZ DEQ identified several measures of success for the smart NOI project, including: a reduction in the amount of time AZ DEQ spent on processing permits; the participation rate in the program over time; and improvement in AZ DEQ's response times to its customers who needed additional help. While AZ DEQ expected that there would always be individuals that preferred to continue to use paper-based applications, the state estimated that it would be able to convert at least 50 percent of construction permit applicants to the Web-based system within five years.

## Project Outcomes

AZ DEQ's Smart NOI system took only a few months to develop and implement, and it "went live" in May 2003. AZ DEQ's program met many of its goals including reduced permit processing time, increased participation in the program over time, and improved response time for customers needing help. Once construction site applicants go online and enter basic information about the proposed construction project, the Smart NOI system provides an instant response to whether a more detailed review will be necessary, what level of permit coverage is required, and what regulatory requirements apply. In cases where permits are required, applicants can start the necessary paperwork right away. When only NOIs are required, developers can move forward with construction after 48 hours. In contrast, the previous paper application process required applicants to wait for a response for several weeks.



The Smart NOI project reduced AZ DEQ's total permit processing time for basic NOIs from 5-7 days prior to the Smart NOI system, to 2-3 days after implementation of Smart NOI. Arizona estimated that the online system allowed it to process a much larger number of permits per day, increasing from 25 permits per day under the old system to up to several hundred per day with Smart NOI. Based on the reduction in time required to issue a permit and the increase in number of permit applications processed on an annual basis, AZ DEQ's *Smart NOI* Stormwater permitting program has improved its efficiency by approximately 80 percent.

After an initial low rate of participation in the Smart NOI system, AZ DEQ reached its original goal of a 50 percent participation rate in 2006, two years before its projected five-year deadline in 2008. Based on feedback from applicants, AZ DEQ attributed the initial low rate of participation to the dual nature of its online application process that required the use of signed paper documents. The Smart NOI system did make Arizona's permitting process more efficient, however it did not provide a wholly automated approach for doing business. Some of the applicants preferred the single step of submitting paper applications instead of the two-step process of completing the permit online and then printing out the paper forms for submission to AZ DEQ.

In the three years following the conclusion of the State Innovation Grant project, AZ DEQ has fully implemented the Smart NOI Web portal application system. The Web portal has helped the state process over 4,000 permit applications. An online customer questionnaire found that most applicants preferred the online application compared to the prior paper-based system.

Arizona's Smart NOI permitting application system continues to evolve and grow, and AZ DEQ has begun to add new features to Smart NOI. For example, one of the most frequent comments from users was that they wanted a fully electronic system that would not require them to print out and mail in their permit application. After the federal EPA issued a rule in May 2006 allowing electronic signatures, AZ DEQ began updating the system to allow electronic submission of permit applications. Arizona also updated the GIS functions of

the Smart NOI program with new mapping tools to improve the accuracy of screening for proximity to sensitive areas. Permit applicants can now fill out a shortened 2-page electronic application form and submit a legally-binding electronic signature confirming the accuracy of their application online. The state hopes that these two improvements will help raise the participation rate to 80 percent by the end of 2008.

AZ DEQ believes that the future of its Smart NOI program looks bright. Thanks to the positive reviews from stakeholders who used the Web portal, the State of Arizona decided to completely fund ongoing operations of the Smart NOI Web portal. The Web portal and the automation system have demonstrated how to use advanced information systems to make the processing of construction stormwater NPDES permits easier, faster and better. Interest in the program's success is growing among other states. For example, Minnesota and New Mexico have expressed interest in replicating AZ DEQ's Smart NOI system to address their own stormwater program needs. While the Arizona Smart NOI program has been a strong success, the state's efforts are not directly transferable to other states for a number of reasons including:

- Database architecture that varies from state to state.
- Characteristics of operating systems that also vary among the states.
- AZ DEQ's proprietary software which may not be readily adoptable by other states.

## Massachusetts' Assabet River Watershed Permit

### Background

In late 2002, the Massachusetts Department of Environmental Protection (MA DEP) had reached a turning point in its efforts to restore the health of the Assabet River. MA DEP had designated the Assabet River as a water body that should have sufficient water quality to provide fish and wildlife habitat and allow swimming, fishing, and boating. The river did not meet that designated use due to pollution and excessive plant and



algae growth choking the river. A primary contributor to the river's poor water quality was the nutrient phosphorus. MA DEP was aware of two sources of phosphorus in the river: effluent from Publicly Owned Treatment Works (POTWs) and sediments that had collected behind obsolete dams in the river. The dams had been built in the 1800s and early 1900s along the course of the Assabet to power industrial mills, and although the industrial mills no longer existed, the remaining dams slowed down the flow of the river and created impoundments behind the dams where phosphorus-laden sediments collected. MA DEP initially concluded that the POTWs were the primary contributor to phosphorus pollution in the river, accounting for up to 97 percent of the phosphorous introduced into the water during low flow conditions.

Massachusetts faced an uphill battle in overcoming political obstacles to reducing phosphorous contributions to the Assabet River. The four POTWs located along the banks of the Assabet served six communities and operated independently of each other. In addition to the difficulty of coordinating a unified plan to address the problem, there were a number of obstacles to improving water quality management considering that:

- Improvement to the POTWs that could reduce the flow of nutrients into the river would have to be paid for by local communities.
- Each town would be required to independently approve the costs of preliminary environmental studies and long-term upgrades, requiring building a consensus in each of six separate town meetings.
- Massachusetts lacked the financial means of paying for ongoing water quality monitoring and modeling of the overall Assabet cleanup effort.

Fortunately, by the time MA DEP applied for a State Innovation Grant in 2002, much of the public resistance in the six communities to the cleanup had been addressed through the formation of a community partnership and the convening of the Assabet River Consortium that includes the six communities served by the four POTWs (Hudson, Marlborough, Maynard, Northborough, Shrewsbury, and Westborough). The

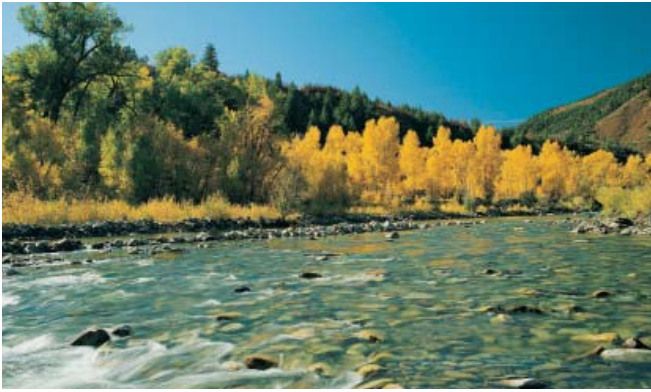


Consortium's role is to coordinate individual community efforts, collectively tackle the costs, and manage the necessary environmental studies and treatment plant upgrades. A community environmental organization, the Organization for the Assabet River, partnered with the Commonwealth to assist with field data collection activities and fundraising efforts. MA DEP also provided critical technical assessment information, including the analysis for the state's master environmental planning document, the Total Maximum Daily Load (TMDL) for nutrient loading for the Assabet River.

MA DEP was now at a point where it was ready to take action to halt the continuing degradation of the watershed. In early 2003 MA DEP received a State Innovation Grant to develop a watershed-based permit system for the Assabet River. The purpose of the grant was to assist MA DEP in developing an innovative watershed permit that would encompass the four POTWs that discharged to the River. The watershed permit was intended to govern discharge of nutrients into the river from the four POTWs together as one component of managing water quality under the TMDL to meet the designated use of the river. Massachusetts hoped that the watershed-based permit would provide a way to reduce the amount of phosphorous being introduced to the Assabet River.

## Program Development and Implementation

The intent of the watershed-based permit was to integrate control of point source and non-point source pollutants using information taken from the TMDL that



included point-source permitting at the four POTWs to achieve the state's nutrient reduction goals for the river.

The watershed-based permit was designed to be implemented in two phases. During Phase 1, POTWs would be required to reduce their phosphorous discharges and upgrade facilities so that they could achieve additional reductions in the future if necessary. During phase 2 (to be implemented in 2009), POTWs could be required to meet even more stringent limitations on phosphorus discharges if the state elected not to pursue removing sediments from behind the dams (which, MA DEP determined, was the other major source of phosphorus in the river), or if new criteria for phosphorous reduction were developed by the state or EPA.

During the time that elapsed between the MA DEP's application for a State Innovation Grant and the actual award, Massachusetts learned more about the sources of phosphorous contribution to the Assabet River. The MA DEP had initially determined that POTWs were the primary contributor, but later studies found that the POTW discharge reductions alone would not be enough to significantly reduce the phosphorous in the water. MA DEP realized that in addition to the phosphorous reductions envisioned in the POTW watershed permit, they would have to reduce sediment phosphorous contributions by 90 percent to have the intended impact of improving the health of the Assabet River.

The MA DEP State Innovation Grant project was then recast to allow the state to complete the quantification and modeling of nutrient dynamics from river sediments in 14 dams or impoundments along the Assabet River that had been identified as the major contributors of phosphorous to the water. This modeling process was designed to inform development of nutrient loading limits that would become part of the watershed

permit. Watershed permit development for the four POTWs was delayed to allow for the necessary sediment modeling and research. As part of this research process to assess the magnitude of the sediment contribution to the nutrient budget, MA DEP:

- Modeled the outcomes of a variety of phosphorous reduction strategies, including additional point source reductions; sediment removal; and other alternatives such as dam removal.
- Contracted with the United States Geological Survey (USGS) to conduct several studies of the sediments themselves to validate the assumptions made in the models.
- Developed a detailed feasibility study investigating the most cost effective alternatives to achieve water quality standards.
- Used the research completed during the model assessments to complete a revised TMDL for the Assabet River.

## Project Outcomes

In May 2005, EPA and MA DEP issued a final, watershed-based wastewater discharge permit to the four POTWs that provided for an 87 percent reduction of total phosphorous during the five-year permit cycle. Implementation of these permits was delayed by an appeal from the POTWs themselves, but in May 2006, their appeal was dropped and the watershed permits finally became a reality and are currently being implemented. The implementation of the watershed-based permit represents an important intermediate outcome that will change POTW behaviors and reduce pollution loading into the Assabet River.

MA DEQ continues to pursue the restoration of the Assabet River to a fishable and swimmable body of water. Thanks to the combination of innovative watershed permits and innovative partnerships, that goal is much closer than it was when the Agency began its State Innovation Grant. The state estimates that within the next 5 to 10 years, it will achieve its long-term goal of ecological restoration of the Assabet River.

# Chapter 3:

## Ongoing State Innovation Grant Program Projects

### Introduction

In addition to the 7 completed projects, there are currently 28 State Innovation Grant projects underway under the State Innovation Grant Program. Three additional awards from the FY 2008 competition are pending at the time of this report's publication and those projects have not yet begun. Table 3-1 below identifies the ongoing State Innovation Grant projects in order of the date of the award, and provides a summary of project characteris-

tics. The remainder of this chapter provides a characterization of the ongoing projects funded from FY 2002 through FY 2007 in each strategic target area, including the range of sectors or audiences addressed, the range of project goals identified, sample measures of success, and examples of accomplishments to date. More detailed information about each project is available at the EPA's State Innovation Grant Web site (<http://www.epa.gov/innovation/stategrants/>).

**Table 3-1. Synopsis of Ongoing State Innovation Grant Projects**

State	Competition Cycle (Fiscal Year)	Project Title	Strategic Target Area	Selected Project Performance Goals	Project Completion Date
IL	2002	Injection Well ERP	Environmental Results Program	Improve compliance, pollution prevention, and best management practices in automotive and truck repair facilities with Class V waste disposal wells within source water areas for drinking water.	March 2009
VT	2004	Underground Storage Tank (UST) ERP	Environmental Results Program	Achieve 100 percent participation by UST operators by the end of the second year. Achieve a minimum of 15 percent improvement in compliance with UST, RCRA, CAA Stage I and II, and SDWA UIC requirements by the end of the second year.	September 2008
RI	2004	Auto Salvage ERP	Environmental Results Program	Achieve a 75 percent industry-wide voluntary participation with a minimum of 25-50 percent measurable improvement in selected environmental business practice indicators within two years.	March 2009
MN	2004	Concentrated Animal Feeding Operations (Agriculture) ERP	Environmental Results Program	Foster multimedia, "whole farm" management approaches through ERP. Extend effective environmental management for Concentrated Animal Feeding Operations (CAFOs) to address issues beyond air and water quality compliance.	December 2008

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Table 3-1. Synopsis of Ongoing State Innovation Grant Projects *(continued)*

State	Competition Cycle (Fiscal Year)	Project Title	Strategic Target Area	Selected Project Performance Goals	Project Completion Date
MI	2004	Dry Cleaner ERP	Environmental Results Program	Increase environmental compliance among dry cleaners by providing compliance assistance to all facilities within the dry cleaner sector. Improved compliance will result in reduced environmental and public health exposures to toxic substances. Streamline expensive permit application and review process. Improve the efficiency of inspection activities through use of multimedia compliance and enforcement tools.	December 2008
WI	2004	Printing Sector Combined ERP/EMS	Environmental Results Program and Environmental Management System	Streamline the permitting process and find innovative air permitting alternatives to achieve improved environmental performance. Integrate permitting options for the printing sector as part of a performance based approach to managing environmental risk. Reduce the air permit burden while providing regulatory flexibility. Improve the environmental stewardship of participants.	December 2008
IN	2004	Community EMS	Environmental Results Program	Provide cleaner water, improved waste management, and reduced toxics in communities through the adoption of cross-media environmental management systems at the community and municipal level.	March 2008
WY	2004	Watershed-based Permitting/ Coal bed Methane Permitting	Innovations in the Permitting Process	Protect water quality in the Powder River Basin from detrimental effects of coal bed methane extraction through development of watershed permits that address flow, concentrations, and loads for the project area based on water quality requirements for its designated use. Develop an efficient permitting methodology that effectively incorporates cumulative impacts to water quality over the entire watershed. Strengthen the NPDES regulatory mechanism. Develop a template for watershed-based NPDES permitting that will be transferable to other watersheds.	June 2010
MA	2005	Common Performance Measures for ERP Programs	Environmental Results Program	In collaboration with six other states, develop common measures for ERP performance for a variety of business sectors that will allow comparison and cumulative assessment of benefits of the application of ERP in specific sectors.	August 2009

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Table 3-1. Synopsis of Ongoing State Innovation Grant Projects *(continued)*

State	Competition Cycle (Fiscal Year)	Project Title	Strategic Target Area	Selected Project Performance Goals	Project Completion Date
VA	2005	Underground Storage Tank ERP	Environmental Results Program	Achieve eight percent or better improvement in compliance for participating facilities.	June 2009
IN	2005	Autobody Sector ERP	Environmental Results Program	Achieve eight percent or better improvement in compliance rates among auto salvage facilities; thereby reducing or eliminating the amount of pollution and harmful contaminants released into the air, land, and water from these facilities.	August 2009
NV	2005	Drycleaner ERP	Environmental Results Program	Achieve 25 percent increase in compliance and 20 percent increase in best management practices/pollution prevention for dry cleaning sector.	August 2009
WA	2005	Industrial Footprint Approach	Environmental Management System	Improve the effectiveness of state permitting and non-regulatory efforts at complex facilities through testing and adopting of environmental footprint accounting systems.	April 2009
NH	2005	Environmental Performance Track	Performance Track	Improve environmental performance by participating organizations.	September 2009
KY	2005	Environmental Performance Track	Performance Track	For participating facilities, improve comprehensive, multimedia compliance, increase efficiency, and reduce costs.	April 2009
RI	2006	Underground Storage Tank ERP	Environmental Results Program	Identify performance and efficiency improvements of ERP for UST sector by comparison to traditional compliance methods.	August 2009
LA	2006	ERP for the Oil and Gas Sector	Environmental Results Program	Achieve eight percent or better improvement in compliance with CAA, CWA, and SDWA requirements.	August 2009
GA	2006	EMS for the Development/Construction Sector	Environmental Management System	Testing the application of EMS in the redevelopment and operation of a Brownfield site.	August 2010

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Table 3-1. Synopsis of Ongoing State Innovation Grant Projects *(continued)*

State	Competition Cycle (Fiscal Year)	Project Title	Strategic Target Area	Selected Project Performance Goals	Project Completion Date
VA	2006	Environmental Performance Track	Performance Track	Promote beyond-compliance performance by expanding the number of facilities participating in the Virginia Performance Track program through the testing of a variety of new incentives.	August 2009
IN	2006	Environmental Performance Track	Performance Track	Encourage improved performance by participating facilities through testing of incentives including streamlined permit renewals (air, drinking water, and NPDES), expedited permits, onsite pre-permit meetings with the permit writer and compliance inspector, lower level permit modifications for pollution prevention, and reduced reporting frequency.	August 2009
AZ	2006	Environmental Performance Track	Performance Track	Improve innovative results by developing a performance track program to increase the number of beyond compliance performers in the municipal and agricultural sectors that will provide a number of incentives, including permit flexibility.	August 2009
ME (in partnership with MA)	2007	Parking Lot Stormwater ERP	Environmental Results Program	Increase compliance, decrease stormwater pollution, improve water quality, protect watersheds and streams, and meet Total Maximum Daily Load Requirements without having to develop formal state permitting programs.	October 2010
RI	2007	Construction Stormwater ERP	Environmental Results Program	Improve compliance and promote use of best management practices for stormwater control at construction sites. Fulfill the requirements associated with the Construction Site Runoff Control Measure component of the small, MS4 stormwater management programs mandated by EPA's Stormwater Phase II Final Rule.	September 2010
NY	2007	ERP for Small Business Sectors	Environmental Results Program	Improve compliance, environmental performance, and pollution prevention practices among autobody shops, printers, and other small businesses. Achieve these goals in a more timely and cost-effective manner than traditional compliance assistance and monitoring efforts.	September 2011

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Table 3-1. Synopsis of Ongoing State Innovation Grant Projects *(continued)*

State	Competition Cycle (Fiscal Year)	Project Title	Strategic Target Area	Selected Project Performance Goals	Project Completion Date
KY	2007	Compliance Assistance On-Ramp for State Performance Track	Performance Track	Achieve KY EXCEL membership of over 500 members. Encourage new members to commit to and implement waste and energy reduction projects. Develop an ERP project focused on wastewater treatment facilities and properties with regulated underground storage tanks.	September 2009
TN	2007	Stormwater Performance Track	Performance Track	Improve compliance of construction industry with the state's Construction General Permit requirements. Encourage stronger Municipal Separate Storm Sewer System programs for erosion prevention and sediment control. In the long term, reduce sediment waste load allocations as identified in sediment total Maximum Daily Load documents.	September 2011
WI	2007	Dairy Sector EMS	Environmental Management System	Increase understanding about EMS, regulatory requirements, and best management practices for manure handling procedures. Increase the number of producers, animal units, and acres protected by EMS, emergency management plan, winter spreading plan, nutrient management plan, and participation in the state's voluntary environmental leadership program (Green Tier). Ultimately, increase compliance rates for permitted operations and improve groundwater and surface water quality in the Lakeshore Basin.	October 2009
WA	2007	Sustainable Washington ERP/ Performance Track	Environmental Results Program/ Performance Track	Among auto body/refinishing shops in three urban watersheds, increase compliance rates by 50 percent, increase the number of targeted businesses adopting best management practices by five percent, and reduce annual releases of mercury into Puget Sound by 300 pounds. Among businesses and organizations statewide, 1) reduce materials use, air emissions, water discharges, and hazardous waste generation; 2) conserve energy and water; and 3) restore habitat.	September 2010





## Ongoing Environmental Results Program (ERP) Projects

Thirteen states receiving State Innovation Grants in the 2002–2007 funding cycles are currently implementing ERPs. These states include Illinois, Indiana, Louisiana, Maine, Michigan, Minnesota, Nevada, New York, Rhode Island, Vermont, Virginia, Washington, and Wisconsin. Most of these ERPs focus on small business sectors that generally have relatively little environmental expertise. The specific types of businesses these states are addressing through their State Innovation Grant projects include:

- Dry cleaners.
- Printers.
- Animal feedlot operations.
- Auto body/refinishing shops.
- Auto salvage yards.
- Oil and gas production.
- Underground storage tank (UST) operations, with a focus on gas stations.
- Car and truck repair facilities that have floor drains covered under the Class V Waste Disposal (injection) well requirements.

In addition, two of the thirteen states are using State Innovation Grant funding to test ERP as an innovative way to address stormwater runoff.

All of these ERPs are seeking to improve compliance and environmental performance in target sectors through a combination of compliance assistance, self-certification, and statistically-based performance

measurement. Over the long term, these programs are working to reduce negative environmental impacts (e.g., physical, chemical, and biological hazards) from regulated small businesses to the greatest extent possible. In many cases, these states are using ERP to integrate air, water, and waste requirements into a single compliance assistance, certification, and inspection program. Five of the ongoing ERP projects are voluntary; in other words, facilities can choose whether or not they wish to participate in compliance assistance and self-certification aspects of the program, however, compliance with the underlying air, water, and waste requirements is mandatory.

The 13 states conducting grant-supported ERP projects are in various stages of implementing these programs. These stages include:

- Creating an **inventory of the universe** of regulated facilities (or those that are contributing to the environmental issue of concern).
- Conducting **baseline inspections** at a statistically-based sample of facilities to determine the extent to which the sector is in compliance and meeting key best practices for pollution prevention, and to help focus subsequent outreach on the most serious problems. As part of this step, it is necessary to develop an inspection checklist and to train inspectors.
- Conducting **compliance assistance outreach**. As part of this step, it is necessary to develop and distribute plain-language, user-friendly compliance assistance (e.g., workbooks, fact sheets, and workshops) to improve compliance and promote pollution prevention.
- Creating, distributing, and collecting **self-certification** forms from all participating facilities. Self-certification forms are closely linked to compliance assistance outreach materials. As part of the self-certification process, facilities assess their own operations and submit the self-certification form. If they are out of compliance, facilities submit a return-to-compliance plan.
- Conducting **post-certification inspections** at a statistically-based sample of facilities to measure

changes in compliance and environmental performance compared to the baseline and to verify the accuracy of facility self-certification forms.<sup>16</sup>

Table 3-2 summarizes the accomplishments of the 13 states to date in meeting these milestones.<sup>17</sup>

In some cases, states are experimenting with combining this standard ERP approach with other policy tools, such as EMS. For example, the state of Wisconsin is developing a hybrid program that will include a multimedia compliance-assistance ERP for small print shops and an EMS-based permit system to encourage beyond-compliance performance among larger printing facilities.

The 13 states have determined key measures of success as part of their project development. Performance measures are sector-specific in most instances and will be used to assess the achievements of the states' projects at the completion of each State Innovation Grant. Examples of these performance measures include:

- Number or percent of facilities in the target sector that participate in the ERP (this applies only to voluntary programs).
- Number or percent of facilities that request or receive compliance assistance or participate in ERP compliance assistance workshops.
- Improved facility understanding of applicable requirements as measured by facility self-certification accuracy.
- Degree of improvement in compliance in post-certification audits as compared to baseline audits.
- Improved environmental performance, as indicated by:
  - Reduced hazardous waste generation (measured by a reduced need to empty sumps and spill buckets).
  - Reduced air emissions (measured by increased compliance with vapor recovery requirements).
- Decreased use of volatile organic compound and hazardous air pollutant coatings.
- Improved management and clean-up of solvents and waste.
- Reduction in the number of hours required to develop permits.
- Cost savings realized as a result of facilities in the target sector adopting pollution prevention approaches and best management practices.

In addition to these 13 states working to develop and implement ERPs, two states are working to test tools that enable comparison of ERP performance across states:

- The Massachusetts Department of Environmental Protection is leading a consortium of seven states to develop and test a set of shared, sector-specific performance measures that can be used across states implementing ERP in the same sector. The effort will collect information from participating states for at least one common business sector among these states. Participating states expect that the common performance measures will enable them to quantify their environmental results and lead to more effective use of states' resources.
- The Rhode Island Department of Environmental Management (RIDEM) is working to test whether ERP can be as effective, or more effective, than traditional regulatory approaches in improving compliance for the UST sector. RIDEM is conducting this project in collaboration with the Florida Department of Environmental Protection (FDEP), which maintains a traditional compliance assistance and enforcement program for this sector. By working with FDEP, RIDEM will be able to compare the relative costs and benefits of a traditional program to ERP. The project results will inform decisions by other states in determining if ERP for USTs is a suitable alternative inspection/compliance program.

<sup>16</sup> For more detailed information on the ERP process, see Chapter 1 or EPA's ERP Web site at [www.epa.gov/erp](http://www.epa.gov/erp).

<sup>17</sup> Note that as part of ERP, many states also conduct targeted follow-up, which includes identifying potential problem facilities based on the self-certification data and targeting them for inspections or other follow-up actions. In addition, after completing post-certification inspections, states assess sector-wide performance data and determine whether to adjust strategies for achieving compliance and improved environmental performance in the sector. These steps are important but are more ongoing in nature and are not as easily tracked as other ERP milestones; therefore are not reflected in Table 3-2.

Table 3-2: Achievements of Milestones for Ongoing State Innovation Grant ERP Projects

State	ERP Progress Milestone Achieved						
	Competition Cycle (Fiscal Year)	Target Sector	Inventory the Universe of Facilities	Conduct Baseline Inspections	Conduct Compliance Assistance Outreach	Facility Self-Certification	Conduct Post-Certification Inspections
IL	2002	Car and Truck Facilities, Class V Waste Disposal (injection) Wells	●				
MI	2004	Dry Cleaners	●	●	●	●	
MN	2004	Animal Feed-lot Operations	●	●	●	●	
RI	2004	Auto Salvage	●	●	●	●	●
VT	2004	USTs (gas stations)	●	●	●	●	
WI	2004	Printers	●	●	●	●	
IN	2005	Auto Salvage	●	●			
NV	2005	Dry Cleaners	● <sup>18</sup>				
VA	2005	USTs	●				
LA	2006	Oil and Gas Production	●				
ME	2007	Parking Lot Stormwater					
NY	2007	Auto Body Shops and Printers	● <sup>19</sup>				
RI	2007	Construction Stormwater					
WA	2007	Auto Body Shops					

<sup>18</sup> Washoe county only; Clark County not completed<sup>19</sup> Auto Body Sector only

## Environmental Management System (EMS) Grants

Four states that received State Innovation Grants in the 2002 to 2007 funding cycles (Indiana, Wisconsin, Washington, and Georgia) are in the process of implementing five projects to test the use of EMS in permitting processes. Although the target audiences for these projects are quite different, they are all seeking to use EMS as a way to foster continuous improvement processes for environmental management. Each project's goals, measures of success, and activities to date are summarized below.

### Indiana

Indiana is using its 2004 State Innovation Grant to develop and implement a voluntary program designed to encourage local governments in the state to adopt Community EMS. The project is designed to provide recognition for communities that implement environmental improvements, including adoption of an EMS. The goals of Indiana's project, entitled CLEAN, include:

- Fostering local government pollution prevention successes.
- Developing a recognition program for voluntary stewardship activities for the local government sector.
- Providing cleaner water, improved waste management, and reduced use and release of toxics through the adoption of cross-media EMS at the community and municipal level.
- Improving state responsiveness to local concerns through improved communication, compliance assessment, and technical assistance efforts.
- Promoting implementation of high quality environmental projects at the local level to improve overall environmental performance of municipalities and businesses, and enhance quality of life for citizens.

The state has proposed several measures of success for its project, including:

- Number of municipalities participating in CLEAN and/or the number of municipalities expressing interest.
- Environmental improvements at pilot communities participating in CLEAN.
- Number of permitting improvements resulting from CLEAN, such as fewer municipal permit application mistakes.
- Number of partnerships formed between various state agencies as a result of CLEAN.

Indiana has made significant progress in developing its project to date. The state has developed EMS assistance materials and outreach materials to promote the program, conducted onsite visits in pilot communities, and developed and provided compliance assistance to municipalities joining CLEAN and adopting community EMS.

### Wisconsin

Wisconsin has been funded to develop two EMS projects. The first of these projects, funded by a 2004 State Innovation Grant, is designed to implement a program for improving compliance using both EMS and ERP for the printing sector. The ERP portion of the project is focused primarily on smaller facilities. The EMS portion of the project involved developing an alternative regulatory structure that uses EMS as the basis for facility permits. The goals of Wisconsin's EMS/ERP project are to:

- Streamline the permitting process and find innovative air permitting alternatives.
- Integrate permitting options for the printing sector as a significant step toward creating a performance-based approach to managing environmental risk.
- Reduce the air permit burden while providing regulatory flexibility.
- Improve the environmental stewardship of participants.



The state has identified the following performance measures for the EMS element of its pilot project:

- Administrative costs of EMS-based permits for regulated facilities and the state, compared to traditional permits.
- Emissions from participating facilities compared to emissions from a control group of non-participating facilities.
- Reduction in the number of volatile organic compound and hazardous air pollutant emissions resulting from pilot implementation.
- Reduction in the number and amount of pollutants in other media (e.g., water and waste) resulting from the pilot.
- Reduction in the amount of time the state needs to review construction permit applications and revisions resulting from the pilot.

To date, Wisconsin has developed and conducted staff EMS training. The state is now working to establish a multimedia EMS team within the Wisconsin Department of Natural Resources and conduct EMS Roles and Responsibilities training.

Wisconsin also received a State Innovation Grant in 2007 for a second EMS project that will promote EMS as a tool for multimedia environmental improvement among dairy farms of all sizes (regulated and unregulated) in the Lakeshore Basin region of the state. The vast majority of dairy farms in the state are too small to be subject to confined animal feeding operation (CAFO) regulations, and although these unregulated farms are significant contributors to polluted runoff, the state has found it infeasible to expand the regulatory program to address small dairy farms. This project is intended to supplement existing CAFO regulations by exploring the use of EMS as a tool to establish voluntary environmental improvement goals, measure progress, and ultimately protect and restore water quality in the state. Specific goals of the project are to:

- Build upon the EMS knowledge and capacity in the state and move beyond the feasibility or “proof of

concept” stage and test the full potential of EMS as a tool for environmental improvement in the dairy sector.

- Develop a critical mass of land and animals protected by an EMS, thereby creating noticeable improvements in ambient environmental conditions.
- Forge supply-chain relationships, for example by linking dairy producers and processors using EMS, to drive and reward environmental improvement.

The state has identified numerous performance measures it will use to assess short-term, intermediate, and long-term outcomes of the project in the Lakeshore Basin, such as:

- Improved understanding among dairy producers about EMS, regulatory requirements, and best practices for manure handling that will minimize risk of spills or runoff.
- Increased number of producers, animal units, and acres protected by EMS and other plans and systems to reduce environmental impacts (e.g., emergency response plans and nutrient management plans).
- Increased compliance rates for permitted dairy operations.
- Improved groundwater and surface water quality

This project is currently in the startup phase.

## Washington

Washington state received a 2005 State Innovation Grant to implement an Environmental Management System program for the pulp and paper sector. This project is adapting EMS to give facilities in the sector an “Industrial Footprint” measurement that they can use to assess their overall environmental impact. The facilities can then use the measurement to improve their environmental performance. This will result in an improvement in the effectiveness of state permitting and non-regulatory efforts at complex facilities by moving away from media specific compliance measures toward sustainability measures of environmental, economic and social objectives.

Initially, the project is assessing the “Industrial Footprint” of eight chemical pulp and paper mills in Washington by developing:

- A baseline footprint for each facility evaluated, as well as the pulp and paper sector as a whole.
- A basis for comparison between facilities.
- A comparison of the performance of facilities with an EMS in place to those without an EMS.

Footprint measurement will highlight opportunities for facilities to reduce waste and pollution as well as saving energy, water, materials, and money. Ultimately, the project expects to measure its success by assessing the degree to which the footprint measurement tool is:

- Credible to the community, the state, the facilities and EPA.
- Broad, including all major environmental impacts and can be adopted to measure economic and social impacts as well.
- Robust, meaning that it can be used to measure the footprint of an individual facility or a whole sector, and that it can be used to compare similar facilities.
- Cost effective.
- Practical, minimizing the need for proprietary data.
- Transferable to other facilities.
- Informative in measuring the environmental performance of facilities.

Currently Washington is working to secure participation of pulp and paper mills. The state has developed environmental, social, and economic indicators and is working to develop mill-specific indicators. Washington has also initiated community outreach, and has developed a draft stakeholder involvement plan.

## Georgia

After an initial effort to develop an EMS project designed to encourage manufacturing facilities to adopt an EMS approach in permitting, Georgia had to

reconsider that project because of a general lack of support from the originally targeted sector. Instead, Georgia has revised their work plan to frame a project that would apply Environmental Management Systems to the redevelopment of a brownfield site at a closed truck assembly facility in Hapeville, GA. The EMS will have two components, one that will be focused on the site redevelopment and the other on site operation following the redevelopment.

## Performance Track-related Projects

Seven states received State Innovation Grant funding between 2005 and 2007 for eight projects that are designed to recognize and reward facilities that voluntarily do more than required by law to protect the environment and public health. These “Performance Track-like” projects which are related or similar to EPA’s National Environmental Performance Track, are based on the principle that companies with a history of beyond-compliance performance and dedication to continuous improvement should be treated differently than other facilities. To foster continuous improvement at member facilities, Performance Track-like programs (generically referred to as performance-based leadership programs) offer incentives such as recognition, low priority for routine inspection, improved communication with regulators, and technical assistance or peer networking. Experience has shown that EPA needs to work in partnership with states to effectively deliver incentives and rewards for the national program. States seeking to promote environmental leadership are developing state-level, performance-based environmental leadership programs that align with, and encourage participation in, the National Environmental Performance Track, while also addressing state-specific priorities and interests.

Five states have received State Innovation Grants to develop new performance-based environmental leadership programs; these states include Indiana, Kentucky, New Hampshire, Tennessee, and Washington. Table 3-3 provides a summary of each project’s target audience, goals, program requirements, measures of success, and degree of alignment with the National Environmental Performance Track.

**Table 3-3: Summary of New State Performance-Based Environmental Leadership Projects to be Developed with State Innovation Grants**

State/Project Title	Target Audience	Goals	Program Tiers/ Alignment with National Environmental Performance Track	Program Requirements/ Incentives	Sample Measures of Success
Indiana (IN)/ Environmental Performance Based Program	Public and private IN facilities of any type, size, level of complexity, or economic sector	This program seeks to identify and reward “good performers,” while allowing the state to redirect its limited resources to regulated entities that need more regulatory attention. The program will also encourage IN organizations to implement EMS and improve environmental quality through member commitments.	Indiana’s program does not have tiers, however the IN Environmental Stewardship Program is comparable with the National Environmental Performance Track. Because of this comparability, IN envisions the state program will become a “feeder” program to the National Environmental Performance Track.	Eligibility determinations will be based on a program application, compliance check, a review of EMS materials, and a site visit. The program will explore regulatory flexibility possibilities as potential incentives. Examples of proposed incentives include streamlined, expedited, and enhanced permitting procedures and reduced reporting requirements.	Increased number of successful EMS implemented; increased number of National Environmental Performance Track members from IN; measurable reductions in harmful releases into the environment; and reduced costs to manage the program.

**Table 3-3: Summary of New State Performance-Based Environmental Leadership Projects to be Developed with State Innovation Grants (continued)**

State/Project Title	Target Audience	Goals	Program Tiers/ Alignment with National Environmental Performance Track	Program Requirements/ Incentives	Sample Measures of Success
Kentucky (KY)/ KY EXCEL (initial grant provided in 2005, and follow-up grant awarded in 2007)	Program membership is geared to a broad range of businesses and industries.	<p>Encourage individuals, organizations, and businesses to complete voluntary environmental projects and increase their environmental commitment over time.</p> <p>As part of the follow up grant, the state is seeking to expand the membership of the program to more than 500 entities, to encourage at least 40 percent of members to commit to conducting waste reduction projects, and to create compliance assistance resources to build environmental leadership capacity.</p>	<p>Regulated entities can participate at one of three levels (Partner, Leader, or Master). Non-regulated entities (e.g., individuals, communities, and environmental professionals) can participate as Advocates.</p> <p>Master tier fully aligns with National Environmental Performance Track.</p>	<p>Members of the program at the Partner, Leader, or Master level must commit to one or more voluntary environmental projects, develop an environmental management plan (similar to an EMS), conduct an environmental performance assessment, and submit an annual report to the state. Program incentives include public recognition, networking opportunities and enhanced agency services.</p>	<p>Examples of first year measures of success include number of applications, whether all members have established environmental baselines, and type and number of projects committed to in first year.</p> <p>Examples of second year measures of success include normalized reduction in member pollution levels, total number of environmental projects completed compared to the number of commitments made, and number of candidates accepted compared to the number rejected.</p>



**Table 3-3: Summary of New State Performance-Based Environmental Leadership Projects to be Developed with State Innovation Grants (continued)**

State/Project Title	Target Audience	Goals	Program Tiers/ Alignment with National Environmental Performance Track	Program Requirements/ Incentives	Sample Measures of Success
New Hampshire (NH)/ Encouraging Superior Environmental Performance Through Management Systems, Recognition, and Rewards	Small, medium, and large businesses	Increase awareness and acceptance of the value of a systematic approach to managing environmental re- sponsibilities; improve management of multi- media environmental concerns (both regulated and un-regulated); show businesses that good environmental performance leads to better economic performance; and test the effectiveness of voluntary programs to achieve environmental results while enhancing public involvement and allowing flexible allocation of regulatory resources.	NH is considering a three-tiered program. The lowest “on-ramp” tier would help companies, particularly small and medium sized entities, build environmental capacity and leadership. The middle tier would be functionally equivalent to the National Environmental Performance Track. The highest tier would be based on contracts, where specific environmental leadership commitments would be rewarded with customized incentives awarded on a case-by-case basis.	Requirements and incentives to be determined; criteria for program membership will be chosen so as to create an appropriate balance between requirements and incentives.	Examples of administrative measures include: participation rate in the state program and the National Environmental Performance Track and the number of voluntary environmental projects initiated by program participants.  Outcome measures will follow the pattern set by the National Environmental Performance Track and will be linked with established national and regional priorities set by EPA, as well as state priorities, wherever possible.

**Table 3-3: Summary of New State Performance-Based Environmental Leadership Projects to be Developed with State Innovation Grants (continued)**

State/Project Title	Target Audience	Goals	Program Tiers/ Alignment with National Environmental Performance Track	Program Requirements/ Incentives	Sample Measures of Success
Tennessee (TN)/ Construction Storm Water Excellence Initiative	<p>Municipal Separate Storm Sewer Systems (MS4s)</p> <p>TN issued a Construction General Permit (CGP) in 1992 that requires developers and contractors involved in construction activities to prevent erosion and implement sedimentation controls. The number of construction sites subject to the CGP threatens to overwhelm the state's limited regulatory resources. This project will create incentives for MS4s to share in the work of overseeing construction activities within their boundaries.</p>	<p>Protect waterways from siltation due to stormwater runoff from clearing, grading, and excavating activities at construction sites.</p> <p>Develop more efficient ways to implement the CGP program.</p> <p>Encourage developers and contractors to comply with CGP requirements.</p> <p>Foster strong MS4 erosion prevention and sediment control programs.</p>	N/A	<p>MS4s are already required to implement storm water programs in their jurisdictions that eliminate siltation and improve the water quality of runoff from construction sites. This voluntary program will create incentives for MS4s to opt to become a "Qualifying Local Program" and thereby take on the responsibility of authorizing, inspecting and administering local construction activities.</p>	To be determined.

**Table 3-3: Summary of New State Performance-Based Environmental Leadership Projects to be Developed with State Innovation Grants (continued)**

State/Project Title	Target Audience	Goals	Program Tiers/ Alignment with National Environmental Performance Track	Program Requirements/ Incentives	Sample Measures of Success
Washington (WA)/ Sustainable Washing- ton Program	National Environ- mental Performance Track members, entities with existing EMS, state agencies with Sustainable- ity Plans, hospitals, members of a local environmental leadership program (EnviroStars of King County), state pollu- tion prevention plan- ners, federal facili- ties, universities, and local governments.	Motivate small and medium sized enti- ties to achieve better environmental per- formance, including beyond compliance achievements, and produce measurable environmental results.  WA anticipates that the program will help meet the Governor's state- wide objectives of re- storing and enhancing the health and vitality of the Puget Sound region by 2020 and addressing emerging needs in the Spokane River watershed.	Sustainable Washington will combine an ERP model with a tiered state Environmental Leader- ship Program model. <sup>20</sup> The state anticipates establishing three tiers of the program. The program will use National Environmen- tal Performance Track performance reporting standards to measure and report on environ- mental results.	Participants will need to demonstrate good compliance records and a commitment to “beyond compliance” performance in order to receive financial, regulatory, and techni- cal assistance incen- tives. In addition to traditional public- sector incentives, WA plans to facilitate private-sector financial incentives, such as lower insurance rates and loans.	The state will use a sustainability criteria rating system to ad- dress environmental, economic, and social measures. WA antici- pates measuring envi- ronmental results in terms of materials use reduction, water use, energy use, air emis- sions, discharges to water, hazardous and solid waste, and area of habitat restored.

<sup>20</sup> The ERP component of this program is described in the section on State Innovation Grants for ERP, included earlier in this chapter.

In addition to the states using EPA funding to develop new state-level, performance-based environmental leadership programs, two states, Arizona and Virginia, are using State Innovation Grants to improve existing state performance-based environmental leadership programs. These efforts are described below.

## Arizona

In support of EPA's National Performance Track Program, the Arizona Department of Environmental Quality (ADEQ) has established its own state Performance Track Program in 2005. The state has elicited feedback on the program from the Performance Track community, which has identified several opportunities for improvement. ADEQ plans to use their 2006 State Innovation Grant funds to address these opportunities by:

- Providing assistance and recognition to high performing small businesses, small communities, and agricultural enterprises that may not qualify for Arizona Performance Track, but would like to adopt an EMS to decrease their environmental impacts.
- Expanding Arizona Performance Track membership by increasing the level of flexibility in permitting and reduction in reporting obligations.

Over the three-year grant cycle, ADEQ will measure its results by analyzing the number of members in the state-level Arizona Performance Track program, and the number of agricultural operations participating in the program, and the overall environmental improvements by program participants.

## Virginia

Virginia's Department of Environmental Quality (VDEQ) is using its 2005 State Innovation Grant to build the state's capacity to communicate and deliver incentives for the National Environmental Performance Track program as well as the Virginia Environmental Excellence Program (VEEP). VDEQ hopes to better integrate policy procedures and delivery of these two programs, while exploring new incentives options for participating facilities.

VDEQ expects that improved communication from VDEQ staff will increase the number of facilities seeking acceptance into the VEEP or national Performance Track program, and will also boost compliance rates and environmental performance. VDEQ plans to measure these results by assessing:

- Changes in attitudes of VDEQ managers (to be measured through a pre- and post- project survey).
- Number of institutions attending a financial incentives forum.
- VEEP and Performance Track participation rates over the project's term.
- VEEP and Performance Track accomplishments through the annual performance reporting process and Toxics Release Inventory data trends.

To date, Virginia has seen success in its performance-based programs achieving higher environmental results among facilities, while allowing these facilities greater operational flexibility. VDEQ hopes this program will not only improve the delivery and content of their incentives program, but also help maintain or increase the extent of regulatory flexibility they can provide to high performing facilities.

## Other Projects Testing Innovation in Permitting Processes

In addition to three strategic innovation priority areas (Environmental Results Programs, Environmental Management Systems, and state Performance Track Programs), NCEI has funded a small number of projects designed to test other significant innovations. Two of the three projects under this category have been completed and are described in Chapter 2 of this report. A third project, a grant to the Wyoming Department of Environmental Quality, is currently underway and tests the use of watershed-based permitting as a tool for protecting water quality in the Powder River Basin. This watershed is affected by coal bed methane recovery.



Water quality in the targeted segment of the Powder River is impacted by salinity in effluent from coal bed methane recovery operations, potentially threatening the river's designated use as a fishable river. The watershed-based permit is designed to address these impacts. This approach differs from current permitting programs by making a cumulative assessment of the potential impacts to water quality in the basin and incorporating all sources of a pollutant of concern into a single permit. The watershed permit will allow allocation of pollutant loading to the hundreds of coal bed methane recovery sources in this segment of the river. Since an emerging concern is water quality in the river as it crosses the border into Montana, this project is designed not only to achieve and demonstrate results in protecting water quality in Wyoming, but also to transfer the project methodology to other watersheds and states.

The goals for this project are to:

- Establish targets for water flow, concentrations, and pollutant loadings for the project area based on water quality requirements for its designated use.
- Develop and implement an efficient permitting methodology that effectively incorporates cumulative impacts to water quality over the entire watershed.
- Streamline the NPDES permit application sequence and strengthen the NPDES regulatory mechanism to achieve compliance with established water quality standards.

- Develop a template for watershed-based NPDES permitting that will be transferable to other watersheds in Wyoming and potentially to other states with similar permitting issues and watersheds.

The performance measures for this project are:

- Improvement in water quality to maintain the river's designated use.
- Reduction in permitting cost for applicants resulting from elimination of site-specific permits once a watershed permit is in place.
- Reduction in time necessary to process permit applications from receipt of the permit application to its submission for public notice.
- Reduction in WY DEQ operational costs resulting from reduction in personnel hours required for permit application processing.

To date, WY DEQ has achieved several key project milestones, including sponsoring the initial stakeholder committee meetings for the Clear Creek and Fence Creek watersheds and conducting watershed-based WYPDES permitting stakeholder committees meetings. Building on these efforts, WY DEQ is now working to finalize the waste load allocations within the watershed, implement the watershed permit, and develop a final project report to enable the approach to be transferred to other watersheds and states.

# Chapter 4:

## Lessons and Future Direction for the State Innovation Grant Program

### Key Lessons

A number of State Innovation Grant-funded projects are now complete and they provide us with the first measurable results for the program. The lessons learned from the first six rounds of competition include the following:

#### 1. Projects Have Produced Measurable Results

First, most of the completed projects have resulted in measurable improvements in compliance, environmental results, and/or operational efficiency. As previously discussed, Delaware reported that its ERP resulted in a 30 percentage point improvement in overall auto body shop compliance, a 37 percentage point increase in auto body shop compliance with high priority compliance indicators, and a 20 percentage point increase in the number of facilities voluntarily taking steps to prevent pollution and adhere to environmental Best Management Practices (BMPs). Maine reported that its ERP achieved a 10 percentage point increase in overall compliance rates, and almost a 12 percentage point increase in the number of shops undertaking voluntary pollution prevention and BMPs. State Innovation Grants have also resulted in measurable reductions in pollution and increases in conservation. For example, Colorado reported a 15 percent reduction in emissions of air pollutants, a 27 percent reduction in hazardous wastes generated, a three percent decrease in electrical energy use, and a 10 percent reduction in natural gas consumed as a result of their innovative use of EMS in permitting at participating facilities. Finally, State Innovation Grants are working to make environmental regulatory programs more effective and efficient. For example, Arizona's *Smart NOI* Stormwater permitting program achieved close to an 80 percent improvement in efficiency as measured by the reduction in time

required to issue a permit and the increased number of permit applications processed on an annual basis.

Rigorous implementation of EPA's policy mandating that assistance agreements commit to demonstrate measurable results on the part of EPA grant project officers and state project managers has helped ensure these results. The Grant Program provides training and technical assistance in logic modeling and performance measurement to help each grantee identify and measure specific performance outcomes. In this way, State Innovation Grants are designed to produce information on how well each innovative pilot works and what factors influence its effectiveness to facilitate their evaluation and transfer.

#### 2. State Innovation Grant Program Has Provided Key Support at Critical Time

With many states confronting tight budgets in recent years, the seed funding provided through the State Innovation Grant Program has enabled states to continue developing and testing innovative new environmental protection approaches in a way that would probably not otherwise have been possible. While States have long served as the laboratories of experimentation, their ability to test new ideas is highly affected by available funding. While federal funding has also been constrained in recent years, EPA's steady investment in the State Innovation Grant Program has provided an important source of seed capital to permit states to pursue potentially more effective and efficient new approaches amid their budget challenges.

The State Innovation Grant Program has leveraged significant state resources. Despite their budget constraints, states have provided \$2,329,660.

### 3. Strategic Focus Has Permitted Critical Mass of Experiments Around Several Key Ideas.

Another significant lesson for NCEI is the value of maintaining a strategic focus on promising target areas over time. In testing any hypothesis, multiple experiments are always desirable to explore the robustness of the idea. In the State Innovation Grant Program, sustained focus on ERP, EMS, and Performance Track-like programs has enabled concentrated learning about these highly promising approaches. This has permitted the build up of knowledge critical to understanding the full potential of those concepts, which has helped accelerate adoption by other states. For example, with regard to ERP, states have developed applications for eight new sectors beyond those originally pioneered by Massachusetts.

An obvious tradeoff with this strategic focus is that support has not been available for other fertile areas of innovation outside of permitting such as new environmental technologies or intelligent information systems. Some have also expressed concern that wholly original ideas may not garner support, although over the history of the Program, NCEI has selected 3 projects—a little less than 10 percent of all program projects outside of the target areas. Nonetheless, NCEI recognizes this tradeoff and would eagerly support a wider range of projects should additional funding become available. Demand appears significant; applications for funding have routinely outstripped available resources in each round of competition by about four-fold. Additional resources would also enable expansion of the program to American Indian Tribes, as was originally envisioned.

### 4. The State Innovation Grant Program Has Fostered the Transfer of Ideas and Building of Networks

The Environmental Results Program (ERP) is an excellent example of how good ideas can spread. Since the State Innovation Grant Program selected the Delaware ERP in the 2002 competition, a number of additional

states have requested support for ERP projects, and EPA has funded 12 of them. These 12 projects address eight new sectors and an innovative adaptation of ERP for a multi-sector stormwater management project. In the two projects from 2007 that are designed to test ERP for management of stormwater runoff, one project focuses on runoff from construction sites, while the other is focused on parking lots in heavily developed areas. In future years, the State Innovation Grant Program could also provide a mechanism to test ERP for other emerging issues. For example, a report from the National Academy of Public Administration in the spring of 2007 suggested that ERP could be used on a pilot basis to test how successfully it might be in reducing nutrient pollution flow into the Chesapeake Bay from poultry producers on the Delmarva Peninsula.<sup>21</sup>

States recognize that a key benefit of the Grant Program is that it creates opportunities for them to share insights and learn from their peers in other states. The grants include travel resources that allow recipient states to participate in events such as the biennial State-EPA Environmental Innovation Symposium as well as the State ERP Consortium. In fact, the State Innovation Grant Program was instrumental in helping launch the *States ERP Consortium*—a collaboration of 24 states sharing information on ERP implementation and performance metrics.

### 5. The State Innovation Grant Program Has Strengthened the State-EPA Innovation Partnership

The collaboration on the thirty eight projects funded under the State Innovation Grant program has provided a strong foundation for a stronger State-EPA partnership overall. Since 2002, State representatives have routinely participated in meetings of EPA's Innovation Action Council (IAC). The IAC, comprised of EPA's senior-most career leaders, convenes quarterly to set direction, oversee, champion, and troubleshoot EPA's innovation agenda. The Chair and Vice Chair of the Cross Media Committee (CMC) of the Environmental Council of the States (ECOS) are standing members of

<sup>21</sup> *Taking Environmental Protection to the Next Level: An Assessment of the U.S. Environmental Services Delivery System*, A Report by a Panel of the National Academy of Public Administration for the United States Environmental Protection Agency, April 2007, Page 35.

the IAC and are typically joined by three or four other State Environmental Commissioners at each meeting. Since 2004, the IAC and the CMC have shared a joint work plan identifying priority areas for collaboration on innovation. In addition, EPA and ECOS have co-sponsored four Innovation Symposia where state and EPA innovation practitioners gather to share ideas and experiences.

## Future Direction

As mentioned, additional resources would enable expansion of the program to American Indian Tribes and additional thematic areas. One area of potential interest includes state application of the “environmental footprint” approach to foster business sustainability by improving energy and material use efficiency. An environment “footprint” measures the amount of nature’s resources an individual, facility, community, or country consumes in a given year; by measuring businesses’ environmental footprints, states seek to identify opportunities to reduce their overall environmental impact.<sup>22</sup>

A second area that the grant program may be able to support and stimulate is the application of “lean manufacturing” tools and techniques for environmental improvements, such as waste reduction, resource and energy conservation. (See <http://www.epa.gov/innovation/lean/improvement-methods.htm>.)

Another potential area for future collaboration that NCEI would like to explore with states is testing tools for integrated permitting approaches (i.e., an environmental permit for a facility that includes all of the regulated environmental impacts for all environmental media). Permits of this type are already being used in Europe and appear to improve the efficiency of regulation while giving facilities flexibility within an environmental permit to integrate continuous improvement into their environmental management and compliance strategy.

In the next four years, thirty one projects (including the three new awards from 2008 pending at the time of this report) will also report results that we hope will promote interest and provide insight and guidance that will stimulate broader testing and adoption of innovation by states leading to improved environmental results from permitting programs. We hope that the State Innovation Grant Program can continue to be a vehicle to test new ideas and that NCEI can continue to facilitate the sharing of results and implementation experiences. This report, subsequent progress reports, and the information posted on the program’s Web site (<http://www.epa.gov/innovation/stategrants>) will provide mechanisms to document and share results. Additionally, events such as the State-EPA Innovation Symposium (<http://www.excelgov.org/sustainableresults>) will continue to provide opportunities for states to share their results from State Innovation Grant projects.

<sup>22</sup> See, for example, the “Industrial Footprint Reduction Project” proposal submitted by the State of Washington at <http://www.epa.gov/innovation/stategrants/applications/04applications/washington.htm>.





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