

Pollution Prevention Annual Report 1998

Wisconsin Department of Natural Resources

Wisconsin Department of Commerce

University of Wisconsin-Extension Solid and Hazardous Waste
Education Center



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Executive Summary

Purpose

Early efforts to improve environmental quality focused almost exclusively on safe disposal of wastes and "pollution control" - the attempt to clean up or capture water and air pollution as it leaves a pipe or stack and before it enters the environment. More recently, critics began to argue that it makes more sense to prevent and avoid pollution, rather than control it. New approaches evolved, and Wisconsin led the way. In 1989, Wisconsin Act 325 directed the Department of Natural Resources (DNR), the Department of Development (now the Department of Commerce (DCOM)), and the University of Wisconsin-Extension (UWEX) to share responsibility for government-sponsored pollution prevention initiatives. Although the roles and relationships have evolved over time, these three entities continue to work together in a remarkable partnership that capitalizes on the organizational mission and strengths of each.

This 1998 Pollution Prevention Report is the latest of many work products developed jointly by DNR, DCOM's Small Business Clean Air Assistance Program (SBCAAP), and UWEX's Solid and Hazardous Waste Education Center (SHWEC). The purpose of the report is to document recent efforts by each partner, share some of the success stories, and begin to develop a more comprehensive plan for measuring the effectiveness of our pollution prevention efforts.

Highlights

This is expected to be the first edition in an annual series of reports. Some of the highlights are summarized below:

Organization and Administration

- DNR created a Bureau of Cooperative Environmental Assistance (CEA) during the 1996 reorganization, assigning 12.5 permanent staff to work in the new Bureau. Most of the CEA staff are "business sector specialists," a new type of position with responsibility for pollution prevention, innovation, and partnership development.
- CEA, SBCAAP, and SHWEC hold monthly pollution prevention coordination meetings and constantly communicate via an electronic mail list server. The meetings provide a monthly forum for partners to share information, ideas, and lessons learned. Cooperative projects (e.g., workshops or training) are developed, grant applications are jointly developed and implemented, and workload issues are discussed to avoid duplication of effort. This conscious effort at good, efficient government is a national model for cooperation that few, if any, states have succeeded in matching.

Training, Outreach, and Technical Assistance

- Within the last year, more than 40 DNR regulatory staff received two days of training on how to integrate pollution prevention concepts into their core permit and inspection duties. Over the past five years, more than 600,000 publications have been ordered through DNR's Waste Reduction and Environmental Assistance order forms. DNR's pollution prevention newsletter, *Waste*Less*News*, reaches more than 6000 subscribers three to four times per year with helpful information about preventing and minimizing pollution.
- All of the workshops and seminars coordinated by SBCAAP since 1995 have included a waste reduction/pollution prevention component. SBCAAP provided 62 workshops and seminars in 1997 and reached more than 3700 people from small Wisconsin businesses. In addition to providing businesses with detailed environmental compliance information through these workshops, SBCAAP continues to spread a pollution prevention message to their audience.
- In 1997, SHWEC responded to well over 350 requests for technical assistance from Wisconsin businesses interested in pollution prevention and industrial recycling, with 70 companies receiving thorough on-site assessments. Over \$4 million in potential cost savings were identified, and a detailed look at just 8 of the companies receiving assistance showed more than \$200,000 in actual cost savings due to SHWEC's efforts. Clients gave SHWEC's Industrial Recycling Assistance Program an average rating of 4.3 on a scale from 1 (lowest rating) to 5 (highest rating). SHWEC staff also developed pollution prevention courses for students at the Madison and Green Bay campuses of the University of Wisconsin, a number of short environmental courses open to the public, and numerous publications.

Recognition Programs

- DNR and DCOM offer recognition awards for businesses and organizations that achieve excellence in pollution prevention and recycling. The Prevention/Environment/Prosperity (P/E/P) Award is given by DNR to businesses that lead the way with successful pollution prevention projects and demonstrate the economic advantages of their innovations. Since the program began in 1993, 41 Wisconsin businesses have been recognized with P/E/P Awards for their outstanding achievements. DNR and DCOM work in partnership with several other government offices and numerous sponsors to offer two companion awards, the Governor's Award for Excellence in Hazardous Waste Reduction and the Governor's Waste Reduction and Recycling Awards. The former focuses on hazardous wastes and the latter focuses on non-hazardous wastes. Since the inception of these programs, more than 150 Wisconsin businesses and organizations have distinguished themselves and received special commendations and public congratulations from Governor Tommy G. Thompson.

ISO 14000

- DNR is working with the U.S. Environmental Protection Agency (EPA), other state environmental agencies, and University researchers to learn more about how ISO 14000 affects pollution prevention and compliance. Seven Wisconsin businesses have volunteered to collect data before and after developing an environmental management system, to determine if the systematic approach outlined in ISO 14000 in fact improves performance. The results of this research will help DNR and other agencies evaluate whether businesses meeting ISO 14000 deserve less regulatory scrutiny than other businesses.
- DCOM developed a survey to determine how Wisconsin businesses are responding to ISO 14000, find out if there are knowledge gaps, and identify the types of training or other assistance that are most needed. DCOM worked with the state's largest association of manufacturers to mail the survey to more than 800 businesses. More than 200 businesses responded, providing one of the most comprehensive surveys on ISO 14000 needs available and enabling technical and financial assistance to be targeted where it is most needed.
- SHWEC has provided several seminars, short course programs, and guest lectures on subjects related to ISO 14000 and environmental management systems. SHWEC and the University of Wisconsin - Madison Department of Engineering Professional Development are spearheading development of a

coalition of Wisconsin industries that will work collaboratively to use environmental management systems to improve environmental and financial performance.

Partnerships

- The Great Printers Project is a major collaboration between DNR, SHWEC, the printing industry, and environmental groups. An extraordinary amount of effort has gone into this partnership in order to promote best environmental practices in the printing industry. Currently, 73 Wisconsin businesses have achieved and maintained status as a "Wisconsin Great Printer," indicating their commitment to exceed regulatory requirements, adopt pollution prevention strategies, and continually improve environmental performance. Hundreds of other Wisconsin printers have received training and technical assistance through this collaboration. Resulting in part from Great Printers Project recommendations, SHWEC helped to found the Printers' National Environmental Assistance Center (PNEAC). Funded by EPA, PNEAC uses the Internet and a fax-back system to provide printers and organizations that assist printers with directly relevant and accurate environmental assistance. Two video conferences produced by SHWEC for PNEAC reached 3300 viewers in North America, and more than 90% of the printers later surveyed said they'd adopted one or more of the waste reduction strategies featured.
- The Wisconsin Drycleaner's Partnership is yet another successful collaboration, this time between DNR, SHWEC, SBCAAP, the drycleaning industry, and environmental groups. The Five Star Recognition Program, begun in 1996, establishes five increasingly ambitious levels of environmental performance (including pollution prevention) for participating drycleaners. Even at the One Star level, businesses are recognized for doing more than regulations require. Five Star drycleaners are national environmental leaders in their industry. Roughly 14 percent of Wisconsin drycleaners (48 businesses) are now participants. Another element of the Drycleaner's Partnership is a training and certification program developed by SHWEC. More than 50 Wisconsin businesses have completed the curriculum and are now Wisconsin Certified Environmental Drycleaners.
- Seven years ago, Wisconsin's pulp and paper industry leaders publicly committed their industry to continual environmental progress, with an emphasis on pollution prevention. The industry and DNR formed a Pollution Prevention Partnership and agreed to specific goals for reducing environmental releases of seven targeted chemicals by 1999. A report of 1996 data issued in February 1998 shows that releases of all but one targeted chemical had decreased substantially (18%-46%) since 1992. The industry already met their goals for three of the seven substances, three years ahead of schedule, and emissions of a fourth targeted chemical were within one percent of the goal. Industry leaders expect to meet 6 of the 7 goals by 1999. All of these reductions stem from voluntary pollution prevention over and above regulatory requirements.

Conclusion and Acknowledgments

Since the passage of Act 325 in 1989, a substantial amount of effort has been undertaken by DNR, DCOM, and SHWEC to promote pollution prevention. These programs supplement and complement the traditional pollution control regulatory approach, without in any way detracting from the importance of compliance and enforcement efforts. Even with relatively modest budgets and staffing, pollution prevention programs have generated significant benefits for the businesses and citizens of Wisconsin. But the job is not done. This report outlines key next steps toward a mutual objective of measuring the effectiveness of our pollution prevention efforts. All three partners are committed to continual improvement.

DNR, DCOM, and SHWEC would like to thank the hundreds of partner organizations and thousands of individuals who contribute so much to Wisconsin's environment and make this state a national leader in pollution prevention. We acknowledge that ultimately it is Wisconsin businesses themselves that do the hard work of actually implementing pollution prevention projects; we salute their efforts and look forward to continued collaboration.

Introduction

Pollution prevention is currently considered the preferred approach to minimizing the environmental impacts of human activity. In the State of Wisconsin, the Department of Natural Resources (DNR), the Department of Commerce (DCOM), and the University of Wisconsin - Extension Solid and Hazardous Waste Education Center (SHWEC) share responsibility for implementing government-sponsored pollution prevention initiatives.

There is a growing public expectation that government expenditures should achieve observable results. Therefore, **the purpose of this report is to present a simple review of government activity and performance in the pollution prevention field.** This includes descriptions of how government pollution prevention dollars were spent and what **results** were achieved. It also includes an analysis of what programs were most effective, and how our pollution prevention efforts can be improved in future years. It is the intention of the authors to publish annual updates to this report.

The body of this report is presented in six main sections. Section one is a brief history of pollution prevention in Wisconsin and on the national level. Section two presents a discussion of challenges and goals related to performance measurement and program evaluation in the pollution prevention field. The third section is an overview of current pollution prevention programs, along with some initial attempts to measure effectiveness. Section four describes innovative approaches to pollution prevention. Some recent, successful pollution prevention projects are described in detail in section five. And the sixth and last section outlines plans to address challenges and meet goals.

Before we move on to the rest of the report, it's necessary to raise one more issue. The authors of this report are fully aware that most pollution prevention efforts are voluntary, so the businesses themselves deserve most of the credit. The purpose of this report is not to imply that DNR, DCOM, or SHWEC are responsible for all improvements. Rather, the purpose is to analyze the relative effectiveness of various government-implemented programs intended to promote and foster pollution prevention, and eventually to plan for improved government services based on that analysis.

I. History of Pollution Prevention

A. Wisconsin

As recently as 15 years ago, environmental management throughout the United States focused almost exclusively on the treatment and control of pollution -- so called "end of the pipe" solutions. Few people recognized the benefits of a preventive approach. But in the late 1980s, the situation in Wisconsin, as well as in other parts of the country, reached a critical stage. As the report *Environmental Quality Through Pollution Prevention* noted, "simply treating and disposing of the wastes we produce has become too expensive and in some cases, environmentally unsound." As a result, the state turned to pollution prevention to address these new environmental management challenges. In 1989, Wisconsin Act 325 directed DNR, DCOM, and the University of Wisconsin-Extension to share responsibility for government-sponsored hazardous pollution prevention initiatives. The Act went on to define hazardous pollution prevention as

"...changes in the process or raw materials that reduce or eliminate the use or production of hazardous substances, toxic pollutants, and hazardous waste. Hazardous pollution prevention does not include incineration, changes in the manner of release of a hazardous substance, toxic

pollutant or hazardous waste outside of the process or treatment of hazardous substances, toxic pollutants or hazardous waste after the completion of the process." [Statute 299.13 (c)]

Act 325 created a unique structure for hazardous pollution prevention activities drawing on the strengths of the three agencies charged with carrying out its directive. In the DNR a hazardous pollution prevention coordinator built on the environmental quality programs and coordinated DNR efforts with the technical assistance provided by the Hazardous Waste Minimization Program. The University of Wisconsin-Extension used SHWEC to provide education, training, and technical assistance related to pollution prevention. Finally, the Department of Development, later DCOM, established a Hazardous Pollution Prevention Board comprised of representatives from industry, environment and labor groups, and state and municipal governments. The board coordinated state activities and reviewed grant applications until 1994, when its responsibilities were divided up among other state government programs.

A number of changes in the Wisconsin structure for hazardous pollution prevention initiatives have occurred since the passage of the original 1989 Act. In 1990 hazardous pollution prevention became known simply as pollution prevention with the passage of the federal Pollution Prevention Act of 1990. In the DNR the duties of the original hazardous pollution prevention coordinator were expanded into the Office of Pollution Prevention. These duties were augmented by a focus on multimedia policy development, staff training, and identification of reporting and environmental needs related to pollution prevention. In 1996 the Office of Pollution Prevention was dissolved and its work load was placed in the new Bureau of Cooperative Environmental Assistance (CEA). In addition to this workload the bureau also houses business sector specialists, coordinates and integrates voluntary approaches to environmental protection within DNR, disseminates pollution prevention and waste reduction publications, and focuses on developing relationships between businesses and environmental organizations. SHWEC continues to expand its education, training, and technical services. DCOM's Hazardous Pollution Prevention Board no longer exists; however, the agency carries many other responsibilities geared toward getting the pollution prevention message out to the business community including the Small Business Clean Air Assistance Program (SBCAAP), and compliance assistance offered through business ombudsmen.

B. National Level

The Pollution Prevention Act of 1990 is a landmark piece of legislation in the environmental field. It played an important role in raising the profile of pollution prevention and its use as a tool for environmental protection. The act established as national policy an environmental management hierarchy with pollution prevention and reduction resting at the top of this hierarchy as it "is potentially the most effective method for reducing risks to human health and the environment." It establishes as policy that the United States should first prevent or reduce pollution whenever possible.

Pollution Prevention under this act is defined as source reduction. This includes any practice which "reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment prior to recycling, treatment, or disposal," or which "reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants."

Since passage of the Pollution Prevention Act of 1990, the U.S. Environmental Protection Agency (EPA) has advanced pollution prevention in its cooperative efforts, rule development, permits, and state grants among other things. It also recognizes and promotes the benefits that can occur with pollution prevention in areas such as environmental, health, economic, regulatory, liability, and public image benefits.

C. Performance Measurement

A somewhat recent criticism of government agencies is that they have not historically paid enough attention to goal setting or performance measurement. Pollution prevention programs are no exception. None of the legislation or regulations related to pollution prevention in Wisconsin include specific quantifiable goals, and

performance measures have thus far been mostly absent from program planning and program review efforts. One ramification of this is that our ability to present and analyze any historical trends in pollution prevention activity is severely limited at this time.

All of that is changing. At the national level, the Government Performance and Results Act of 1995 dictated that federal government programs (including pollution prevention programs) must have clear goals and must monitor performance in order to demonstrate results. Although Wisconsin has not enacted any similar legislation, there is now a decided emphasis on performance measurement. It's one of the primary reasons for the existence of this report.

II. Challenges and Goals

The mission of Wisconsin DNR is "to protect and enhance our natural resources..." and "...provide a clean environment and a full range of outdoor opportunities...". Given this mission, most DNR programs would ideally measure success based on demonstrable results (clean air and water, a healthy forest, a safe deer hunt, etc.), and the method used to achieve results would be of secondary importance. For example, when DNR's air management program evaluates performance, the first and most important question asked should be whether Wisconsin's air is clean (i.e., healthy to breathe). This question focuses exclusively on the agency's mission statement and the desired result. On a very basic level, the program has succeeded in fulfilling its mission if and only if the air is clean, regardless of how much residual pollution remains, how much effort was made, or what methods were used.

Pollution prevention, on the other hand, is not an end, but a means to an end. Wisconsin's state government expends effort promoting pollution prevention, not because it is by itself a desired *result* or even because it is the only way to achieve a desired result, but rather because the *method* is considered preferable to pollution control, in terms of cross-media pollution impacts, economic efficiency, occupational safety, or other factors. This distinction between *results* and *methods* creates some interesting challenges and raises some basic questions about how pollution prevention program should set goals and measure progress.

A. The Challenge Of Measuring Pollution Prevented

It is relatively easy to monitor the *creation* of pollution. DNR (at the state level) and EPA (at the national level) now have decades of experience quantifying pollution and determining who created how much. One good source of this kind of data is the Toxics Release Inventory (TRI). Under this program, most Wisconsin manufacturers that generate significant amounts of toxic pollution are required by law to submit annual TRI forms to DNR. The amount of effort required to determine if pollution increased or decreased is generally small. In fact, sometimes all that is needed are a few numbers (e.g., pounds of hazardous waste generated by company "X" in 1995 and in 1996). This kind of measurement is made simple because we ignore the question of *why* the numbers changed.

Measuring the *prevention* of pollution, on the other hand, can be exceedingly difficult because we no longer ignore the "*why*" question. "Prevention" implies that some result would have happened, were it not for some action taken. If the only data we monitor is the amount of pollution, we don't know why the numbers change and we can't really determine if our pollution prevention programs are effective. For example, if pollution decreases at company X because fewer widgets were made, it's not a measure of effective pollution prevention. On the other hand, if pollution decreases because of a new product formulation, the change should be included in any analysis of prevention programs. *Why* pollution decreased is important, and it requires additional data and a much more complicated analysis to answer this question.

Pollution prevention professionals have argued for years about how best to measure the effectiveness of their efforts. Not surprisingly, there is still no consensus. Everyone agrees that there is no one thing or short list of things that definitively answers the question. Every potential measure of prevention has limitations, and people can argue endlessly about how each possible measure can give misleading results. Discussion usually focuses on the use of *surrogate* measures, which don't directly or in every case suggest effective pollution prevention efforts, but which are good indicators thereof.

In the absence of a perfect performance measurement, there are two approaches using surrogate measures that are commonly considered. The first is the "multiple measures" approach: measure lots of things, try to provide some insight and context, and encourage each person to subjectively evaluate progress and effectiveness. This approach puts a lot of emphasis on data collection, is straightforward and less controversial, but poses challenges for any audience trying to interpret the results. The second approach is the "Dow Jones" approach: measure a few key indicators, and combine them somehow into an index (i.e., a single number) which you can track over time. If the index goes up, that's good, and if it goes down, that's bad. The index approach makes measurement simpler and provides a much easier way for audiences to evaluate performance, but development of the index itself is usually extremely difficult and controversial.

Section 8 of the annual TRI reporting form collects information that can help bridge the gap between surrogate measures of pollution prevention and actual measures of pollution. Companies must report changes in production rates from the previous year, and indicate the types of pollution prevention activities they engaged in (if any). A thorough analysis of the Section 8 data could begin to answer questions about how much pollution was reduced through prevention, but it probably would not tell us why preventive approaches were used or whether any government-sponsored programs were a factor.

B. Asking Different Questions

The focal point for pollution prevention programs at DNR is the Bureau of Cooperative Environmental Assistance (CEA), located in the Division of Customer Assistance and External Relations. This is more than just an organizational detail. It brings home the point that customer assistance, rather than pollution prevention per se, is the essence of CEA. This approach allows for the possibility that CEA can at times do a good job of servicing a customer's needs, without seeing a resulting decrease in pollution. The same can be said for pollution prevention programs at SHWEC and DCOM, and this has important ramifications for how we set goals and how we measure performance.

It would be easy to get bogged down in measurements of pollution released or surrogate measures of pollution prevented, but that isn't really the point. We need to ask different questions. We need performance measures that tell us if we are providing the assistance that customers need, if the results are worth the public expense and effort, and how we can improve services. The objective is to evaluate what works and what does not, in order to inform policy and improve decision-making.

C. Our Approach

In this section we will describe the goal-setting and performance measurement approach that we intend to use. We know this approach is not perfect. Most of the performance measurements will involve tradeoffs between simplicity and accuracy. But the end result, we hope, is a fairly useful 1998 report and a blueprint for a greatly improved pollution prevention progress report that we can publish in 1999. Moreover, we've included a customer response card at the end of this report and we welcome any feedback about how to improve this effort.

CEA's approach begins with a determination to identify goals first. The most useful measurements are those that relate directly to goals, and in no case should we collect data just for the sake of having numbers to report. The underlying requirement is that we set goals and choose measures that tell us if programs are succeeding or failing, and how to improve our services.

Another core principle is that we want to keep things simple, and avoid trying to measure things that didn't happen (e.g., tons of pollution prevented). We have elected to avoid the complexity and potential controversy of the "Dow Jones" approach. Instead, we will use what was previously described as a "multiple surrogate measures" approach, with four distinct categories of goals and measures.

"Output" goals and measures

With this category, the main objective is to demonstrate that state employees are productive and work is getting done. Some of the goals and measures may only be descriptive, though in most cases we will try to quantify productivity. Most of the information in this 1998 version of the pollution prevention report will fall under this category, because we haven't yet planned for more sophisticated performance measures. In some cases output measures will be used only until a more informative measure of program effectiveness can be developed. These are by far the easiest types of measurement we will undertake.

"Customer satisfaction" goals and measures

In this category we focus on the customer assistance aspect of state programs. Our objective is to set high standards for ourselves, get direct feedback from customers about whether we are doing a good job meeting their needs, and discover how we can improve. We especially want to know if all the pollution prevention message and outreach efforts are reaching customers, and if government programs are making any difference in attitudes and actions. This type of measurement is a little harder to do than "output" measures. Surveys may be effective tools, but there are always concerns with costs, methodology, response rates, etc.

"Efficiency" goals and measures

As stated earlier, CEA, DCOM, and SHWEC operate under an assumption that pollution prevention methods are usually preferable to pollution control, in terms of cross-media pollution impacts, economic efficiency, occupational safety, or other factors. With "efficiency" measures we attempt to determine if Wisconsin businesses are "efficiently" reducing pollution. One likely "efficiency" measure is to normalize pollution based on economic data. For example, we may track the amount of pollution generated per dollar of revenue. In most cases, it will then make sense to compare companies in similar industries with each other, and in some cases it will make sense to compare Wisconsin businesses to similar businesses outside the state. Another possibility is to track the rate of adoption of "best practices." In other words, if a certain pollution prevention technique is known to be the best way of dealing with a specific environmental problem, we may track the percentage of businesses using the technique. This category is likely to be the most challenging in terms of setting goals and defining performance measures, but may prove to be the most informative.

"Environmental quality" goals and measures

We can't lose sight of the broader DNR mission (clean air and water, etc.), which drives Wisconsin's pollution prevention efforts. This final category therefore includes goals and measures that directly relate to environmental quality and quality of life. These goals and measures are almost always developed and monitored by programs other than CEA. None are included in this 1998 report, but they may be included in future pollution prevention reports to provide a "big picture" context for our other measures.

D. Actual Goals and Performance Measures

Table 1 below summarizes goals and performance measures already identified for inclusion in this and/or future reports. For those measures already in place, tracking results will be presented in the next chapter of this report. Then, in a later chapter, we will describe our next steps for identifying the remaining goals and measures.

Table 1. Current and Planned Performance Measures and Goals

Category	Performance Measure	Annual Goals	Status
Output	% new or revised DNR rules incorporating pollution prevention	75% of possible (not possible for all rules)	Ready to report in 1999
Output	# hours of DNR staff pollution prevention training	200	To be designed - may be ready to report in 1999
Output	# new fact sheets or case studies prepared	15	Should be ready to report in 1999
Output	# publications available from Clearinghouse	200	Tracking now
Output	# publications ordered from Clearinghouse	100,000	Tracking now
Output	# Waste Less News subscribers	6000	Tracking now
Output	# Waste Less News copies distributed	25,000	Tracking now
Output	# applications for awards programs	150	Tracking GWRRA but not PEP
Output	# public speaking engagements by CEA	100	Should be ready to report in 1999
Output	# people reached through public speaking	5000	Should be ready to report in 1999
Customer Satisfaction	ratings of sector specialists and DNR by businesses in each sector	"high" approval rating from majority of businesses	To be designed - some will be ready for 1999
Efficiency	# WI Great Printers	75	Tracking now
Efficiency	average # of stars achieved under Five Star Dry Cleaner program	to be determined	Possible, but data not readily available
Efficiency	# ISO 14000 certified businesses in Wisconsin	10 by end of 1998, 50 by end of 1999	Should be able to report in 1999

III. Current Programs and Performance Measures

Pollution prevention is a very lively field of activity in Wisconsin. It would be virtually impossible to describe all of the initiatives undertaken by government agencies, not to mention the efforts of educational institutions, businesses and trade associations, environmental groups, and individuals. The objective for this portion of this report is to highlight just a few of the most prominent pollution prevention efforts recently undertaken.

Most the recent pollution prevention activity fits into three broad categories:

- 1) Organizational changes;
- 2) education and outreach programs; and,
- 3) partnerships.

A. Organizational Changes

1. Reorganization

An Increased Emphasis on Pollution Prevention

As a result of DNR's major reorganization from 1994 to 1996, the Office of Pollution Prevention was modified and expanded into a new Bureau of Cooperative Environmental Assistance (CEA), focusing primarily on pollution prevention but also promoting other innovative and non-regulatory approaches to environmental improvement. Staffing in this program expanded from 1.5 permanent positions in 1994 to 12.5 permanent positions in 1998. Virtually all of the increases from 1994 to 1998 were funded by redirecting existing resources from DNR's regulatory programs or through grants. Despite these increases, the cooperative environmental assistance program still consists of less than 1% of DNR's total staff and budget.

Another important change is that DNR has stationed one person from the cooperative environmental assistance program to work in each of the five regional offices, bringing pollution prevention expertise and emphasis closer to customers than ever before.

Business Sector Specialists

Most of the staff assigned to the cooperative environmental assistance program (and all of the regional office staff) serve as business sector specialists (see Table 2 below). Business sector specialists work with one to three industrial or commercial sectors to act as conduits into DNR. The sectors were chosen based on surveys of DNR managers in air, water, waste and enforcement, as well as external stakeholders from business and environmental groups.

Sector Specialists serve as the first point of contact for businesses in their assigned sector, providing coordinated, cross-media technical and compliance assistance. In addition to integrating all environmental aspects of their statewide business sectors, the specialists:

- proactively work with companies and organizations in specific sectors to learn about needs and to share environmental opportunities;
- provide information on environmental requirements and on how to prevent pollution;
- communicate businesses' concerns to people who can rectify the situations;
- cooperate in developing fact sheets, guides to regulations and check lists to explain regulatory requirements, technical assistance opportunities, and efficiency improvement opportunities;
- monitor agency decisions and provide knowledge of proposed agency decisions so sectors can stay informed and give input;
- help develop and coordinate a number of the partnerships, recognition programs and innovative environmental initiatives described in this report;
- connect business with DNR staff needed for permits or compliance information;
- take on a regional business-generalist role in addition to their statewide sector specialist role;
- coordinate DNR work with cross-media issues/impacts, and;
- provide a link to SHWEC, DCOM, other statewide and local organizations and CEA's programs and resources.

Table 2. DNR's Business Sector Specialists *(This table has been removed and replaced with the CEA Staff Listing, which has a complete, current listing of Sector Specialists.)*

2. Regulatory Integration

Pollution Prevention in State Rules

In September 1998, Secretary George Meyer informed the Natural Resources Board of changes to DNR's rule development process. The purpose of these changes is to highlight pollution prevention as a potential alternative to pollution control.

Many DNR rules derive from federal legislation or regulations that leave the State little or no discretion on implementation methods. However, some other rules may present opportunities to promote cross-media or pollution prevention approaches. In all cases, DNR should do its best to ensure that rules do not inadvertently construct barriers to pollution prevention or inappropriately shift pollution from one medium to another.

The new policy involves two concrete changes to the rule development process. First, at the beginning of the rule development process the rule drafter must evaluate whether the proposed action presents a potential opportunity to promote pollution prevention. This explicitly reminds rule drafters to consider pollution prevention and it also helps DNR track the extent to which pollution prevention options are incorporated into State rules. The second change is a revision to the content of the background memo attached to proposed new rules. For any action where a potential opportunity to promote pollution prevention is identified, the rule drafter is now expected to include a pollution prevention analysis in the background memo.

Pollution Prevention Training

A workshop was held June 1 and 2, 1998 for DNR permit writers, inspectors, and business sector specialists from around the state. More than 40 DNR employees attended, representing the waste management, recycling, water pollution, air pollution, and cooperative assistance programs. The objective of the workshop was to provide training on how to integrate pollution prevention concepts into permits and inspections. The workshop concluded with a visit to GE Medical Systems, a Wisconsin business that volunteered to open their doors and enable a large group of DNR regulators to apply this pollution prevention training in a real manufacturing setting. After the workshop, participants were encouraged to share what they had learned with other permit writers and inspectors. They also developed proposals for specific projects to integrate pollution prevention concepts into their everyday work, and presented these proposals to senior DNR managers. Several proposals will be implemented over the next year.

Coordinated Pollution Prevention Meetings

CEA, SBCAAP, and SHWEC hold monthly pollution prevention coordination meetings. These meetings give staff the ability to: share information, solicit support for programs in other agencies, avoid duplication of efforts, leverage resources to move pollution prevention further than any one agency could independently, and plan for coordinated projects.

Between the face-to-face meetings, the pollution prevention assistance providers in the agencies are able to constantly communicate via an electronic mail list-server. This allows staff to share information in an efficient manner. Cooperative projects (e.g., workshops or training) are developed, grant applications are jointly developed and implemented, and workload issues are discussed to avoid duplication of effort. We have been very successful in securing EPA grant money under the Pollution Prevention Incentive for States (PPIS) program as we work to develop projects that meet goals of all three agencies. EPA wants to foster working partnerships in pollution prevention and have viewed joint proposals in a favorable light. This cooperative process demonstrates a conscious effort at good, efficient government that is a national model.

B. Education and Outreach Programs

1. Publications

DNR

The DNR maintains a publications clearinghouse which contains hundreds of publications, brochures, and posters on a wide variety of topics. CEA has developed Waste Reduction and Environmental Assistance order forms that make it easy for customers to order over 200 different publications on those specific subjects from the DNR clearinghouse. Publications on these order forms are organized into six categories:

- Programs and Resources Available to Help You;
- Setting Up Your Facility's Program;
- Wisconsin Environmental Requirements;
- Waste- or Chemical-Specific Assistance;
- Process-Specific Assistance; and,
- Industry-Specific Assistance.

The DNR clearinghouse and the order forms include a number of publications produced by other organizations, including SHWEC, DCOM, and EPA, which are distributed as a convenience to our mutual customers.

CEA staff distribute publications order forms at trade shows, at conferences, in mailings, and with the quarterly newsletter Waste•Less•News (described below). Customers can mail or fax the order form back to DNR. DNR staff also use the order form when they receive publication requests over the telephone. Copies of publications are stored in a warehouse and are mailed promptly to customers. Nearly all of the publications in the Clearinghouse are distributed free of charge.

DNR uses a computer system which stores information from publication order forms and tracks what is being ordered and by whom. This database allows CEA to monitor trends and determine what types of publications are most in demand, enabling us to continually improve this service. A summary of recent tracking data is provided below in Table 3. The numbers clearly indicate that interest in waste reduction and environmental assistance publications is very high, with more than 625,000 copies of these publications distributed through CEA's order forms over the past six years. However, the number of copies distributed has decreased each of the last two years, and this is a trend that will be monitored to determine if a change in the program or publications are needed.

Table 3. Publications Ordered from CEA Order Forms

Year	# of different titles ordered	total # of copies ordered
1992	7	746
1993	17	147,980
1994	109	77,994
1995	172	205,335
1996	205	120,244
1997	282	72,991

SHWEC

SHWEC staff produce numerous publications relating to pollution prevention and waste reduction that have been widely distributed for use not only in Wisconsin but have been adopted in other state and federal programs as well. Several publications such as the NIST/MEP, P2T2 Modules, the Small Business Waste Reduction Guide, and the "PrintWISer" Waste Reduction guide have been made available on EPA and other Internet sites.

2. Newsletter

CEA publishes a free quarterly newsletter for businesses called Waste•Less•News. This newsletter highlights current developments in waste reduction, recycling, and pollution prevention, as well as relevant changes to rules and regulations that affect Wisconsin businesses. Opportunities for technical and financial assistance are featured, along with a calendar of meetings and conferences of potential interest to readers and a form for ordering publications from the Clearinghouse.

The first issue of Waste•Less•News was published in 1990. Originally the newsletter was mailed to hazardous waste generators regulated by the DNR. Over the years, subscribers have been added and deleted, most often because a new customer was interested in receiving the newsletter. Also, the content of Waste•Less•News expanded over the years beyond the original focus on hazardous waste. It now regularly features articles on prevention of solid waste, air pollution, and water pollution. As of May 1998, Waste•Less•News subscribers totaled 6443. Based on recent estimates, circulation continues to grow by approximately 2% annually.

CEA plans to implement several measures in order to have better newsletter performance measures for next year. First, circulation data will be monitored to determine if interest in the newsletter is increasing or decreasing. Second, an **ordering coupon** will appear in every issue. And third, business sector specialists will make an effort to distribute more copies and solicit feedback from customers. There are also several major quality improvement changes in the works.

3. Recognition Programs

Prevention/Environment/Prosperity (P/E/P) Program

DNR created the P/E/P Award in 1993 to recognize successful businesses for their innovative pollution prevention methods. There are two main objectives of the program: first, to demonstrate that prevention of pollution can simultaneously lead to superior environmental results *and* economic prosperity; and second, to promote technology transfers between organizations.

Organizations nominate themselves for the P/E/P award by submitting an abstract describing their pollution prevention activity. DNR staff review the abstract and, if it merits further consideration, collaborate with the applicant to develop a detailed case study. Completed case studies document the environmental and economic results of the pollution prevention activities, and are made available through the Publications Clearinghouse in order to promote technology transfers. P/E/P Award winners are selected periodically out of the pool of available case studies.

Winners of the P/E/P award are recognized at meetings of the Natural Resources Board and receive a trophy suitable for display in their lobby. Since inception of the program, 41 Wisconsin organizations have been given P/E/P Awards for their achievements.

Over the last two years, DNR has witnessed a severe decline in the number of abstracts received and the number of case studies developed. Over the next year, business sector specialists will continue the P/E/P Award program. They will also monitor trends in applications to determine if public interest in the program has waned, and evaluate whether the program should be continued.

The Governor's Waste Reduction and Recycling Awards Program



The Governor's Waste Reduction and Recycling Awards Program, having completed its sixth year, is a joint effort between Wisconsin's Departments of Administration and Natural Resources, the Governor's office, and the Recycling Market Development Board.

This competitive, formal awards program annually applauds Wisconsin individuals, businesses, schools and communities for making significant strides in reducing, reusing, recycling, buying recycled products and developing markets for recyclable items. It motivates others in Wisconsin to duplicate successful waste reduction and recycling programs and encourages partnerships and joint efforts. The program fosters feelings of pride and accomplishment and builds positive community spirit. The program culminates in a formal awards ceremony hosted by Gov. Tommy G. Thompson and DNR Secretary George E. Meyer.

The program, now in its sixth year, promotes successful recycling activities, which generates a greater quantity of and a higher quality of recyclable materials for market. The program provides an opportunity to highlight successful programs from which others can learn and replicate. Elements of the program, such as the application form, the news releases and the winners' publicity, inform people in Wisconsin about the importance and viability of buying recycled products, using recyclable items as raw materials and reducing and recycling to keep items, especially banned items, out of landfills.

Sponsoring organizations, such as environmental groups, business and trade associations, and nonprofit, government and youth organizations, help publicize the program and the winners' successes. At this time, sponsors are not required to donate money to the program. Instead, sponsors publicize the program by printing ads, stories and/or press releases provided to them and also help distribute application forms and/or postcards to their membership. The 1998 program had 41 sponsors, including SHWEC and DCOM.

Since the program began, 120 awards have been given. The award recipients have received a great deal of publicity via local and state newspapers, magazines, newsletters, radio interviews and other media sources. In addition, the program sponsors help publicize the winners' efforts. The program coordinators collect hundreds of program-related news articles each year.

In recent years, the number of applicants for the Governor's Awards program has decreased, as Table 4 indicates. This raises concern about the future of the program.

Table 4. Applications for the Governor's Waste Reduction and Recycling Awards

Year	# of applicants
1993	130
1994	188
1995	145
1996	97
1997	76
1998	53

Governor's Award for Excellence in Hazardous Waste Reduction

DCOM and the Federation of Environmental Technologists are sponsoring this year's Governor's Award for Excellence in Hazardous Waste Reduction. The program, now in its thirteenth year, awards companies who have cut their costs and cut their production of hazardous waste. The award evaluates these four criteria: reduction in degree and amount of toxic waste; economic performance - measured by profits generated, costs

reduced, and payback periods; transferability of processes or techniques for similar applications for use by other industries, organizations, or institutions; and commitment to help others by sharing information and expertise.

4. Technical Assistance

SHWEC

Direct environmental technical assistance for Wisconsin business and industry is the core of the SHWEC pollution prevention program. In 1997, SHWEC staff provided responses to well over 350 requests from clients located in 50 counties. SHWEC specialists provided on-site assessments and site visits resulting in reports or written research responses for about 70 companies in 1997. Over \$4 million in potential cost savings were identified, and a detailed look at just 8 of the companies receiving assistance showed more than \$200,000 in actual cost savings due to SHWEC's efforts.

Technical assistance most often takes the form of answering telephone inquiries for information, written research responses to such inquiries, or by providing on-site assessments and site visits, in response to direct requests from clients. Contacts result from outreach programs, networking, survey work and from frequent referrals. SHWEC staff are proud to provide immediate service to clients and partners through the use of the SHWEC list-serve, the Best Practices Hotline in Green Bay, and through the dedicated efforts of support staff assigned to SHWEC.

SHWEC staff expend approximately 2-4 hours for each request for information resulting in a written research response. Assessments, however, may take two to five days to complete background work, conduct the site visit, research technology-material-process options, write a complete report and in some cases follow-up the assessment report with additional written or verbal information.

For example, the health care industry was assisted by SHWEC staff in Milwaukee. They completed an EPA-funded project to provide technical assistance and education to medical and dental facilities, focused on the elimination of mercury. Several major hospitals in the Milwaukee area and hospitals in other areas of Wisconsin were provided waste assessments and other technical assistance. This assistance has helped them raise awareness and implement mercury reduction/elimination programs in their facilities. Fact sheets and a publication developed specifically for dental facilities were also produced as an outcome of the program. In addition, one of the first fact sheets for the veterinary medical industry was published.

SHWEC provides environmental technical assistance and expertise for the Wisconsin Manufacturing Extension Partnership (WMEP) program. WMEP is designed to provide improvements in manufacturing efficiency and productivity and other services, including environmental services, to small and medium-sized manufacturers. In 1997, SHWEC staff provided intensive 2-day training sessions for WMEP agents to familiarize them with environmental issues and to make them knowledgeable of SHWEC and other state resources available for WMEP clients. In 1998, SHWEC staff in the audit grant program and IRAP program will provide matching support for WMEP with one SHWEC specialist assigned to each of the 3 WMEP regions.

The Wisconsin Recycling Market Development Board (RMDB), which is administered by the Department of Commerce, provides funding for SHWEC specialists in the Industrial Recycling Assistance Program (IRAP). IRAP conducts environmental assessments focused on both pollution prevention and industrial recycling. In 1997, IRAP completed 25 recycling and waste reduction assessments and is committed to accomplishing at least 40 assessments in 1998. This program also works on recycling market development and provides business referrals to the RMDB commodity specialists who develop and introduce new recycling projects for RMDB Board funding decisions. Clients gave SHWEC's Industrial Recycling Assistance Program an average rating of 4.3 on a scale from 1 (lowest rating) to 5 (highest rating).

DCOMM

DCOM houses the Small Business Technical and Environmental Compliance Assistance Program (SBTCP). The SBTCP contains the small business ombudsman, the small business assistance program (SBCAAP), and the compliance advisory panel. Established in April 1992, these programs were a component of Wisconsin's State Implementation Plan to meet Title V of the Clean Air Act of 1990.

SBCAAP maintains an 800 number to assist businesses in determining which environmental regulations impact them and provides workshops, meetings and outreach materials on regulatory issues. SBCAAP also provides permit, compliance and pollution prevention assistance targeted toward small businesses.

Through communication and periodic meetings with other practitioners in the state, SBCAAP staff work the pollution prevention message into outreach materials prepared for their clientele. All workshops and seminars coordinated by SBCAAP since 1995 have included a waste reduction/pollution prevention component. SBCAAP provided 62 workshops and seminars in 1997 and reached more than 3700 people from small Wisconsin businesses. In addition to providing businesses with detailed environmental compliance information through these workshops. In many instances, alternate production scenarios that use pollution prevention techniques can exempt companies from permits or emission limits along with saving money.

5. Pollution Prevention Curriculum & Training

SHWEC continues to promote pollution prevention education and training as an important part of educating students and industries. SHWEC staff advance this education as an important part of the core curriculum within the University of Wisconsin System - both in undergraduate and graduate level programs.

A semester-long pollution prevention course was provided at the UW-Madison campus through the College of Engineering and Engineering Professional Development. This innovative class included site visits and an actual waste audit of a large manufacturing facility located in the Madison area. SHWEC specialists, who share appointments with the College of Engineering and in Engineering Professional Development at UW-Madison, also provided several short-course programs pertaining to pollution prevention and environmental management systems (EMS).

At the UW-Green Bay campus, SHWEC staff provided the curriculum and delivery of a semester-long, macro-scale course related to protection of ecosystems and industrial pollution prevention. This course is another example of an innovative opportunity for students to learn in a hands-on setting. Students visited several different industrial facilities in the Green Bay area, providing exposure to a myriad of environmental issues that they may face in the future. SHWEC staff also gave guest lectures in other environmental courses offered through the Natural and Applied Sciences Unit at UW-Green Bay.

In Milwaukee, SHWEC staff developed an automotive repair and metal fabrication pollution prevention training course. This was part of an EPA-funded pollution prevention project for the near south side of Milwaukee, which contains numerous minority-owned small businesses. Training was provided directly to students in the jobs-to-work program and to "train the trainers" at the Milwaukee Esperanza Unida Training Center in the 16th Street Project area. This project also included several assessments of minority-owned automotive repair shops in the area. Follow-up in the project area indicates that several of the small shops have implemented pollution prevention/waste reduction ideas presented to them.

IV. Innovative Approaches

Wisconsin has assumed a leadership role in investigating new approaches to environmental management. One such approach is ISO 14000, one of the most talked-about recent developments in international environmental

protection. A second approach, the Environmental Cooperation Pilot Program, is based on agreements with businesses that demonstrate superior environmental performance in exchange for regulatory flexibility. These innovative approaches point the way to a future in which public participation and pollution prevention take precedence over government regulation, enforcement, and pollution control.

A. ISO 14000

ISO 14000 is a series of **voluntary** standards administered by the International Organization for Standardization. The foundation of the series is ISO 14001, a standard for "environmental management systems." An environmental management system (EMS) is a collection of policy, procedures, processes, and documents that an organization develops and uses in order to systematically address their environmental impacts. ISO 14000 is similar conceptually to "ISO 9000," an earlier voluntary standard for total quality management which revolutionized the way many international businesses manage the quality of their products and prevent product defects. The hope is that ISO 14000 will similarly improve environmental quality and increase the emphasis on pollution prevention.

Businesses and other organizations can choose to adopt ISO 14001 as a means of demonstrating to suppliers, customers, and the public their commitment to environmental regulatory compliance, prevention of pollution, and continual improvement. Some, but not all, will seek official certification that they comply with ISO 14001. Even though compliance with the standard is voluntary, it is likely that some businesses (e.g., some automobile manufacturers) will require all of their suppliers to be ISO 14001 certified, and it's even possible that some countries will use certification as a requirement for international trade. This new relationship between environmental management and global trade could bring environmental issues into the mainstream of corporate decision making.

The emergence of ISO 14000 raises several interesting questions about the role of environmental regulatory agencies. The first question is what, if anything, should a regulatory agency do to learn about and promote a voluntary standard? The second, and perhaps more important question, is will the environmental performance of ISO-certified businesses so far exceed that of non-certified businesses that they merit less scrutiny from regulators? On the first question, DNR has taken a very active approach; on the second, the approach is more tentative and experimental. A brief summary of recent and current activity on both issues follows.

Learning About and Promoting ISO 14000

DNR actively participates in three separate groups dedicated to sharing knowledge and experience with ISO 14000 and discussing policy implications. At the state level, DNR formed an ISO 14000 working group in December 1995 comprised of representatives from business, government, academia, law, technical colleges and public interest groups.

The initial goals of the working group were:

1. To share information and discuss issues related to ISO 14000;
2. To facilitate the dissemination of knowledge and information on ISO 14000;
3. To coordinate efforts amongst agencies and organizations; and,
4. To provide input and initial suggestions on areas of concern and further research to DNR.

Wisconsin is also partnered with the state of Pennsylvania as participants in a Wharton School of Business Roundtable. Participants include EPA headquarters, EPA Regions III and V, the University of Wisconsin's La Follette Institute, as well as public interest groups, government and business participants from both states.

And finally, at the national level, DNR is participating in the Multi-State Working Group (MSWG) on ISO 14000. The initial focus of this group is to develop a common set of questions and measurements by which ISO

pilot projects around the nation can be evaluated. This group includes representatives from EPA, state agencies, business, and public interest groups.

In 1998, CEA's business sector specialists participated in a two-day training session on ISO 14001 taught by NSF International. This short course provided staff with basic information to work with companies interested in ISO 14001. One business sector specialist is already included on a company's EMS development team and is learning first hand what it takes and what it means to be ISO 14001 certified.

SHWEC has provided several seminars, short course programs, and guest lectures on subjects related to ISO 14000 and environmental management systems. SHWEC and the University of Wisconsin - Madison Department of Engineering Professional Development are developing a coalition of Wisconsin industries that will work collaboratively to use environmental management systems to improve environmental and financial performance.

Testing the Performance of ISO 14001-Certified Businesses

Some observers predict that organizations with an ISO 14001-certified EMS will be better environmental performers than their peers and will therefore merit less scrutiny from regulatory agencies. Others counter that the standard is not enforceable, does not even require compliance with environmental laws, and therefore should never be allowed to substitute for regulatory oversight. In order to test these hypotheses and evaluate the merits of ISO 14001, DNR is participating in a nationwide research project sponsored by the EPA Office of Water. The ISO 14001 Data Gathering Study, which results from discussions of the Multi-State Working Group, will collect data on the compliance and environmental performance of businesses with formal environmental management systems. (Participating companies must have an EMS or be developing one, but they aren't required to be ISO 14001 certified.) Special emphasis will be placed on a comparison of performance before and after the EMS is established at each company. Data will be maintained by the University of North Carolina (UNC) in a national database.

Seven Wisconsin businesses have volunteered to participate in the ISO 14001 Data Gathering Study. For the next two years, these businesses will work with business sector specialists and experts at UNC to collect data and complete standardized questionnaires. Ultimately, the goal of the project is to provide a factual basis for the policy discussions about whether to lessen the regulatory burden of ISO 14001 certified businesses.

Survey of Companies

In 1997, the Wisconsin Environmental Working Group, an affiliate of Wisconsin Manufacturers and Commerce (in cooperation with UW Extension and DCOM), surveyed 816 companies in the state about their environmental management systems (EMS's) and ISO 14000 specifically. Two hundred twenty-seven companies responded, and when asked to describe their company's EMS, indicated that:

- 18% of the small companies (<50 employees) have a written pollution prevention plan;
- 33% of medium companies (50-500 employees) have a written pollution prevention plan; and
- 50% of large companies (>500 employees) have a written pollution prevention plan.

These numbers represent an opportunity for Wisconsin's pollution prevention assistance community to engage more companies in pollution prevention planning. As more companies develop EMS's or certify to the ISO 14000 standard (which requires a commitment to prevention of pollution), we will see an increase in planning and implementation of pollution prevention goals. The pollution prevention assistance community should be aware of this trend and be prepared to assist businesses in these efforts.

B. Environmental Cooperation Pilot Program

The Environmental Cooperation Pilot Program is a new pilot program designed to evaluate innovative environmental regulatory methods. It was introduced by Governor Thompson and passed by the State Legislature as part of the 1997-1999 Biennial Budget. The program provides DNR with the authority to sign up to ten cooperative environmental agreements over the next five years with persons who own or operate facilities that are covered by licenses or permits under current law. As of July 1998, DNR has received several inquiries, but no agreements have been signed.

What will be included in the cooperative environmental agreements?

- Plans to implement an environmental management system.
- A commitment to superior environmental performance.
- Specified waste reduction goals in measurable and verifiable terms.
- Pollution limits that are at least as stringent as those prescribed in current law.
- Any approvals that are replaced by the agreement.
- Any operational flexibility and variances granted.
- All applicable rules and regulations covering a company are eligible for inclusion.
- A commitment to release periodic performance evaluations and report any violations discovered.
- A plan for public involvement and participation.

What are the benefits?

Companies participating in this program are rewarded for finding innovative ways to achieve superior environmental performance. In exchange for their extraordinary pollution prevention efforts, they are granted increased flexibility in meeting regulatory burdens. More than ever before, pollution prevention can be used to save the company both time and money.

As a regulatory agency, DNR also expects to benefit from these agreements. Whole-facility regulation will allow DNR to examine better than ever before the interaction of air, water, and waste regulations, and identify areas of improvement. Institution of an environmental management system should lead to improved compliance, generate better data on pollution prevention, and allow a more systematic review of a company's impact on the environment.

And finally, the public will benefit from the Environmental Cooperation Program in two critical ways. First and foremost, the public will see superior environmental results, a prerequisite of any agreement, and a greater commitment to pollution prevention. And second, the public will be involved and informed as companies set goals, some of them over and above what the regulations require, and track and report progress.

V. Success Stories

This year's annual report highlights three partnerships that have been particularly successful: the Great Printers Project, the Wisconsin Drycleaner's Partnership, and a Pollution Prevention Partnership with the pulp and paper industry. All are excellent examples of the benefits of cooperation between businesses, government agencies, University Extension agents, and environmental groups. This chapter also highlights some revealing numbers from Wisconsin's Toxics Release Inventory (TRI) that indicate an underlying pollution prevention success story.

A. Great Printers Project

1. Project Description

The Great Printers (GP) Project is a regional partnership led by the Environmental Defense Fund (EDF), Council of Great Lakes Governors (the Council) and Printing Industries of America. The project began in early 1993 when the Council and EDF chose the printing industry, specifically lithographic printers, as a target sector for the Great Lakes region. The Wisconsin Great Printers Project promotes waste reduction/pollution prevention as the primary choice of the lithographic printing industry in meeting and exceeding its environmental and human health protection responsibilities. To accomplish this goal, Wisconsin worked, and continues to put forth effort, to simplify reporting procedures, make regulations more understandable, and improve the information flow between printers, suppliers, and customers. Partners in Wisconsin's project include the DNR, Citizens for a Better Environment (CBE), SHWEC, and Printing Industries of Wisconsin (PIW). The Project received funding from four sources, Great Lakes Protection Fund, EPA Environmental Technologies Initiative grant, and 1994 and 1995 EPA Pollution Prevention Incentives for States grants.

Wisconsin's main goals were to: simplify governmental requirements so that printers can readily understand, meet and exceed their environmental obligations; improve printers access to technology and pollution prevention resources; develop a consolidated reporting system for use by all reporters in the state including a printer-specific version for lithographic printers; increase demand for and awareness of "green" printing; assist printers in their efforts to conduct compliance and pollution prevention assessments, and bring more information to Wisconsin printers through outreach, mailings, and workshops.

Wisconsin's initial outreach effort consisted of a mailing to all printers in the state co-signed by Governor Tommy Thompson and Jack Hayes, then-president of Printing Industries of Wisconsin. The mailing contained a "commitment form" offering printers the opportunity to be part of the Project by committing to the Great Printers Principles. By agreeing to and signing the agreement, printers become "Great Printers" in Wisconsin. The principles to which each partner printer commits are as follows:

- Comply with applicable environmental health and safety laws;
- Go beyond compliance by employing the most environmentally sound practices consistent with the following management principles:
 - Maximize reduction of waste at the source;
 - Reuse or recycle waste that cannot be prevented; and,
 - Maximize energy efficiency in the print shop;
 - Seek to continuously improve on environmental performance through periodic assessments of operations, materials, and products, and by drawing on information and ideas from employees, print buyers, suppliers and neighbors.

The state partners collaborated to create and distribute information to Wisconsin Great Printers. Products produced include: electronic consolidated reporting with printer specific assistance; compliance self-assessment and pollution prevention checklists; an environmental regulatory summary; PrintWI\$er, a thorough manual covering environmental regulations and pollution prevention alternatives for printers; "green" printing fact sheets, and; a mailing to Wisconsin Stewardship Network members and other Wisconsin conservationists which included information on print buying and designing alternatives as well as examples of print specifications to be included on printed documents. Also distributed to all Great Printers was Minnesota Environmental Initiative's (MEI) *Print Buyer Guidelines*, a *Printed by a Wisconsin Great Printer* logo, and a baseline survey for a project measurement study.

2. Innovations

Approach

Bringing together a state regulatory agency, a technical assistance provider, an environmental group and an industry trade association was essential in making this project work. The differing viewpoints and opinions worked to make the project stronger while providing more avenues for outreach and support.

Consolidated Reporting System

DNR consolidated its air, hazardous waste, and Toxic Release Inventory reporting forms into one simple electronic format sent to all reporting Wisconsin businesses for the 1996 reporting year. In addition to the reporting forms, the system also contains pollution prevention and technical assistance information for all reporters. Though this reporting system was developed for all reporters in the state (not only printers), the Great Printers Project was one of the driving forces behind it. Printers received an enhanced version of the consolidated reporting system that included information on technical assistance and pollution prevention opportunities and resources as well as printer-specific examples of emission calculations. Though computer compatibility and user ability caused some concern and frustration for reporters, overall the new electronic, combined reporting format was positively received.

In early January 1998, Wisconsin sent out the second annual consolidated reporting package (for the 1997 reporting year) to all reporters across the state. Due to timing issues, Wisconsin was not able to include the TRI report this year. Wisconsin printers again received a special "fully loaded" version of the reporting system. Their version contains pollution prevention options and examples specifically geared toward printers as well as different examples of emission calculations. Scrolling through various screens, printers are able to "pull up" technical assistance information, publication order forms, case study examples, and pollution prevention and technical assistance contact information.

As previously mentioned in earlier reports, Consolidated Reporting was well received by the reporting public.

PNEAC

In 1994, the Great Printers Project recommended that EPA establish a national resource center to provide reliable, up-to-date environmental information specifically on the printing industry. This led to the establishment of PNEAC, the Printers National Environmental Assistance Center. PNEAC links technical assistance organizations and printing trade organizations, efficiently providing current compliance assistance and pollution prevention information to the industry. PNEAC created Internet e-mail listservers to enable technical assistance providers and trade associations to work collaboratively in addressing printing compliance and pollution prevention questions. The center also developed an industry-focused Web site, conducted several training events and is developing a toll-free phone and fax-back service. SHWEC staff helped to develop and implement this national electronic resource center.

PRINT WI\$eR

PRINT WI\$eR is a 200+ page handbook for Wisconsin lithographic printers on environmental compliance and pollution prevention. It contains a thorough regulatory summary, a compliance self-assessment manual and a pollution prevention checklist to assist printers with both their environmental reporting and waste reduction efforts. These forms include a commitment from Great Printers to implement three pollution prevention options in their facility over the next year in order to maintain their Great Printer status. PRINT WI\$eR was distributed at pollution prevention workshops for printers held throughout the state. Each Wisconsin Great Printer has received a complimentary copy of the useful manual.

PRINT WI\$eR Workshops

Wisconsin printers received three mailings inviting them to participate in the workshops (one from DNR Secretary George Meyer, one from printing sector specialist Mike Sloat, and one from PIW's environmental committee), and received a copy of the PRINT WI\$eR training manual. A \$40 discount was offered to Great Printers. The January PRINT WI\$eR workshops were a success. Over 120 printers attended the three sessions, leading to good discussion and information sharing both between printers themselves and with Project partners.

The PRINT WISeR workbook was exceptionally well received - the only complaint being that printers did not have such a resource until now.

Video Conference

SHWEC held the first international "*Green and Profitable Printing*" Video Conference in 1996, reaching 1500 participants in 30 states and Canada. The second, equally successful, video conference was held December 9, 1997. The 1997 conference included in-plant footage of three Wisconsin printers; Kubin-Nicholson, Inland Press, and Graphics Factory. A course notebook accompanied the video conference. In a later survey, more than 90% of the printers said they had adopted one or more of the waste reduction strategies featured.

Printing Sector Specialist

A DNR employee works with printers of all sizes across the state, providing a direct link between DNR and the printing industry. This sector specialist was instrumental in the development of a consistent lithographic printing policy used as guidance for the Air Management program.

3. Results to Date

Progress of the Great Printers project can be briefly summarized as follows:

- One hundred twenty-eight printers signed onto the project in Wisconsin, and currently (1998) there are 73 printers who have maintained their membership in the project since its inception 3 years ago;
- Many products promoting pollution prevention, "green" print buying and technical assistance were developed and distributed to all Great Printers;
- Communication improved between project partners and Wisconsin printers;
- Communication also improved between DNR, CBE, SHWEC and PIW;
- A survey was conducted to evaluate Great Printers' progress in preventing pollution (mostly to establish a baseline);
- A phone survey of printers who attended the May 1996 video conference, *Green and Profitable Printing*, found 92% said they improved compliance of their shop as a result of the video conference, and 97% said they adopted one or more of the waste reduction strategies featured in the video.

The effort to promote and track progress of the Great Printers project continues, with a current emphasis on the following three areas:

a. Annual Compliance Checkup and Pollution Prevention Checklist

- Returned checklists are being collected and compiled. PIW's environmental consultant is reviewing and analyzing the compliance self-assessments and pollution prevention checklists for further action and continuation of GP status. Great Printers who do not return the checklists will lose their GP status. Printers who do return their checklists will maintain GP status and continue to receive products of the Project and recognition.

b. Marketing

- CBE continues to educate its canvass staff and the public about environmentally sound printing and the Great Printers Project;
- All partners continue to distribute MEI's *Print Buyer Guidelines*;

- Wisconsin's Department of Administration (DOA) mailed letters and GP brochures to over 300 potential state printers recommending the project. This outreach effort recruited a number of new Great Printers and improved communication between DNR and DOA.

c. Measurement

- CBE contracted with Applied Research, Inc. to do a measurement study of the printing industry in Wisconsin and the Great Printers Project. Results of the statewide survey, *Study of the Lithographic Printing Industry in Wisconsin*, prepared for CBE, is complete and available for review on the PNEAC website. This survey developed baseline measures for the Great Printers Project against which changes in future years may be assessed.

d. Continuing Education

- Three training sessions were sponsored by PIW, SHWEC and DNR first quarter of 1998. Training focused on regulatory requirements from DNR and OSHA. Other pertinent portions of the training were pollution prevention tips, environmental management systems and work sheets for required submittals to DNR. Over 70 attended, with greater than 50% being non-Great Printers. Each was given a three-ring binder entitled "Print Wiser" and updates will be sent when needed.

DNR plans to continue outreach efforts to all printers in the state, especially Great Printers. We intend to continue recognizing Great Printers and providing them with information, service, and support.

B. Wisconsin Drycleaner's Partnership

The Wisconsin Drycleaner's Partnership is a voluntary agreement to reduce and possibly eliminate the use of perchloroethylene and other halogenated solvents in the drycleaning industry. Partners include professional drycleaners, DNR, the Wisconsin Fabricare Institute, SBCAAP, SHWEC, and the Center for Neighborhood Technology. Citizen's for a Better Environment (CBE) provides additional insight. Partnership goals include safeguarding the environment while providing the public with high quality cleaning services.

The Five Star Recognition Program, begun in 1996, is a means to recognize drycleaners who voluntarily work to minimize wastes. It is one of the many efforts of the Wisconsin Fabricare Institute, the trade association for Wisconsin drycleaners, to educate and assist members in maintaining a high degree of professionalism throughout the industry. The five levels of achievement build upon basic compliance with state and federal environmental and worker safety regulations. Requirements encourage public outreach and increasing drycleaner knowledge and experience in preventing pollution.

The Wisconsin Fabricare Institute approached SHWEC in 1996 to develop an environmental certification program specifically for Wisconsin drycleaners. In 1997 SHWEC completed and implemented the Wisconsin Certified Environmental Drycleaner (WI-CED) curriculum. The WI-CED is one of only four other similar drycleaner certification programs in the United States.

That four new drycleaners became a part of the Five Star Program and five upgraded by at least one star level over the past year is evidence of the continued growth of the program. In addition, 33 drycleaners were newly certified as WI-Professional Drycleaners. Twenty drycleaners were qualified or re-qualified as WI-Certified Environmental Drycleaners. Additionally, SHWEC re-certified 23 cleaners to the WI-CED from the International Fabricare CED program. There are now a total of 64 WI-CED's in Wisconsin after only one full year of the program.

In a survey conducted to assess satisfaction with the program, drycleaners were asked which environmental practices they had instituted because of outreach efforts of the Drycleaner Partnership. Seventy-five percent of those responding had increased solvent mileage through equipment maintenance. Half of the respondents had been able to convert to closed-loop machines as a further conservation measure and emissions control step. Hazardous waste handling and attention to spill prevention and clean-up were other actions cleaners have concentrated on in recent years. Nearly everyone was recycling plastic garment bags.

When asked which aspects of the Five Star Program were most challenging, respondents most often cited achieving the solvent mileage and wet cleaning criteria of the Four and Five Star levels. There weren't enough data to determine an average solvent mileage but machinery age and type were cited as the most frequent barriers to obtaining a higher mileage. On average, respondents were wet-cleaning about 16 percent of clothing other than shirts and felt they could boost that regularly to about 20 percent. Fabric types and dyes were the most often cited difficulties in increasing wet cleaning. The Partnership agreed to re-assess the Five Star Program criteria and keep challenging requirements for the highest recognition levels. However, at the Four and Five Star levels, cleaners will strive for 25 and 30 percent wet cleaning but have a choice to reach those goals or an average annual solvent mileage of 600 and 700 pounds of articles cleaned per gallon of solvent. The Partnership's efforts over the coming year will be to better market the program within the industry as well as to the public.

The Center for Neighborhood Technology, a Chicago-based group, has offered two wet-cleaning workshops in Wisconsin, which have been well attended. Participants have asked challenging questions and attempted to allay fears about trying a new technique. There is continued interest in carbon dioxide technology with several companies willing to pilot test equipment in Wisconsin if logistical and economic assistance make it feasible.

Drycleaners are actively involved in writing natural resources rules to implement the recently enacted Dry Cleaner Environmental Response (cleanup) Fund. The DERF is an industry-initiated, self-imposed fee on drycleaning receipts, which will be used to reimburse cleaners for the cost of cleaning up contaminated sites. The program is expected to be implemented in 1999.

C. Pollution Prevention Partnership

In 1993, leaders from Wisconsin's pulp and paper industry publicly committed their industry to continuous environmental progress with an emphasis on pollution prevention. The Pollution Prevention Partnership, formed between Wisconsin's pulp and paper industry and the DNR, agreed to specific goals for reducing environmental releases of seven targeted chemicals by 1999. P3, as the program is also known, covers air and wastewater discharges along with solid and hazardous wastes. Voluntary reduction goals for chloroform, formaldehyde, and hydrogen sulfide have already been reached. The industry is still working at 1999 goals for chlorine, methanol, phosphorus and xylene, and goals for all but phosphorus will probably be achieved by 1999. All of the reductions are voluntary and go "beyond compliance" with state and federal regulations.

D. Pollution Prevention Data from the Toxics Release Inventory

As mentioned in an earlier chapter, Section 8 of the annual Toxics Release Inventory (TRI) provides one of the few available sources of pollution prevention data. One question on the reporting form asks companies if they have engaged in any source reduction (i.e., pollution prevention) activities during the reporting year. The answers to this question are summarized in the following table:

Year	Total # of TRI Facilities in Wisconsin	Facilities Reporting Pollution Prevention	
		#	%
1991	897	28	3.1

1992	931	208	22.3
1993	923	265	28.7
1994	904	245	27.1
1995	879	213	24.2
1996	893	211	23.6

The numbers suggest that roughly 1 in 4 Wisconsin businesses employs pollution prevention each year. A slight downward trend may indicate that companies have already undertaken the most obvious steps and that additional pollution prevention activities are becoming harder to identify and/or more difficult to implement.

TRI Section 8 also asks companies to categorize the types of pollution prevention activities in which they engaged. For the years 1991 to 1996, two of the most interesting results gleaned from the responses are as follows:

- The most common types of pollution prevention activities were in the "good operating practices" category (e.g., improved maintenance procedures or changing production schedules to minimize feedstock changes). This suggests that low-cost, common sense options are the first priority.
- Almost every year, more than one-third of those companies engaging in pollution prevention activities reported *both* raw material changes and process changes, and more than 1 in 8 also reported product changes. This suggests that a significant number of Wisconsin businesses are reducing pollution by completely re-engineering their products and processes.

VI. Next Steps

Program evaluation is an ongoing concern for pollution prevention programs. This 1998 progress report is the first to emphasize goal setting and performance measurement. Subsequent annual reports will build on this foundation in an effort at continuous quality improvement. This final chapter summarizes some of the most significant steps that need to be accomplished in order to facilitate program evaluation and make the 1999 report a success.

A. Define or Refine Remaining Goals and Performance Measures

In section two of this report, we made it clear that most of our existing goals and measures relate to output (i.e., how productive is the program?) rather than quality (i.e., how good is the program and how can it be better?). The next step is to define goals and performance measures that relate to customer satisfaction and efficiency. We may also need to refine some of the existing goals.

1. Customer Satisfaction

As a pollution prevention customer service Bureau, CEA should be judged in large part on customer satisfaction. The best way to determine if customers are satisfied is to ask them. Over the next year, CEA will design customer satisfaction surveys and solicit the responses of businesses and organizations we serve. The surveys should have a generic part, applicable to any business sector, and a second part that is specific to each sector. A survey methodology will be tested on one (or a few) sector(s) in the next year, then expanded to all sectors in following years.

Two other potential customer service measures will be studied over the next year. They have been identified as valuable conceptually, but perhaps difficult or impossible to implement practically. First, determine a way to track response time on customer requests and complaints, then set goals and measure performance. And second, figure out a way to track the average number of phone calls customers make before getting satisfactory answers to questions. If either of these types of measures prove to be practicable, we will include them in future reports.

2. Efficiency

In an earlier chapter, we explained how the most challenging, but perhaps most important, performance measures are those that look at the efficiency of pollution prevention and the effectiveness of cooperative environmental assistance programs. This is an area where answers are not obvious, and our approach will necessarily evolve over time.

As a next step, we have identified some key questions that we think get to the heart of the "efficiency" debate. These questions will serve as a focal point of our effort. In next year's report, we hope to be able to list specific goals and performance measures that begin to answer these five questions:

- Do businesses that receive pollution prevention assistance from the government perform better than their competitors, environmentally and/or economically?
- Do they have less trouble with compliance than other businesses?
- Do pollution prevention programs save businesses more money than the public cost of promoting such programs?
- Does assigning a business sector specialist improve environmental performance in a sector?
- How does Wisconsin compare to other states in terms of environmental performance and compliance costs?

The Toxics Release Inventory, and particularly the section 8 pollution prevention data, is expected to be a valuable source of information for this analysis.

3. Less Arbitrary Goals

Most of the initial goals stated in this report are fairly arbitrary. Some of them are simply a commitment to continue producing at historic levels. A major task that remains ahead is to figure out if we can set goals that are based on *needed* levels of performance or *objective* standards of excellence. This will have to be part of a larger effort to continually improve quality and update our goals to ensure that they are ambitious, meaningful, and appropriate.

4. Integrated Goals for Pollution Prevention Assistance Providers

Each of the partner organizations contributing to this report fills a niche and provides unique pollution prevention assistance for the State of Wisconsin. Although efforts across agencies are not duplicated, there is enough cooperation and coordination already happening that it makes sense to consider integrated goals. Over the next year, DNR, SHWEC, and SBCAAP will examine mutual priorities and consider the efficacy of developing cross-agency pollution prevention goals.

B. Include Goals and Performance Measures in Work Planning

Wisconsin's pollution prevention goals will not be met unless adequate staff time is dedicated to each objective. Annual work planning is the mechanism for ensuring this happens. Each year, managers allocate time to specific projects and develop detailed work plans for each program. In all future work plans, management must focus work plans more on pollution prevention goals and allow time for performance measurement. Goals and

performance measures should be specified in individual work plans so that staff can track progress throughout the year.

C. Include Goals and Performance Measures in Annual

Performance Evaluations

At the end of each fiscal year, DNR staff are evaluated by their supervisors to determine if the previous year's objectives were met and to establish objectives for the coming year. In this year's evaluations (July 1998), CEA placed more attention than ever before on specific, measurable goals. As goals are refined and new goals are defined, future performance evaluations will need to be very closely tied to established goals and should specify objective means for evaluating performance. The ultimate challenge is to fully integrate pollution prevention into all environmental programs.

D. Link to Environmental Performance Partnership Agreement (EnPPA)

The purpose of the EnPPA program is to get EPA and state agencies to mutually agree on meaningful priorities and performance measures. Instead of EPA dictating a "one size fits all" approach, priorities and measures are tailored to the environmental needs of individual states.

The 1998-1999 Performance Partnership Agreement between DNR and EPA describes a wide variety of goals and performance measures for DNR, including several related to pollution prevention and a few specific to other CEA initiatives. In most cases, goals and measures are stated broadly and do not yet facilitate an honest evaluation of program effectiveness. Still, this is the best effort to date to publicly commit DNR to performance goals and provides an excellent foundation for program evaluation. The next step is to ensure that future Performance Partnership Agreements create clear priorities for pollution prevention and other CEA programs, establish the kinds of goals that allow success (or failure) to be demonstrated, and specify reasonable performance measurements that facilitate program evaluation.

On the national level, a group called the Environmental Council of the States (ECOS), representing state environmental agencies, has been negotiating with EPA on "core" performance measures for Performance Partnership Agreements. Core performance measures are used as a baseline and a default by all states that sign agreements with EPA. Individual states then negotiate changes or supplemental measures based on their individual needs and priorities. An ECOS committee began work on developing core performance measures for pollution prevention in 1998. Although nothing is final yet, Wisconsin will pay close attention to this effort. If core performance measures are developed for pollution prevention, they of course will be an integral part of all our future progress reports.

E. Plan for Subsequent Progress Reports

We intend to produce progress reports similar to this one, but more closely linked to the EnPPA, on an annual basis. The highest priority for next year's report is to follow through on the "next steps" described above. Future progress reports will have much more of a focus on program evaluation. They will include much less abstract discussion of performance measurement, and much more actual performance data. Future reports may also include analyses and/or policy recommendations based on the data presented.

For More Information, Contact...

1) Questions about this Report, or Pollution Prevention Performance Measures at Wisconsin DNR

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2) Questions about Pollution Prevention at Wisconsin DNR, Regulatory Integration, the Prevention/Environment/Prosperity (P/E/P) Program, ISO 14001, or the Environmental Cooperation Pilot Program

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3) Questions about the Publications Clearinghouse or Waste * Less * News

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6) Questions about the Dry Cleaner's Five Star Recognition Program

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7) Questions about Appendix A and Pollution Prevention Programs at Wisconsin Department of Commerce

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- 5 Extremely Valuable 4 Highly valuable 3 fairly valuable
 2 marginally valuable 1 not useful

What one thing in this report did you find most informative and/or valuable, and why?

What one thing in this report did you find least interesting/informative/valuable, and why?

What should we do to improve future progress reports?

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