
POLLUTION PREVENTION

1999 ANNUAL REPORT



Department of Natural Resources
Department of Commerce
University of Wisconsin Extension



POLLUTION PREVENTION REPORT—1999

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Pollution prevention is a process that avoids or minimizes the creation of pollutants and waste at the source and provides a comprehensive, multi-media approach to environmental management. Many programs in Wisconsin — both public and private — use this principle to guide their vision of a better future. Partnerships play a key role in these efforts, and that's why the Department of Natural Resources (DNR), the University of Wisconsin Extension Solid and Hazardous Waste Education Center (SHWEC) and the Department of Commerce (COMMERCE) work together on a variety of different pollution prevention initiatives. This executive summary showcases some of their efforts.

CURRENT PROGRAMS — HIGHLIGHTS BY BUSINESS SECTOR

Auto Salvage Sector

Thirteen salvage yards participated in a seat foam collection effort with DNR to determine the feasibility of removing seat foam from automobiles. The seat foam is a valuable and fully recyclable material that is often sought by the carpet industry. The project yielded roughly 4,000 lb. of post-consumer urethane foam (120 cubic yards) and important, practical information on which seat designs made removal of foam feasible.

Dry Cleaning Sector

The Wisconsin Certified Environmental Drycleaners is a successful education effort that teaches drycleaners about pollution prevention in their businesses. In its second full year of operation, the program has 92 drycleaners that have completed the curriculum, 51 of which are newly certified.

The Five-Star program recognizes drycleaners who voluntarily work to minimize wastes. Program requirements encourage public education and increasing knowledge of and experience in pollution prevention on the part of the drycleaner. Two new drycleaners have become a part of the Five Star Program and seven drycleaners have upgraded at least one star level over the past year, showing steady growth in the program. The program now has 49 participants.

Electronics Sector

According to a newly published baseline report, only 11% of the 20.6 million personal computers (PCs) that became obsolete in the U.S. in 1998 were recycled. Compared to the 36.7 million new PCs shipped from manufacturers in 1998, the percentage recycled shrinks to 6%. This prompted a DNR sector specialist to focus on this area and organize the Computer Recycling Network. A one-day recycling collection pilot in Madison yielded 24 tons of used computers for reuse and recycling. A computer reuse and recycling conference held in Waukesha, June 9, attracted 112 businesses and government officials from 5 states.

EXECUTIVE SUMMARY

Energy Sector

Outreach efforts have been most successful in raising awareness about mercury reduction and recycling. Half of the utilities have met with DNR specifically to discuss thermostat recycling, 33% have promoted thermostat recycling in their customer newsletters, and one has even featured it on their web site and established a drop-off collection site in the lobby of their office. As a result, more than 2000 thermostats were recycled in Wisconsin in 1998, preventing more than 20 pounds of mercury from potentially entering the environment.

Metal Plating and Finishing Sector

The Metal Finishing Strategic Goals Program (SGP) focuses on resource conservation and reduction of emissions and pollutants via voluntary commitments by industry. A small survey of Wisconsin SGP participants has shown significant pollution prevention successes:

- While production increased by 31% since 1992 (the baseline year for showing improvements in SGP), water usage increased by only 7 percent. This represents a savings of over 40,000,000 gallons of fresh water; and
- The quantity of hazardous sludge generated and disposed of decreased by 68%, keeping in excess of 1,100,000 pounds of sludge out of landfills in 1997 alone.

Wood Products Sector

In 1998 DNR partnered with SHWEC to compile the second edition of "*Wood Products Value-Added Manufacturing and Finishing: Efficiency, Waste Reduction and Regulations*". This document allows wood product industries to have a "tool box" at their finger tips to outline environmental regulations, waste reduction and pollution prevention options as well as contact names and numbers that can help them with pollution prevention options.

The DNR has hosted a number of small business outreach sessions to encourage a two-way dialog between various business sectors and the DNR to discuss current/new regulations, pollution prevention ideas, and program/DNR efforts. The sessions are being held quarterly with the first addressing the building community, the second directed at realtors, with a third focusing on economic development agencies.

TECHNICAL ASSISTANCE AND EDUCATION

Providing technical assistance, as well as education, for Wisconsin business and industry, continues to be a major focus of the SHWEC pollution prevention program. In 1998, SHWEC staff provided responses to over 300 requests from clients throughout the state. SHWEC specialists provided on-site assessments for 64 companies in 1998. Over \$3.8 million in potential cost savings were identified. This number, although very large, is probably the tip of the iceberg. Nearly \$1.5 million

in potential cost savings were identified at one company alone, a cream cheese processor.

ASSISTANCE TO SMALL BUSINESSES

The Small Business Clean Air Assistance (SBCAAP) staff at COMMERCE provide technical assistance on air regulations through publications and on-site consultations. The majority of all workshops and seminars coordinated by SBCAAP since 1995 have included a waste reduction/pollution prevention component. SBCAAP provided 112 workshops and seminars in 1997 and 1998 and reached almost 6000 people from small Wisconsin businesses. Seminar evaluation forms from 1997 and 1998 show that 82% of the attendees left the event with a greater knowledge or understanding of the regulations.

INNOVATIVE APPROACHES

ISO 14001 is a standard for "environmental management systems." An environmental management system (EMS) is a collection of policies, procedures, processes, and documents that an organization develops and uses in order to systematically address their environmental impacts. As a result of a survey, COMMERCE pioneered a grant program targeting businesses seeking to achieve ISO14000 certification. A \$5,000 grant, available through the agency, covers training costs associated with the certification process including pollution prevention and general ISO 14001 training.

The **Environmental Cooperation Pilot Program** builds on ISO 14000, and is an effort to experiment with regulatory innovation. The program is designed to negotiate individual agreements with companies that have environmental management systems in place and who have committed to superior environmental performance. Five different Wisconsin companies are participating as the first companies to pilot regulatory innovation through the program.

INTERNATIONAL AGREEMENT

In December 1998, Governor Tommy Thompson and Dr. Werner Schnappauf, Director of the Bavarian State Ministry for Regional Development and Environmental Affairs, signed an historic agreement to promote joint projects on environmental protection and innovative regulatory reform. The Memorandum of Understanding (MOU) outlines ten general agreements to promote environmental management systems, integration of systems, small business and public sector interaction and cooperation, university research partnerships, and transatlantic personnel exchanges.

SUCCESSFUL PARTNERSHIPS

The **Mercury Roundup** offered free mercury collection and recycling to communities in the state and was a huge success. The communities collected 3,579 pounds of elemental mercury, 5,539 pounds of mercury-containing devices, and 104,258 fluorescent lamps (fluorescent lamps contain mercury) from 470 participants. Thanks to this successful program, all of this mercury — collected from schools, dental practices, hospitals and households — will not enter the waste stream to become an environmental problem.

Through a project called **Sustainable Green Bay (SGB)**, a diverse group of individuals and organizations have been working together to help the Green Bay region find a balance between the area's social, economic and environmental needs, without compromising future needs. This project kicked off with over 130 community representatives from a broad array of backgrounds participating in a *Working Conference for Sustainable Green Bay* at UWGB in March 1999.

CONCLUSION AND ACKNOWLEDGMENTS

Pollution prevention programs compliment and support the more traditional regulatory approach, and regulatory staff are an essential element in these programs. Despite modest budgets and staffing, Wisconsin's citizens have enjoyed significant benefits as a result of partnership programs coordinated through DNR, SHWEC, and COMMERCE. For additional information, please read the full version of the 1999 Pollution Prevention Report. This report will focus on a variety of these efforts.

Much good work has also been done in pollution prevention by a variety of partners around the state and the country. DNR, SHWEC, and COMMERCE would like to thank the people — in business, schools, environmental organizations, our agencies and more — who are dedicated to and make a big difference in the field of pollution prevention.

Pollution prevention has a long history in Wisconsin, and this report updates people on current efforts. From mercury reduction projects on dairy farms and talks with auto salvagers to exciting new partnerships — this report covers a variety of pollution prevention projects around the state. This is a joint effort from the Wisconsin Department of Natural Resources (DNR), the University of Wisconsin's Solid and Hazardous Waste Center (SHWEC), and the Wisconsin Department of Commerce (COMMERCE).

I. POLLUTION PREVENTION INITIATIVES AND EXPANDING DEFINITIONS

A. Pollution Prevention Incentives for States—Federal Grants that Make a Difference

Grants are important to fund projects that will reduce pollutants, streamline permitting, and allow for technical assistance and training. The Pollution Prevention Incentives for States (PPIS) federal grant dollars are administered by the EPA. These grant dollars are available to assist states in developing and implementing pollution prevention related activities. Efforts in Wisconsin are targeted to assist businesses and communities to provide them with information, technical assistance and training on waste reduction. Grants are awarded for pollution prevention activities that reflect comprehensive and coordinated efforts. Wisconsin pollution prevention providers coordinate which projects to apply for funding through the PPIS grants from EPA, Region 5. DNR currently administers three PPIS grants. They are:

Building a Model Wisconsin Community – This PPIS grant in the amount of \$186,915 was received by the DNR in partnership with COMMERCE and SHWEC. The activities associated with this grant include establishing partnerships with a local community, piloting a coordinated approach to insure environmental awareness, and directing a comprehensive delivery of information and assistance to help businesses and communities identify areas of concern. Brown County was chosen as the site because of its many important and interesting environmental issues. Local community partnerships in Brown County include the Bay Area Community Council, Brown County Land Conservation Department, Fox-Wolf Basin 2000, and the Brown County Port and Solid Waste Department. DNR worked with a Community Advisory Committee and a Sustainable Green Bay Project Management Team in preparing a conference to launch the *Sustainable Green Bay Initiative* in March of 1999. The *Sustainable Green Bay Initiative* addresses the three fundamental components of a sustainable community. These components are environmental integrity, economic health and vitality, and social/cultural well being.

Focused Sector Partnership Proposal – This PPIS grant in the amount of \$176,000 was accepted by the DNR in partnership with COMMERCE, SHWEC, and Citizens for a Better Environment (CBE). This initiative builds upon Wisconsin's strong working partnership among pollution prevention service providers and includes the state's vocational colleges. Activities include: integrating pollution prevention strategies into VoTech Core Competency Delivery Systems and business partnerships;

POLLUTION PREVENTION INITIATIVES AND EXPANDING DEFINITIONS

developing an Automotive Collision Repair Sector Partnership; and stimulating consumer demand for products and drycleaning services that use pollution prevention.

Pollution Prevention through Business Partnerships – This PPIS grant in the amount of \$36,015 was accepted by DNR in partnership with Enviro-Partners for Dane County Businesses. Enviro-Partners is a consortium of public and private organizations dedicated to improving environmental business practices in Dane County. Enviro-Partners provides a convenient and beneficial service to help small businesses prevent pollution and engage in other positive environmental change. This grant allows Enviro-Partners to:

- Contact and present environmental and pollution prevention partnership concepts and benefits to Dane County businesses;
- Expand and direct Enviro-Partners pollution prevention activities to targeted sectors;
- Develop partnerships with additional business support organizations; environmental associations, and educational groups;
- Provide educational programs;
- Produce and distribute quarterly newsletters;
- Conduct an annual seminar on environmental management strategies; and
- Produce and maintain an interactive Web page.

B. Regulatory Integration: A Change in Definition of Pollution Prevention

It's important to have laws that encourage a broad definition of pollution prevention — one that includes the entire scope of pollution prevention activities.

In the 1999-01 Wisconsin State Budget, statutory language was included that broadens the definition of pollution prevention. The old definition limited pollution prevention authorities to *hazardous* pollution prevention. Over the years, it was found that non-hazardous wastes and emissions were as much of a problem as the hazardous ones, or they were tied to the hazardous emissions. Work gradually shifted to incorporate high-volume industrial wastes and secondary impacts such as energy use under the pollution prevention umbrella. The U.S. Environmental Protection Agency's (EPA) definition of pollution prevention includes non-hazardous wastes and emissions. This statutory language change brings Wisconsin into conformance with EPA, other states, and the current thinking about pollution prevention.

II. MEASURING POLLUTION PREVENTION AND BASELINE ENVIRONMENTAL DATA

A. *Measuring Pollution Prevention: How do you measure what didn't occur?*

One of the great efforts that directs government today is demonstrating the *results* of our activities. Government agencies have been granted funding and given tasks by the legislative and executive branches without sufficient emphasis on achieving and demonstrating results. Now, while we intuitively know that the environment is cleaner in many ways than it was a generation ago, it is difficult for government agencies to demonstrate that this is so. The data may exist, on scientists' desks, in scientific words and measures that are meaningless to most people. Trying to "measure" all of the dimensions of the environment is impossible from a practical perspective, so agencies are frequently left with surrogate or stand-in measures that help paint a picture of environmental quality, but don't completely express the health of the environment.

Additionally, the more we measure, the more new environmental issues we discover that may be more difficult to address using the methods of the past. For example, many of today's newer environmental issues are less amenable to "command and control" tactics because they come from "non-point" sources, such as automobiles or urban sprawl. This leads us to find new cooperative tools, such as dialogue, partnerships and a variety of pollution prevention techniques to address these problems.

Pollution prevention surrogate measures do not directly measure the quantity of pollution emitted. However, we can measure the *activities* that encourage pollution prevention - hours of training or speaking; number of people attending a conference or meeting; and ratings of our effectiveness and public satisfaction through surveys. We're working to emphasize environmental emissions and results (or outcomes) over activity (or output) measures, but we are still in a learning and developing mode and will be for some time. You will see both output and outcome measures in this report.

Added to the difficulty of measuring the environment and the impacts that we have on it, is the difficulty of measuring the impacts that we're preventing - *how do you measure what didn't occur?* If the DNR institutes a pollution prevention program, how do we know that it's effective? How do we know that the amount of pollution created in Wisconsin is declining *and* that the pollution prevention program is responsible? While it is possible to measure overall trends, in the quantity of waste generated, emissions emitted, and toxics released, determining the cause of this decline is difficult. It doesn't matter who takes credit for environmental improvements — regulatory programs, voluntary programs, or industry trends and consumer preferences. The bottom line is that emissions and discharges are decreasing and pollution prevention is one of the tools to make this happen.

The Bureau of Cooperative Environmental Assistance's (CEA) role is to encourage projects and share information and resources with industry and cooperators such as other DNR programs (air, waste and water), COMMERCE and SHWEC.

This year's report is broken down by business sector to give the reader more information on how a group of similar facilities is viewed from DNR's point of view. This allows us to dissect current information and find out if we have the tools to adequately measure the environmental impact of these facilities.

The business sectors' summaries have three sections, including a description of interagency interaction, environmental data (if available) and performance measures defined as awareness, action and results. Awareness means how many people or organizations learned about the programs; action means what new projects were started; and results include what happened out of those projects, such as the installment of an environmental management system in a company. Data is available for most sectors in one form or another, yet with the focus on small to medium sized enterprises, we find that many are not reporting to current databases. This makes it hard to track progress of a sector in response to new regulation or voluntary program.

More information on performance measurement is coming from EPA – especially booklets such as the *Guide for Measuring Compliance Assistance Outcomes*. Based on the current thinking in these publications, compliance assistance appears to be best measured through a variety of tools – both qualitative and quantitative. DNR plans to use measurement ideas and data from a variety of sources to develop performance measures appropriate for our programs. We will continue to search for performance measures that are meaningful.

B. Baseline Environmental Data—An Introduction to "Environmental Quality" Goals and Measures

The DNR mission (clean air and water, etc.), drives Wisconsin's pollution prevention efforts. This category includes goals and measures that directly relate to environmental quality and quality of life.

In the next section, DNR sector specialists introduce their sectors and talk about specific projects. Environmental quality data is also included for a numerical look at the sectors. Each DNR program gathers different data using different means. Some companies are required to report to multiple programs, while others do not have any reporting requirements. Whether or not a company reports to one or more programs depends on the industry involved and the types of chemicals used.

For the following section, the data comes from the Toxics Release Inventory (TRI), if applicable, and other programs if the sector is not covered by the TRI. In some cases, there is no representative data for the sector and therefore none is provided.

MEASURING POLLUTION PREVENTION AND BASELINE ENVIRONMENTAL DATA

When looking at the following data, please keep these caveats in mind: Standard Industrial Classification (SIC) codes were used to extract each sector's data using a pool of all the SIC codes assigned to facilities by any DNR program. However, some DNR programs do not record SIC codes and so the facilities that report only to them are not included in this report. Also, if facilities are not required by law to report their emissions, their emissions are not included in the data. Finally, note that all quantities are total pounds of all released chemicals. Chemicals have different levels of toxicity, so the impact of the total poundage cannot be directly inferred.

Each program that provided data for this report is summarized in Appendix A, the metadata section of the report, along with a description of their data elements.

III. CURRENT PROGRAMS — REPORTS BY BUSINESS SECTOR

This next table shows how CEA staff have done in contacting people through public speaking. Outreach efforts include public speaking and displays.

Table A

CATEGORY	PERFORMANCE MEASURE	RESULTS	STATUS
I. Output	# public speaking engagements by CEA*	223	Ongoing, tracked quarterly through Outreach Tracking Forms
II. Output	# people reached through public speaking	14,770	Ongoing, tracked quarterly through Outreach Tracking Forms

The sectors and DNR staff who work on them include:

Table B

SECTOR*	SECTOR SPECIALIST	OFFICE	PHONE
•Auto Services	Lynn Persson	Madison	(608) 267-3763
•Chemical Manufacturers	Scott Lee	Milwaukee	(414) 263-8681
•Community Mercury Reduction	Randy Case	Madison	(608) 267-7639
•Dry Cleaning	Kim McCutcheon	Fitchburg	(608) 275-3207
•Electronics Reuse and Recycling	Susan Hundt Bergan	Madison	(608) 264-6032
•Energy	John Shenot	Madison	(608) 267-0802
•Food Processing	Jerry Rodenberg	Madison	(608) 266-7715
•Health Services	Randy Case	Madison	(608) 267-7639
•Metal Casting	Susan Lindem	Madison	(608) 267-0567
•Metal Plating and Finishing	Annette Weissbach	Green Bay	(920) 492-5865
•Printing	Mike Sloat	Baraboo	(608) 355-0811
•Scrap Recycling & Auto Salvage	Mark Harings	Eau Claire	(715) 831-3263
•Wood Products	Laurel Sukup	Rhineland	(715) 365-8936

*Sectors under consideration: plastic products and coating, petroleum, small engine manufacturers, real estate, and tanneries.

Now to put the measures and data in context — from the metal finisher who put the final touches on your car to the wood products industry that puts paper in your office — the Report will explore the different business sectors and how pollution prevention specialists work to improve the environmental performance of that sector.

A. AUTO SERVICES SECTOR

Over 10,000 small businesses provide auto-related goods and services in Wisconsin. This diverse sector includes general automotive repair shops, autobody finishing shops, car and truck dealers, car washes and trucking and taxi fleets. Many of the businesses are relatively small, but added together can have a significant environmental impact. A number of environmental concerns exist due to the large array of waste materials such as: used oil, antifreeze, lead-acid batteries, air conditioning refrigerants, cleaning solvents, paint waste and emissions. Another concern is preventing spills and managing stormwater to avoid contamination.

These businesses can have a positive impact on the environment through the services they provide. Auto service shops play an important role in reducing vehicle air emissions by keeping cars tuned up, inflating tires to their proper air pressure (this saves gas) and making sure auto emission control devices are functioning properly.

PERFORMANCE MEASURES

Interagency Cooperation

Staff from SHWEC, COMMERCE and the DNR are partnering in a project with Wisconsin Automobile Collision Technicians Association, Ltd. (WACTL) and related trade associations. During the past year WACTL surveyed collision shops to determine the regulatory and waste reduction information needs of the automotive collision repair industry in Wisconsin. This year the group will work to meet those needs with the overall goal of increasing automotive collision repair shops' understanding of environmental compliance and pollution prevention opportunities. The partners will use electronic technology, on-site waste reduction and recycling assessments, and training to accomplish this goal.

Data

There is limited information in DNR databases on releases and hazardous waste generated by the auto services sector. Most auto service businesses are very small quantity or small quantity hazardous waste generators. They are required to make a hazardous waste determination and manage and dispose of their wastes properly, but have limited hazardous waste reporting requirements. Some may be required to use a manifest or report their hazardous waste generation biannually. Some auto service centers that use large amounts of solvents or have painting operations may be required to report their emissions and obtain air operation permits. Others, because of their waste reduction efforts or their small size, fall below reporting requirements. Others may be unaware of the environmental reporting requirements that apply to them.

The following tables provide a baseline for future efforts with the auto services industry. Table A helps identify how many businesses are in the state and their current environmental reporting practices. Table B indicates the amount of solid wastes that the auto service industry may be handling. Table C provides an estimate of automobile emissions in Wisconsin. The auto services industry plays an important role in helping to reduce these emissions through good car care.

Table C. Wisconsin Auto Services: Number of Auto Service Facilities , including in Auto Repair Services, Collision Repair Services and Auto Dealers & Service Stations

Information Source	Number of Facilities		
	Auto Repair Services includes Collision Repair Services	Collision Repair Services (only)	Auto Dealers and Service Stations
1997 Estimated Auto Service Facilities (DILHR, Data) ¹	3235	836	4701
1999 Estimated businesses providing auto services (1999 Yellow Pages) ²	7715	1745	4185
Reporting on 1997 Hazardous Waste Annual Reports	1	1	1
Using HW Manifest in 1997	4	1	2
Reporting Annual Air Emissions in 1997	5	1	1

1 1997 Data from DILHR information maintained for workman’s compensation purposes.

2 1999 estimated facilities in state providing auto services is from Ameritec on-line Yellow Pages, July 8, 1999. Some businesses that provide more than one type of service may be listed twice. Other businesses may not be listed in the yellow pages.

NR Auto Services are not required to report TRI emissions (and generally don’t have releases that would be TRI reportable).

Table D. Estimated Generation and Disposition of Selected Solid Waste in Wisconsin, 1995a

Waste/Material Category	Generation (tons/year)	Recovered for Recycling (tons/year)	Combusted (tons/year)	Landfilled (tons/year)	Landspread/ other (tons/year)
Vehicle Batteries	37,860	36,600	20	1,180	-
Tires	51,520	1,550	49,970	0	-
Used Oil	108,600	6,700	69,000	6,000	7,400
Scrap vehicles	290,000	206,300	-	84,600	-

^a From “Wisconsin Waste Characterization & Management Study Update”. Prepared by Franklin Associates, LTD for Wisconsin DNR, February 1998. Note that used oil managed on-site is not included in estimates.

CURRENT PROGRAMS — REPORTS BY BUSINESS SECTOR

Table E. 1996 Estimated Annual Average Daily Vehicle Miles & Highway Vehicle Emissions

Portion of State	Average Daily Vehicle Miles	1996 Summer Weekday Emissions (Tons)		
		VOC	CO	NOx
Original Non Attainment Area (11 Counties)	44,153,834	86.66	660.17	138.7
Rest of State (61 Counties)	93,911,226	225.16	1,744.83	413.66
Total State	138,065,060	311.82	2405.00	552.36

^b Emission Estimates from Larry Bruss, Chief of Ozone Section, DNR letter to Rob Kennedy, November 23, 1998; Vehicle Miles estimates provided by Chris Bovee, DNR.

Awareness, Action, and Results

During the past year there has been a major effort to compile and update basic information on auto service compliance issues and pollution prevention tips. This involved updating fact-sheets that cover the basic hazardous waste requirements, used antifreeze management, and proper disposal of lead acid batteries. This information is an important resource for educators, service providers and members of the Wisconsin Auto Services Trade Association.

In September 1998, an article focusing on “What You Auto Know” for the auto services industry was included in DNR’s *Waste*Less*News* and mailed to over 12,000 businesses and service providers in the state. A publication order form and a contact list that are industry specific have been developed and will soon be on DNR’s web site.

B. CHEMICAL MANUFACTURERS SECTOR

The chemical manufacturing and allied products sector includes, but is not limited to chemical blenders, manufacturers, packagers; soaps and detergent manufacturers, and pharmaceuticals manufacturers.

There are approximately 400 such facilities in the state. The bulk of these facilities are located in southeastern Wisconsin. According to data compiled by SHWEC, the top 5 largest chemical facilities in the state generate approximately 33 million lbs. of hazardous waste annually. The remaining 450+ chemical facilities generate 16 million lbs. annually. Of these remaining facilities, at least 216 have 25 employees or less (Wisconsin Manufacturers and Commerce data).

The following describes pollution prevention activities of the DNR’s chemical manufacturers sector specialist.

PERFORMANCE MEASURES

Interagency Cooperation

SHWEC

The DNR's chemical sector specialist served as a committee member that planned a teleconference on the recent EPA Consumer Products Rule. Members of the Chemical Manufacturing industry attended the event and learned much about their responsibilities under the new rule.

As a panelist in a "listening session" for representatives from the chemical manufacturing industry, the specialist learned about the challenges small businesses face in complying with environmental regulations, and in gaining access to new federal and state laws. This session gave large and small chemical manufacturers in the state a chance to voice their opinions on issues of regulatory reform, and improving access to pollution prevention information.

The specialist has also acted as a steering committee member for the Annual Environmental Compliance Seminar sponsored by Keep Greater Milwaukee Beautiful. DNR has also contributed to the ChemAlliance website, managed in Wisconsin by SHWEC.

COMMERCE

In partnership with COMMERCE, the specialist spoke at a variety of Small Business Group meetings and participated in a joint mailing to small businesses inviting them to DNR's Small Business Initiative Breakfast Briefing.

EPA

EPA Region 5 has a new Chemical Sector Compliance Initiative and the sector specialist consulted with EPA on proper role of the Business Sector Specialist in assisting EPA in this federal initiative. It was decided that the DNR would pursue a parallel path by reaching out to the targeted chemical facilities in Wisconsin in a way that emphasized a proactive and customer assistance approach.

Milwaukee Metropolitan Sewerage District (MMSD):

DNR's chemical manufacturing specialist spoke about the role of the specialist and DNR programs at two Business Customer meetings put on by Milwaukee Metropolitan Sewerage District (MMSD).

Data

Table F.

TOTAL TRI EMISSIONS AND TRANSFERS FROM FACILITIES IN THE CHEMICAL SECTOR (SIC CODES 2800-2899)									
Year	# Reporting Facilities	Fugitive Air Emissions	Point Air Emissions	Water Releases	Land Releases	Total Env't'l Releases	POTW Transfers	Off-site Transfers	Total Releases & Transfers
1991	101	393,456	2,365,677	2,871	45,364	2,807,368	589,160	13,515,544	16,912,072
1992	106	270,604	2,197,314	4,136	46,133	2,518,187	532,013	10,525,889	13,576,089
1993	107	270,712	1,912,356	25,954	51,718	2,260,740	451,850	27,077,962	29,790,552
1994	103	217,670	1,298,085	1,605	40,477	1,557,837	344,387	19,839,419	21,741,643
1995	99	206,522	1,103,793	775	250	1,311,340	484,514	20,101,163	21,897,017
1996	99	160,581	1,034,737	1,049	1,850	1,198,217	437,838	24,097,946	25,734,001
1997	95	149,420	1,012,811	518	0	1,162,749	484,107	19,177,220	20,824,076

As can be seen by the above TRI data for years 1991 through 1997, TRI releases in the 2800 series SIC code have been steadily declining. This trend is expected to continue.

Awareness, Action, and Results

Outreach to businesses through print media:

The sector specialist wrote an article about the role of the Business Sector Specialist published in the FET newsletter (which has a readership of 950) and in the DNR *Horizons* newsletter, which has a readership of 900.

The American Chemical Society Milwaukee Branch hosted the specialist for a talk at their annual meeting and then published an abstract of it in their newsletter. An article highlighting the main points of a talk to the Wisconsin Chemical Group was also published in the *Chemigram* newsletter.

The sector specialist participated in these seminars as a way to do outreach to businesses:

- The Keep Greater Milwaukee Beautiful Annual Environmental Compliance Seminar at the Cooperative Environmental Assistance information booth. Approximately 250 people were in attendance.
- Wisconsin Environmental Initiative Business Series Seminar - Cooperative Environmental Assistance information booth. Approximately 150 people attended.
- The Southeast Region Small Business Initiative Breakfast Briefing was planned and carried out by the specialist, and he also spoke at the briefing. Approximately 45 in attendance. Breakfast briefing fliers went out to approximately 600 businesses and trade groups.

Outreach to businesses through talks:

At the Milwaukee Area Technical College, the specialist lectured to about 20 students about new trends in environmental regulation. The specialist acted as the keynote speaker for the Chemical Coaters Association Annual Meeting and for the quarterly meeting of the Wisconsin Chemical Group.

The sector specialist introduced the Environmental Cooperation Pilot Program and clarified the role of the business sector specialist in presentations to MMSD business customers and FET's Air Regulations Committee.

In a COMMERCE Small Business Council meeting he presented an overview of the Small Business Initiative Breakfast Briefing.

ADDITIONAL CUSTOMER ASSISTANCE

Personal site visits allowed the specialist to visit approximately 25 chemical manufacturing facilities and give them information about the Bureau of Cooperative Environmental Assistance and on the role of the Business Sector Specialist. The specialist also assisted five small businesses in coordinating a team of DNR regulatory staff that could assist them in obtaining the proper DNR permits.

C. DRY CLEANING SECTOR

A little over 300 dry cleaning facilities operate in Wisconsin. Many of these facilities are small family-owned businesses. Air, hazardous waste, and contaminated land pose the main environmental concerns. One trade association, Wisconsin Fabricare Institute, represents most of the dry cleaners in the state. The Wisconsin Drycleaners' Partnership is a voluntary agreement to work towards improving environmental performance in the drycleaning industry.

PERFORMANCE MEASURES

Interagency Cooperation

Partners in this program include professional dry cleaners, DNR, Wisconsin Fabricare Institute (WFI), COMMERCE, SHWEC and the Center for Neighborhood Technology (CNT). Citizen's for a Better Environment (CBE) provides additional insight.

The partnership's goals include:

- Motivating and enabling the dry cleaning industry to work toward minimizing the use of perchloroethylene and other solvents;

- Recasting the approach taken by state and federal environmental agencies and demonstrating how pollution prevention and business can be compatible;
- Increasing consumer awareness;
- Safeguarding employees and the public by minimizing future releases of perchloroethylene and other solvents; and
- Addressing past releases of solvents and waste materials.

Awareness, Action, and Results

The Five Star Recognition Program, begun in 1996, is one of the efforts of the Wisconsin Fabricare Institute to educate and assist members in maintaining a high degree of professionalism throughout the industry. The program establishes five increasingly ambitious levels of environmental performance (including pollution prevention) for participating drycleaners. Program requirements also encourage public outreach and increased drycleaner knowledge and experience in preventing pollution. 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.

Two new drycleaners have become a part of the Five Star Program and seven drycleaners have upgraded at least one star level over the past year showing steady growth in program participation. The program now has 49 participants. The Five Star criteria were upgraded in 1998 and became effective in March of 1999.

Another successful education effort is the Wisconsin Certified Environmental Drycleaners. In its second full year of operation, the Wisconsin Certified Environmental Drycleaner (WI-CED) program has 92 drycleaners that have completed the curriculum. Of these drycleaners 51 are newly certified WI-CED's, 15 have requalified as WI-CED's and 26 have been recertified to the WI-CED from the International Fabricare CED.

In 1998 DNR secured a Pollution Prevention Incentive for States grant from the USEPA. DNR contracted with CBE to develop a consumer demand campaign for the drycleaning industry. "A Greener Choice... for Cleaner Clothes" project is divided into three phases of work. Phase one focuses on collecting background information and development of initial measurement activities. The second phase is devoted to products and tools to motivate consumers. Phase three will assess the impacts of the project and plan for future long-term use of the tools.

The 1997-1999 state biennial budget bill established a new Drycleaner Environmental Response Program, funded by drycleaning facility license fees and a solvent fee for perchloroethylene — the dry cleaning solvent. The purpose of this program is to provide reimbursement of eligible clean-up costs to dry cleaners that have had a discharge of dry cleaning solvents. The bill also created a Governor's

Dry Cleaning Advisory Council to work with the DNR in evaluating the program. This council was appointed in the spring of 1998 and a rule advisory committee was selected to draft rules. Chapter NR168 was drafted in January of 1999 and pending adoption of the rule by the Natural Resources Board, the effective date for implementing this program is late fall 1999.

D. ELECTRONICS SECTOR

DNR's work with the electronics sector focused specifically on the management of used computers. According to a newly published baseline report, only 11 percent of the 20.6 million PCs that became obsolete in the U.S. in 1998 were recycled. Compared to the 36.7 million new PCs shipped from manufactures in 1998, the percentage recycled shrinks to 6 percent.

PERFORMANCE MEASURES

Interagency Cooperation

In order to create a vehicle for sharing information, strategies and work efforts, DNR's electronics sector specialist organized the Computer Recycling Network. Network members meet monthly by conference call and are linked electronically by a distribution list established and managed through UW-Extension staff at UW-Green Bay. Active members of the Network have been staff from the Department of Administration, DNR, Department of Corrections, SHWEC, the Recycling Markets Development Board, Dane County, the City of Milwaukee and UW-Madison Graduate School of Business. In addition to these active partners, we received assistance in presenting a computer reuse and recycling conference on June 9, 1999, from these additional sponsors: Wisconsin Manufacturers and Commerce, Buy Recycled Business Alliance, WasteCap Wisconsin and Associated Recyclers of Wisconsin.

Data

Table G.

Total TRI Emissions and Transfers from Facilities in the Electronics Sector (SIC Codes 3571-3579 and 3610-3699)									
Year	# Reporting Facilities	Fugitive Air Emissions	Point Air Emissions	Water Releases	Land Releases	Total Env't'l Releases	POTW Transfers	Off-site Transfers	Total Releases & Transfers
1991	79	603,882	2,259,744	54	5,437	2,833,867	246,534	6,638,029	9,687,880
1992	73	562,510	1,762,073	107	3,513	2,307,953	277,557	9,824,976	12,394,336
1993	69	394,321	1,427,686	194	4,441	1,800,842	291,401	10,327,008	12,403,651
1994	64	314,018	1,192,010	69	2,305	1,478,202	349,799	16,160,142	17,960,543
1995	65	250,679	1,101,591	115	110	1,327,495	385,199	17,280,315	18,973,209
1996	62	131,251	1,019,547	74	1,499	1,127,121	413,089	19,234,971	20,752,961
1997	58	140,183	793,863	62	215	907,573	414,113	18,549,855	19,847,391

Awareness, Action, and Results

Some specific results of the project are:

1. Development of a fact sheet, *Managing Used Computers: A Guide for Businesses and Institutions*, which provides basic regulatory information as well as options for reuse and recycling;
2. A one-day recycling collection pilot in Madison which yielded 24 tons of used computers for reuse and recycling;
3. A computer reuse and recycling conference held in Waukesha, June 9, which attracted 112 businesses and government officials from 5 states;
4. Increased awareness of the need for proper management of used computers, developed through articles published in such venues as *WasteLess News*, *Recycling News*, *FET Newsletter* and through presentation to various organizations;
5. Improving markets for used computers through targeted state market development efforts, resulting in: a new computer demanufacturing business in the Madison area, expansion by a Madison area recycler into computer demanufacturing; testing of a new product incorporating CRT face glass; formation of a new company that refurbishes, upgrades and installs used computers in schools; and
6. The Computer Recycling Network described above.

E. ENERGY SECTOR

DNR's energy sector specialist offers customer service to businesses and municipal entities whose primary activity involves: 1) the generation, transmission, or distribution of electricity; or, 2) the wholesale transportation or distribution of natural gas. Service is also provided to other organizations (e.g., non-profits) substantially concerned with or involved in environmental issues affecting this sector. Given the complexity of this industry, DNR has elected to focus initially on electric utilities and combined (electric and gas) utilities only.

PERFORMANCE MEASURES

Interagency Cooperation

DNR's energy sector specialist is collaborating with the Department of Administration's Wisconsin Energy Bureau (WEB) in the development of a

Consortium for Industrial Efficiency. WEB is leading this effort to create a network of people working together to optimize the energy efficiency of Wisconsin industries. Other likely partners include COMMERCE, SHWEC, Wisconsin Manufacturing Extension Partnership (WMEP), Northwest Wisconsin Manufacturing Outreach Center (NWMOC), and the Energy Center of Wisconsin. The Consortium will offer technical assistance on energy and resource efficiency and pollution prevention. Industries will be able to contact a single Consortium partner of their choosing and rely on that person to coordinate the services offered by all partners.

Data

Table H.

Total AEMS Air Emissions from Facilities in the Energy Sector (SIC Codes 4911, 4931, 4939)*		
Year	# Reporting Facilities	Total Air Emissions
1993	40	647,375,811
1994	41	662,813,747
1995	45	20,945,256,333
1996	48	22,277,128,797
1997	51	25,094,494,295

*Carbon dioxide was added to the reporting requirements, causing the rise in emissions between 1994 and 1995.

Awareness, Action, and Results

In the last year, DNR’s energy sector specialist made a concerted effort to raise awareness within the sector on five high-priority issues for the Bureau of Cooperative Environmental Assistance. These priority issues have been the cornerstone of nearly all energy sector outreach work.

The first priority was to raise awareness within the energy industry of the range of services offered by DNR’s energy sector specialist and others in the Bureau of Cooperative Environmental Assistance. The second priority focused on the business sector specialist’s role as an outlet for industry concerns about inconsistent DNR policies or decisions. The third priority was to promote ISO 14001, and ensure that businesses were aware of available government assistance programs and other initiatives related to ISO. The fourth priority was to promote the Environmental Cooperation Pilot Program and solicit applications. The fifth and final priority for the past year was to encourage industry leadership on mercury reduction and recycling activities.

The primary mechanism used to raise awareness was personal contacts by the energy sector specialist with environmental managers and others in the industry. These contacts included numerous meetings, telephone calls, site visits, and letters. Public speaking engagements were also used to raise awareness, though these efforts were not always targeted specifically at the energy sector. And finally, in the case of

the mercury reduction priority, a fact sheet was developed to encourage recycling of mercury-containing thermostats.

Outreach efforts have been most successful in raising awareness about mercury reduction and recycling. All of Wisconsin's electric/combined utilities are thoroughly informed about mercury issues and have been engaged in ongoing discussions about options and initiatives. (This outcome results from efforts by many DNR employees and cannot be attributed only to the efforts of the energy sector specialist.) Half of the utilities have met with DNR specifically to discuss thermostat recycling, 33 percent have promoted thermostat recycling in their customer newsletters, and one has even featured it on their web site and established a drop-off collection site in the lobby of their office. As a result, more than 2000 thermostats were recycled in Wisconsin in 1998, preventing more than 20 pounds of mercury from potentially entering the environment.

Most of the other goals for raising awareness in the energy sector were at least partially met. Based on feedback received from customers, about 67-percent of electric/combined utilities demonstrated awareness and understanding of business sector specialist services, ISO 14001 initiatives, and the Environmental Cooperation Pilot Program. Only 33 percent demonstrated an awareness of the sector specialist's role as a conduit for consistency concerns, but it could be that the others simply had no consistency issues to discuss.

F. FOOD PROCESSING SECTOR

The food processing sector in Wisconsin is dominated by the dairy industry with approximately 220 processing facilities that produce cheese, butter, bottled milk, ice cream, and dried milk or whey. The state is ranked number one in the nation in the production of snap beans, cranberries, and cabbage and second for sweet corn and peas. Approximately 90 facilities process these and other fruits, vegetables and specialty foods. The meat industry includes approximately 70 facilities that slaughter cows, hogs, calves, ducks, turkeys, chickens, and other livestock to produce dozens of consumer products. Wastewater management and treatment are the predominant concerns in the food processing industry due to the vital importance of a clean and wholesome product. Another concern is the management and disposal of inedible by-products.

The opportunities for pollution prevention are mainly in the discharge of wastewater. The greatest quantity of pollutants are biodegradable organic material [measured as biochemical oxygen demand (BOD)], nitrogen in several chemical forms, phosphorus and chloride. Traditionally, these pollutants (except chlorides) have been removed from the wastewater by treatment systems that are either publicly or privately owned. Pollution prevention efforts should focus on making some changes to the processing operations to reduce the quantity of pollutants that are

wasted. It is often not practical to recycle or reuse waste because of the need to meet strict sanitation standards demanded by consumers and required by regulations.

Air emissions are generally from combustion to provide heat and from baghouses used to collect dried products, such as whey. Large volumes of inedible byproducts are wasted from food processing. Pollution prevention opportunities are to encourage and promote the use of byproducts by feeding to farm animals, land application using the nutrients as fertilizer, or composting.

PERFORMANCE MEASURES

Data

Table I.

Total TRI Emissions and Transfers from Facilities in the Food Sector (SIC Codes 2000-2099)									
Year	# Reporting Facilities	Fugitive Air Emissions	Point Air Emissions	Water Releases	Land Releases	Total Env't'l Releases	POTW Transfers	Off-site Transfers	Total Releases & Transfers
1991	121	211,859	254,817	295	204,838	671,839	1,935,276	278,671	2,885,786
1992	126	315,667	232,524	26,320	385,667	960,228	1,965,879	525,947	3,452,054
1993	131	533,047	206,494	71,184	135,275	946,000	2,072,436	489,771	3,508,207
1994	126	159,416	92,834	3,305	181,450	437,005	1,041,886	666,468	2,145,359
1995	113	168,296	71,113	478,948	174,140	892,497	2,581,724	303,708	3,777,929
1996	121	148,066	42,340	531,181	42,379	763,966	2,172,092	508,173	3,444,231
1997	123	155,695	62,118	568,759	32,073	818,645	2,920,139	366,590	4,105,374

Awareness, Action, and Results

Contacts with Trade Associations — Several trade associations are active in the food-processing sector. The sector specialist attended the annual convention of the Midwest Food Processors Association and the Wisconsin Cheese Makers Association to find out about waste reduction opportunities in the industry. Next year the sector specialist plans to host an industry-specific exhibit to promote pollution prevention. The sector specialist's goal is to attend the Wisconsin trade association conventions, such as the Wisconsin Association of Meat Processors, and other relevant events to promote awareness of the Cooperative Environmental Assistance Bureau's programs. The goal is to have association members exchanging pollution prevention success stories amongst themselves and contact the sector specialist for advice.

Pollution Prevention in WPDES permits — Wastewater discharges from the food processing industry have been regulated by permits for over 20 years so pollution prevention requirements in permits are fairly common. For example, instead of just putting a specific limit on chloride, the permit may require a study to determine the

source of chlorides. Often the processor finds that by making simple process changes chlorides losses can be reduced to acceptable concentrations without end-of-pipe treatment. The sector specialist continues to encourage WPDES permit drafters to put pollution prevention requirements in permits, provide training when requested, and reduce any bureaucratic barriers to improved performance.

Businesses Serving the Food Sector—Since there are businesses serving the food processing industry by providing hauling service for wastewater and byproducts, it is important to inform them about P2 opportunities. The sector specialist wrote a guidance paper entitled “Guidance For Liquid Waste Carriers Serving Commercial and Industrial Customers”. The guidance was presented to the Wisconsin Liquid Waste Carriers Association at their annual convention and was subsequently mailed to approximately 500 licensed haulers.

G. METAL CASTING SECTOR: FOUNDRIES AND DIE CASTERS

The metal casting sector makes metal parts, primarily iron, steel and aluminum for end user specifications by casting molten metal in sand (foundries) or in a permanent die (die casters). The majority of die-casting is done with aluminum. End users include automotive, electrical, agricultural, heavy truck and rail industries. Examples of casting produced in Wisconsin range from manhole covers cast by Neenah Foundry and engines for Harley Davidson motorcycles to various engine parts for the big three automakers and heavy truck manufacturers. The metal casting industry can be categorized into subgroups--iron and steel foundries and the nonferrous foundries — sand foundries and diecasters. There are approximately 120 foundries in the state, the majority of which are small to medium size facilities with 100 or fewer employees.

Foundries produce casting by melting scrap metal and ingot, which is then poured into prepared sand molds. Chemically bonded sand cores are used to create the void cavity in the casting. The casting is allowed to cool, then removed from the sand mold in a process called shakeout. The casting goes on to machine finishing operations: addition of corrosion protection, heat treating or grinding to end user tolerance specifications. The sand is either reused in the molding process or disposed of as waste.

The industry is heavily regulated for air pollutant emissions from a majority of the unit operations, and for waste disposal for spent sand and melt by-products, storm water runoff and wastewater. Air and Waste regulations are most complex and have greatest impact on the sector.

PERFORMANCE MEASURES

Data

Table J.

Total TRI Emissions and Transfers from Facilities in the Metal Casting Sector (SIC Codes 3300-3399)									
Year	# Reporting Facilities	Fugitive Air Emissions	Point Air Emissions	Water Releases	Land Releases	Total Environmental Releases	POTW Transfers	Off-site Transfers	Total Releases and Transfers
1991	93	626,838	1,545,467	4,114	38,601	2,215,020	2,130,691	15,043,645	19,389,356
1992	98	569,908	1,495,034	3,744	21,983	2,090,669	3,559,729	13,704,829	19,355,227
1993	96	484,748	759,546	3,326	31,615	1,279,235	1,769,009	18,726,910	21,775,154
1994	94	357,042	594,749	6,315	263	958,369	524,724	19,072,520	20,555,613
1995	99	340,394	819,496	6,810	21,184	1,187,884	90,645	18,687,011	19,965,540
1996	99	482,403	608,488	4,617	24,007	1,119,515	94,794	22,228,366	23,442,675
1997	99	520,740	632,987	5,050	14,405	1,173,182	103,660	24,023,487	25,300,329

Awareness, Action, and Results

- Environmental Cooperation Pilot Program: Navistar International-Waukesha facility is participating as one of the first companies to pilot regulatory innovation through the Environmental Cooperation Pilot Program (see section on ECPP).
- Hazardous Air Pollutant Emission Reduction compliance strategy: Five years of work done in partnership with the trade association, Wisconsin Cast Metals Association (WCMA), culminated this spring in development of a strategy for compliance with chapter NR 445 of Wisconsin’s Administrative Code, Control of Hazardous Air Pollutants. The reduction strategy will measure the amount of combustible material available to create volatile organic compound and hazardous emissions. It will allow industry the choice in how to modify their operations/sand formulas to decrease combustible material levels in a continuous process improvement structure. Data collected provide a benchmark to evaluate changes in practices and sand formulations against industry norms and within individual foundry systems.

Partnership efforts continue with WCMA to provide an education and information forum for sharing pollution reduction successes and evaluate proposed rule revisions to chapter NR 445 of Wisconsin Administrative Code.

- Beneficial Reuse of Industrial By-Products: Many foundry waste streams — excess system sand, core butts, and slag from melt operations — are disposed of in landfills. DNR’s solid waste program has sought to find uses for these industrial by-products in environmentally acceptable applications to reduce the demand on

landfills. WMCA worked with the DNR and environmental groups to create chapter NR 538, Wis. Adm. Code, Beneficial Use of Industrial Byproducts. The rule identifies accepted uses for foundry materials dependent on toxicity characteristics. 1999 was the first year of implementation of the rule. The technical advisory committee (TAC) reports annually to the Natural Resources Board on the amount of materials diverted from landfills into beneficial reuse. This year's report will be submitted at an early fall 1999 Board meeting.

Future efforts will include overcoming barriers identified by industry in finding use for greater volumes of materials. In June of this year WCMA was awarded a grant from the Recycling Markets Development Board to study the feasibility of co-processing foundry byproducts from multiple foundries to address the obstacle of the large volumes of materials necessary for road construction projects. Demonstration projects with specific end users over the next year will help establish greater markets and innovative uses for these materials.

H. METAL PLATING AND FINISHING SECTOR

Metal finishing, or in a broader sense - surface finishing, generally involves altering an object's surface to enhance its appearance or functional properties. The main processes involve polishing, buffing, electroplating, electropolishing, etching, and coating. Metal finishing, in and of itself, is a form of resource conservation because finishing a metal object protects it from corrosion, abrasion, impact, and wear. Finishing is used among other things to improve lubricity, electrical properties, solderability, wire and rubber bonding, and light absorption. The industry is heavily regulated because there are many hazardous chemicals involved in most areas of production, cleaning, and treatment. Many businesses are considered small businesses and often have less than 50 employees.

PERFORMANCE MEASURES

Interagency Cooperation

As a result of the industry's interest in the Strategic Goals Program (SGP), CEA and SHWEC wrote a proposal for the 1999 PPIS grant for education and technical assistance to SGP participants and other metal finishers. The proposal was approved and efforts are currently underway to prepare for the startup of the program in October 1999. SHWEC, DNR, and the members from the industry's trade association, the Association of Electroplaters and Surface Finishers (AESF) are formulating a workplan.

Data

Table K.

Total TRI Emissions and Transfers from Facilities in the Metal Finishing Sector (SIC Codes 3471 and 3479)									
Year	# Reporting Facilities	Fugitive Air Emissions	Point Air Emissions	Water Releases	Land Releases	Total Env't'l Releases	POTW Transfers	Off-site Transfers	Total Releases & Transfers
1991	56	559,473	1,157,729	51,637	651,933	2,420,772	837,051	2,643,611	5,901,434
1992	63	208,291	1,106,332	2,481	21,068	1,338,172	1,407,889	3,822,836	6,568,897
1993	65	270,876	916,285	2,087	3,975	1,193,223	1,204,392	1,826,194	4,223,809
1994	65	209,600	765,138	845	58	975,641	243,073	2,634,036	3,852,750
1995	63	164,727	576,466	279	12	741,484	186,966	1,705,717	2,634,167
1996	63	187,300	467,456	541	19,965	675,262	236,189	1,327,614	2,239,065
1997	58	177,166	415,152	1,041	22,605	615,964	253,625	1,820,898	2,690,487

Awareness, Action, and Results

In March of 1998, a packet of information and a survey was sent to nearly 600 metal finishing facility owners/operators. One hundred twenty companies (including consultants) responded with an interest in being listed in a metal finishing directory. A newsletter titled *Metal Finishing News* was mailed to nearly 500 facilities in March, 1999. The newsletter updated the metal finishing community on air, waste and wastewater regulations and other areas of interest.

Common Sense Initiative Metal Finishing Strategic Goals Program

In January 1998, DNR signed on to work with metal finishers on a national program started under the EPA Common Sense Initiative. The Metal Finishing Strategic Goals Program (SGP) focuses on resource conservation and reduction of emissions and pollutants via voluntary commitments by industry. In turn, states agree to provide opportunities to reach the goals using incentives, compliance and pollution prevention assistance, or other rewards. The SGP is the culmination of a three-year effort by a multi-stakeholder group to form a plan to bring the metal finishing industry to a higher level of environmental performance. Wisconsin has formed a multi-stakeholder group with DNR staff from five bureaus – Waste, Remediation & Redevelopment, Legal Services, Water and CEA. Other members include representatives from wastewater treatment plants, Labor, the Milwaukee School of Engineering, SHWEC, and consultants.

A small survey of Wisconsin SGP participants has shown significant pollution prevention successes:

- While production increased by 31 percent since 1992 (the baseline year for showing improvements in SGP), water usage increased by only 7 percent. This represents a savings of over 40,000,000 gallons of fresh water;

- The quantity of hazardous sludge generated and disposed of decreased by 68 percent, keeping in excess of 1,100,000 pounds of sludge out of landfills in 1997 alone; and
- The quantity of metals released to Wisconsin waters in 1997 decreased by 69 percent (since 1992) resulting in a reduction of approximately 5,400 pounds of heavy metals.

Thus, initial results of data collection show that pollution prevention is already well underway by SGP participants and further improvements are anticipated.

Initially, 10 Wisconsin firms had signed up to participate in the SGP, while nationwide over 175 had signed on. During 1998 and the first half of 1999, CEA, in cooperation with SHWEC, conducted outreach efforts and succeeded in doubling the sign-up to 20 facilities. Now, 274 companies nationwide are participating in the program.

Outreach efforts to increase Wisconsin participation in the SGP:

1998

June 11 - Wisconsin CSI Strategic Goals Program Information Session

July 15, Aug 20, Oct. 20 - Meetings with participating metal finishers, SHWEC, COMMERCE

Oct 8 - Meeting with POTWs

Sep 22 - Meeting with Green Bay area metal finishers and POTWs

1999

On April 12, the first multi-stakeholder meeting of the Wisconsin Strategic Goals Program was held. Approximately thirty attendees learned about SGP activities occurring in other states. Small workgroups were formed and these groups are now addressing specific issues relating to participating and succeeding in the Strategic Goals Program.

Next year's activities will include helping SGP participants meet their goals, pursuing a pollution prevention partnership (see below), and helping raise the overall environmental performance of the metal finishing industry.

I. PRINTING SECTOR

Printing is one of the largest business sectors in Wisconsin, with over 1600 printers in the state. The industry is also one of the largest employers. Printing takes place not only on paper, but also on plastics, metal foils and other paper products. Printing is done with rotogravure, flexographic, sheetfed or offset printing and with or without heat to assist in drying. With so many types of printing, there are also a number of different solvents needed to complete the printing job. Diversity of printing is not limited to the printed substrate, but the size of printers varies also—from the three-person shop to the national printers with multiple plants in Wisconsin.

PERFORMANCE MEASURES

Interagency Cooperation

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).

PNEAC was the first compliance assistance center funded by EPA. SHWEC was also instrumental in developing elements of the PNEAC World Wide Web site, establishing 2 international e-mail discussion groups, a fax back system and numerous printing pollution prevention fact sheets. In 1998, SHWEC produced and delivered the third in a series of videoconferences for printers.

This videoconference focused on pollution prevention activities for screen printers and was delivered via satellite to over 160 sites nationally. There were 1,000 participants in the program with graphic arts students attending the program at several UW and technical college campuses in Wisconsin. Each conference has a call-in question and answer period, as well as follow-up answers to those who could not be answered on the air. The national conference was viewed in 29 sites throughout the nation, and at 8 different sites in Wisconsin.

Awareness, Action, and Results

In October of 1998, DNR's printing sector specialist and a representative from the Bureau of Air Management became involved in a national initiative — Pollution Prevention in Permitting for Printers, or P4 — to pilot a new Title V permit program. Partners include: the USEPA, Flexible Packaging Association, Screenprinting and Graphic Imaging Association, International, and participating companies. Wisconsin is one of just two states, the other being Pennsylvania, to enter into this innovative partnership. Wisconsin has two printers who are interested in pursuing this program. Participating printers are from the flexible packaging and screenprinting sectors.

J. SCRAP RECYCLING AND AUTO SALVAGE SECTOR

The DNR has assigned a scrap metal and salvage sector specialist to work with the industry on incorporating Pollution Prevention (P2) ideas into its daily operations while ensuring economic growth.

Wisconsin has roughly 700 salvage yards operating under a Department of Transportation (DOT) salvage license. The bulk of the salvage industry is made up of those that collect automobiles for dismantling and wholesale of reusable parts and those that operate facilities that shred, shear, recycle or process all metals before they are remelted and formed into new, high quality products. The industry is represented by 2 major associations, the Wisconsin Institute of Scrap Recycling Industries (WISRI) and Concerned Auto Recyclers of Wisconsin (CARS).

If not managed properly, waste associated with the processing of our old automobiles, refrigerators or other appliances, microwaves, computers etc., can enter and contaminate the environment. Though some yards go through great lengths to recover and recycle waste oil, CFCs, antifreeze, mercury switches, lead acid batteries, gasoline, copper, etc., quite often the not-so-good operations overlook these materials to get at the more valuable ferrous and nonferrous metals. When efforts aren't made to properly recycle this material, they usually end up as shredder residue, are landfilled and can no longer be looked upon as a recyclable product.

PERFORMANCE MEASURES

Interagency Cooperation

Another agency that regulates the salvage industry is DOT. Though their purpose and goal is different than DNR, DOT and DNR field staff have been meeting to see how the two agencies might assist each other in accomplishing their goals. In mid 1999 DOT and DNR staff conducted a joint inspection of two salvage yards, which resulted in citations from DOT and ongoing enforcement action by the DNR. DOT has also agreed to require a salvage operation to meet the requirements of the DNR permit programs before they will issue a salvage license. Some DOT investigators

have already refused salvage licenses to applicants not being able to show proof that DNR requirements are met. DOT and DNR will continue to discuss ways to compliment each other's efforts.

In recent years Wisconsin has established regulatory permit programs to address certain concerns associated with air pollution from CFCs and stormwater contamination. Salvagers in Wisconsin are required to obtain permits and/or retain a certified individual for the removal of Freon from salvaged automobiles and appliances. (Freon damages the ozone layer that protects life on Earth from damaging ultra-violet radiation.) In 1999, the Bureau of Watershed will be issuing Storm Water Pollution Prevention Permits to all salvage yards.

Introductory meetings were arranged with the board members from each industry association to introduce the business sector specialist and to listen to the concerns in this sector. A booth was displayed at the Upper Midwest Auto Salvage Convention in February to introduce members of industry to the sector specialist. DNR staff from the West Central Region were given informational brochures on the sector specialist's role.

Data

Table L.

Total Hazardous Waste Generation and Transfers from Facilities in the Auto Salvage Sector (SIC Code 5015)				
Annual Report			Manifest	
Year	# Reporting Facilities	Total Haz Waste Generation	# Reporting Facilities	Total Haz Waste Transfer
1989	2	9,420	9	14,213
1990	2	11,701	11	17,199
1991	2	15,458	11	13,494
1992	3	4,259	11	29,738
1993	2	6,104	13	38,930
1994	3	8,249	11	23,155
1995	2	7,401	12	21,649
1996	0	0	10	22,894
1997	0	0	9	19,602

Table M.

Total Hazardous Waste Generation and Transfers from Facilities in the Scrap Recycling Sector (SIC Code 5093)				
Annual Report			Manifest	
Year	# Reporting Facilities	Total Haz Waste Generation	# Reporting Facilities	Total Haz Waste Transfer
1989	2	5,917,387	8	7,296,582
1990	3	2,407,066	10	10,251,779
1991	3	5,900,168	10	9,948,691
1992	5	5,936,881	8	10,926,896
1993	4	7,494,337	10	13,131,124
1994	3	12,939,772	8	13,315,937
1995	3	8,121,881	9	15,831,302
1996	1	8,496	9	13,594,804
1997	2	7,473,485	12	12,089,044

Awareness, Action, and Results

With a 1998 Waste Reduction and Recycling Grant, 13 salvage yards participated in a seat foam collection effort to determine the feasibility of removing seat foam from automobiles. Seat foam is a valuable and fully recyclable material that is often sought by the carpet industry. The project yielded roughly 4,000 lbs. of post-consumer urethane foam (120 cubic yards) and information on which seat designs made removal of foam feasible.

One of the best tools available to control contaminants from getting into our surface and groundwater is the Industrial Stormwater Permit that will be issued to all salvage operations by the end of 1999. As part of the permit, salvagers can opt to meet the conditions of the permit alone or in a group formed under a Cooperative Compliance Program (CCP). The CCP is a pilot program that allows industry to take ownership in developing a program that will ensure environmental protection through the use of Best Management Practices (BMPs). The CCP will be entrusted to conduct training programs annually, report violations, and assist members in obtaining compliance with a schedule designed by the DNR Storm Water Permit staff.

Two CCP groups have been established to date. The WCCP, Inc. representing the scrap recycling and waste industry have roughly 65 members. Their consultant has already provided the first training session, completed most of the SWPPP, and conducted the first round of inspections while providing suggestions on BMPs to each yard separately. The ARCCP, Inc. currently has over 115 members and represents the auto dismantlers. Permits to the auto dismantlers should be issued by August 1999.

K. WOOD PRODUCTS SECTOR

The wood products industry, as defined by DNR, encapsulates everything from sawmill operations to secondary manufacturers. It is important to separate the various operations to better identify pollution prevention activities and techniques.

PERFORMANCE MEASURES

Interagency Cooperation

In 1998 DNR partnered with SHWEC to compile the second edition of “*Wood Products Value-Added Manufacturing and Finishing: Efficiency, Waste Reduction and Regulations*”. This document allows wood product industries to have a “tool box” at their finger tips to outline environmental regulations, waste reduction and pollution prevention options as well as contact names and numbers that can help them with pollution prevention options. The DNR business sector specialist has distributed at least 50 manuals and/or excerpts from it.

The Small Business Clean Air Assistance Program (SBCAAP) of COMMERCE and the wood products business sector specialist at DNR continue to educate and assist wood product businesses through information on air regulations. While much information is given out to assist the company on how to maintain compliance, the communications also assist the company in making decisions to move beyond compliance by using pollution prevention opportunities.

The DNR is making strides to partner with the North West Regional Planning Commission. The commission is a multi-faceted entity that also incubates new and developing businesses, which is intricate to the success of pollution prevention in the Northwest portion of the State. By establishing communication between this agency and the DNR, the business sector specialist can evaluate and assist with new business start-ups. By playing an active role in the permitting process, the business sector specialist can influence work practices and chemical selections. In the past year the wood products sector specialist has participated in over 20 new business start-ups.

The sector specialist is working with SHWEC staff to evaluate the technical feasibility of utilizing wood waste in a composting process.

Data

Table N.

Total TRI Emissions and Transfers from Facilities in the Wood Products Sector (SIC Codes 2500-2599)									
Year	# Reporting Facilities	Fugitive Air Emissions	Point Air Emissions	Water Releases	Land Releases	Total Env't'l Releases	POTW Transfers	Off-site Transfers	Total Releases & Transfers
1991	24	193,626	1,231,436	0	0	1,425,084	1,010	698,228	2,124,322
1992	24	245,897	1,567,562	0	0	1,813,459	1,001	866,920	2,681,380
1993	27	285,149	1,563,983	0	0	1,849,132	1,001	1,120,151	2,970,284
1994	28	259,829	1,453,067	0	0	1,712,896	895	1,135,968	2,849,759
1995	25	206,244	1,204,956	0	0	1,411,200	942	1,206,067	2,618,209
1996	23	165,338	910,466	0	0	1,075,804	884	1,416,442	2,493,130
1997	19	171,729	690,989	0	0	862,718	579	1,623,498	2,486,795

Awareness, Action, and Results

Over the last year, sawmill operators were reminded of their responsibility to deal with their primary waste stream – sawdust. Through a number of outreach sessions the wood products business sector specialist reached over 30 different sawmills and encouraged them to evaluate different technologies that are available to turn that "waste stream" into a usable product.

The wood products business sector specialist also conducted a survey of Northern Wisconsin Landscapers to determine the level of comfort with and desire for using a soil additive derived from wood waste.

To facilitate the awareness of CEA and our numerous projects and goals, the wood products sector specialist has hosted a number of small business outreach sessions. The sessions are to encourage a two-way dialog between various business sectors and the DNR to discuss current/new regulations, pollution prevention ideas, and program/DNR efforts. The sessions are being held quarterly with the first addressing the building community (30 attendees), the second directed at realtors, with a third focusing on economic development agencies.

On a more grass roots level, the sector specialist hosted two events to highlight pollution prevention. A local company offered tours and spoke of their tremendous reduction of paper (Print Pack). A Storm Drain Stenciling outing (to create a visual reminder for people of what not to put down storm drains) was performed with participants from a local outdoor enthusiasts group.

IV. TECHNICAL ASSISTANCE, PUBLICATIONS AND THE WEB, AND RECOGNITION — THREE ESSENTIAL PROGRAMS

Education and outreach continues to be a main tool to reach the varied audiences that use pollution prevention strategies in their day-to-day lives at home and at work. Workshops and seminars, technical assistance from staff, and publications all work together to provide comprehensive assistance. Recognition programs celebrate successful efforts on behalf of businesses and organizations and encourage them in future projects.

A. Technical Assistance & Training

1. SHWEC

Providing technical assistance, as well as education, for Wisconsin business and industry, continues to be a major focus of the SHWEC pollution prevention program. In 1998, SHWEC staff provided responses to over 300 requests from clients throughout the state. Each request for information results in two to four hours of work, on average, to complete the research and prepare a written response. Conversely, the assessment process may take two to five days to complete background work, conduct the on-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.

ON-SITE ASSESSMENTS

SHWEC specialists provided on-site assessments for 64 companies in 1998. Over \$3.8 million in potential cost savings were identified. This number, although very large, is probably the tip of the iceberg. Nearly \$1.5 million in potential cost savings were identified at one company alone, a cream cheese processor.

The potential cost savings identified during technical assistance activities often take a considerable amount of time to be realized in actual cost savings and waste reduction. Critical to that success is the level of commitment provided by each company and the hard work of the champion or team located in the company. A good example is Krones Incorporated of Franklin, Wisconsin.

SHWEC initially provided technical assistance to Krones in 1992. Using the information and encouragement provided by SHWEC, the environmental coordinator at Krones Incorporated has implemented a model environmental management program. The company has almost completely eliminated hazardous waste and reduced annual air emissions to hundreds of pounds versus tons. In 1998 Krones Incorporated was recognized for their environmental accomplishments with the Governor's Award for Excellence in Hazardous Waste Reduction.

SHWEC also continues to provide environmental technical assistance and expertise for the Wisconsin Manufacturing Extension Partnership (WMEP) program and for UW-Extension Small Business Development Centers when requested by small business development counselors. In 1998, SHWEC staff in the audit grant program and Industrial Recycling Assistance Program (IRAP) provided matching support for WMEP with one SHWEC specialist assigned to each of the 3 WMEP regions.

IRAP conducts environmental assessments focused on both pollution prevention and industrial waste recycling. The Wisconsin Recycling Market Development Board (RMDB), which is administered by the Department of Commerce, provided funding for IRAP in 1998. IRAP completed 46 recycling and waste reduction assessments. IRAP also supports recycling market development by providing business referrals to RMDB commodity specialists who develop and introduce new recycling projects for RMDB funding decisions.

ADVANCED EDUCATION

SHWEC has developed a partnership with DNR and North Central Technical College to create an elective two to three credit course including pollution prevention to supplement their existing environmental and safety certificate program. This program is scheduled to be offered as distance education in the near future to technical campuses statewide.

2. COMMERCE

COMMERCE houses the Small Business Technical and Environmental Compliance Assistance Program (SBTCP). The SBTCP contains three components: the Small Business Clean Air Assistance Program (SBCAAP), the Clean Air Ombudsman and a Compliance Advisory Panel. Established in November 1992, these programs are a mandatory part of section 507 of the Clean Air Act Amendments.

The SBCAAP staff provides technical assistance through factsheets, informational brochures and other publications, answers compliance questions, conducts on-site consultations, responds to permitting inquiries, coordinates environmental compliance workshops and directs businesses to other pertinent assistance providers.

Through the program, Clean Air Specialists and a Small Business Clean Air Ombudsman work as a liaison between small businesses and state regulators. Serving as a free, confidential, non-regulatory resource to small business owners, the small business staff responds to inquiries, creates user-friendly publications written in "laypersons" terminology, provides permitting and compliance information and tracks the activities of the program through a database system.

TRAINING ON NEW REGULATIONS

Representatives from DNR, COMMERCE and SHWEC attended a SBCAAP sponsored training on EPA's 112R Risk Management Program, a regulation which addresses accidental airborne releases of chemicals. Thousands of businesses in Wisconsin may be affected by this new regulation. The training highlighted pollution prevention options such as material substitution and reduction to help facilities avoid this regulation.

WORKSHOPS & SEMINARS

With help from the other pollution prevention providers in the state, the SBCAAP staff incorporate the pollution prevention message into outreach materials prepared for their clientele. The majority of all workshops and seminars coordinated by SBCAAP since 1995 have included a waste reduction/pollution prevention component. SBCAAP provided 112 workshops and seminars in 1997 and 1998 and reached almost 6000 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.

Through customer satisfaction surveys and workshop evaluations, 85 percent of the businesses that responded noted that they have made changes or improvements to their process based on advice received through the Small Business Clean Air Assistance Program. Seminar evaluation forms from 1997 and 1998 show that 82 percent of the attendees left the event with a greater understanding of the regulations.

B. Publications and the Web

1. 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 publications 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.

TECHNICAL ASSISTANCE, PUBLICATIONS AND THE WEB, AND RECOGNITION

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 newsletter Waste•Less•News (described below). Customers can mail or fax the order form back to DNR. Copies of publications are stored in a warehouse and are mailed promptly to customers. Most of the publications in the Clearinghouse are distributed free of charge.

During the past year CEA's primary effort has been to update existing publications and make them available on CEA's Web page on the DNR's Web site. Over 100 publications are now available on the Web and there has been increased use of the web as the source for publications. We anticipate that this trend will continue, although there will continue to be the need to distribute paper copies of publications to businesses and individuals that do not have web access.

PUBLICATIONS DISTRIBUTED BY COOPERATIVE ENVIRONMENTAL ASSISTANCE (CEA) AND DNR'S HAZARDOUS WASTE MINIMIZATION (HWM) PROGRAM

Table O.

State Fiscal Year (July 1 to June 30 th)	Publications Clearinghouse			CEA Site on DNR Web	
	Number of Orders Filled	Number of Publications Sent	# Publications Available	# Publications Available	# Hits "Publications on-line" Page
1998 – 1999	160	4527		>100	344
1997 – 1998	431	16887	>280	-	-
1996 – 1997	267	11338	>205	-	-
1995 – 1996	1279	36771	>172	-	-
1994 – 1995	1134	37885	>109	-	-
1993 – 1994	na*	Na	na	-	-
1992 – 1993	na	Na	na	-	-
1991 – 1992	371	Na	>125	-	-
1990 – 1991	375	Na	na	-	-
Jan. 1, 1990 - June 30, 1990	448	Na	>50	-	-

* Not Available (na) means that the data was not available before publication of this Report.

WEB SITE

Over the past year, CEA has information on the Web for both businesses and individuals, covering everything from business sectors to pollution prevention. On-line publications and clip art provide customers with easy-to-access resources. Special programs like ISO 14000, the Environmental Cooperation Pilot Program, and the Green Tier Program are featured. News and Calendar of Events sections provide announcements of upcoming conferences and events and the bureau's newsletter, Waste•Less•News, is posted on-line as well.

The number of visitors has grown steadily over the past several months as more and more material is added. From January of 1999 to July, hits for the home page has gone from 43 to 413 in July with average hits a day increasing from 184 to 759. The average user session (the amount of time each customer spends at the site) has doubled and more people are repeat customers to the site. The Environmental Cooperation Pilot Program and ISO 14000 areas are very popular, as is the Publication section. Please see Appendix B for actual pages from the web site.

2. 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's site and other internet sites. SHWEC publications are available from any of the SHWEC offices located in Madison, Milwaukee, Green Bay or Stevens Point. People using the internet can contact SHWEC for publications and information at the SHWEC world wide web site, <http://shwec/uwsp.edu>.

3. COMMERCE

The SBCAAP authors numerous publications outlining compliance requirements for air pollution regulations. Each of these factsheets contains a section highlighting pollution prevention tips and recommendations. By exploring these pollution prevention options, businesses may reduce their emissions to a point where certain regulatory requirements may no longer be applicable. Through these publications, the SBCAAP helps businesses reach compliance by avoiding the creation of pollution.

One such publication is a free quarterly newsletter, the *Clean Air Advisor*, which provides compliance information, training schedules, and pollution prevention recommendations. The Clean Air Advisor reaches over 2,000 smaller businesses around the state. To reduce the amount of paper generated through the mailing of the newsletter, the SBCAAP also offers the publication to subscribers electronically.

C. Recognition Programs

1. Prevention/Environment/Prosperity Award and the Governor's Award for Excellence in Hazardous Waste Reduction

The Prevention/Environment/Prosperity (P/E/P) Award and the Governor's Award for Excellence in Hazardous Waste Reduction continue to recognize excellence in pollution prevention and waste reduction. The 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, 42 Wisconsin businesses have been recognized with P/E/P Awards. COMMERCE works with the Federation of Environmental Technologists to coordinate the Governor's Award for Excellence in Hazardous Waste Reduction. Both SHWEC and DNR staff have served on the judging panel for the Governor's Award for Excellence in Hazardous Waste Reduction award since its inception, and have nominated several top-performing companies for DNR and COMMERCE awards programs.

2. The Governor's Waste Reduction and Recycling Awards Program

After six successful years, the *Governor's Waste Reduction and Recycling Awards Program* has ended. The awards program met or exceeded each of the goals it was designed to achieve during the phase-in of Wisconsin's Recycling Law. As the Recycling Law took effect and recycling became more routine, this program witnessed an appropriate decline in applications. Over the last few years there was repetition of the types of programs groups were submitting. We attribute this to a healthy sharing of ideas amongst businesses, communities and schools. This awards program has been declared a success.

This awards program met or exceeded each of the goals outlined seven years ago:

- **Boost awareness of waste reduction, market development and buying recycled products**

Awareness was achieved through a vigorous publicity campaign. With the help of sponsors who offered their time, mailing lists and free space in their publications, we were able to get the word out on the awards program, deadlines, winners and other recycling information. A barrage of press releases and adslicks were given to the media several times a year. A library of news clippings and newsletters proves the results of the media campaign.

- **Motivate others to replicate successful waste reduction and recycling programs**

The awards program helped recycling become a norm for the people of Wisconsin by bringing role models to the forefront for the rest of the state to follow. The program helped prove recycling is doable. Winners eagerly

became information sources. For example, Karen Thyne, a teacher at award winning Eagle River Elementary School has shared ideas with several inquiring Wisconsin and Michigan educators.

- **Encourage partnerships and joint efforts**

Recycling, waste reduction and market development require people to work together. Prevailing applicants worked with others to achieve their goals. For example, the 1998 Market Development Star Award co-winners, Sal Service, Inc. and Briggs & Stratton Corp. pooled their time and talent to discover a better way to process used oil filters that resulted in a more usable end product. The Wheel Chair Recycling Project, a 1997 award winner involved in collecting, refurbishing and distributing used medical equipment, advocates their reliance on volunteers and partnerships.

- **Build positive community spirit and foster feelings of pride and accomplishment**

In 1992, it was hoped this short-term joint venture would recognize many businesses, schools, citizens, organizations, and communities for outstanding recycling and waste reducing achievements. Governor Thompson and Secretary Meyer have awarded 120 exemplary recycling and waste reduction programs. Winners and their communities are proud of their accomplishments. For example, 1997 winner Trempealeau County made an outdoor sign for its recycling center acknowledging it as a Governor's Award recipient. A few non-winners have even boasted in local papers about their honorable mention status.

V. INNOVATIVE APPROACHES

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 policies, procedures, processes, and documents that an organization develops and uses in order to systematically address their environmental impacts. The hope is that ISO 14000 will 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 many businesses will require all of their suppliers to be ISO 14001 certified, and it is 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.

Learning About and Promoting ISO 14000

DNR actively participates in a variety of groups at the state and national levels which are dedicated to sharing knowledge and experience with ISO 14000 and discussing policy implications. The original ISO 14000 working group, formed in 1995, was replaced by the Cooperative Agreement Advisory Group. This small group first convened in the summer of 1999 and is comprised of a representative from each of the following: companies participating in Wisconsin's Environmental Cooperation Pilot Program (ECPP); DNR; COMMERCE; EPA; Wisconsin Manufacturers and Commerce, and environmental organizations. The primary purpose of this group is to develop performance measures for the Environmental Cooperation Pilot Program (please see next section in report), decide on strategies for making program data available to the public, monitor DNR/EPA cooperation, and assist in the drafting of annual reports to the Wisconsin Legislature.

At the national level, DNR is participating in the Multi-State Working Group (MSWG) on ISO 14000. This group includes representatives from EPA, state agencies, business and public interest groups. The initial focus of the MSWG was to develop a common set of questions and measurements by which ISO 14000 pilot projects around the nation might be evaluated. Members of the MSWG have also been active in drafting proposed revisions to the ISO 14000 standards.

Survey Results in Grant Program for Certification

COMMERCE 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. COMMERCE 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.

As a result of this survey, COMMERCE pioneered a grant program targeting businesses seeking to achieve ISO14000 certification. A \$5,000 grant available through the agency, covers training costs associated with the certification process including pollution prevention and general ISO 14001 training. In certain cases the grant can be used to cover the cost of final certification if the business is located in an area needing additional job creation or has other grant assistance that already covers training.

Training Assists Companies with EMS Development

SHWEC continues to encourage and promote the development of environmental management systems with technical assistance clients and other interested parties. For example, SHWEC staff provided detailed training to personnel at the SC Johnson & Sons Company and Rockwell Automation Corporation. This training was designed to help the companies develop their own internal teams to work on EMS issues.

Many of the smaller companies, who were assisted with on-site waste reduction and recycling assessments in 1998-99, were also provided with EMS development guidance and encouragement. SHWEC's observation is that interest in EMS development and specifically ISO 14000 has significantly increased in 1998, but is not yet fully embraced by industry on a broad basis.

B. Environmental Cooperation Pilot Program

The Environmental Cooperation Pilot Program builds on ISO 14000, and is an effort to experiment with regulatory innovation. The program is designed to negotiate individual agreements with companies that have environmental management systems in place and who have committed to superior environmental performance. The ECPP 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 1999, DNR has received five preliminary applications from Wisconsin companies, and all five of those companies have been selected to proceed to the next stage in the process — negotiating an Environmental Cooperative Agreement with the DNR. The companies that have been selected into the Environmental Cooperation Pilot Program include: Navistar International (Waukesha); Kohler-Generator (Town of

Mosel); Cook Composites and Polymers (Saukville); Northern Engraving (Sparta); and Madison Gas and Electric (Madison).

Companies participating in this program are rewarded for finding innovative ways to achieve superior environmental performance. In exchange for their 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 experiment with ways to combine air, water, and waste permitting processes. Additionally, implementation 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 and a greater commitment to pollution prevention on the part of participating companies. Additionally, the public will be involved and informed as companies set environmental goals, many of which will go beyond what environmental regulations currently require.

VI. SUCCESS STORIES & PARTNERSHIPS

No report is complete without success stories. These range from a brand new, international agreement with the state of Bavaria in Germany to an initiative in Green Bay to make their community more sustainable.

A. COMMUNITY MERCURY REDUCTION

In late 1997 and throughout 1998, a Mercury Roundup was funded through a DNR Recycling Demonstration Grant to Mercury Waste Solutions, a mercury reclamation facility in southeast Wisconsin.

The Mercury Roundup offered free mercury collection and recycling to communities in the state. This program concluded as a huge success and was the largest collection of mercury in the state. The Roundup collected 3,579 pounds of elemental mercury, 5,539 pounds of mercury-containing devices, and 104,258 fluorescent lamps (fluorescent lamps contain mercury) from 470 participants. Thanks to this successful program, all of this mercury — collected from schools, dental practices, hospitals and households — was prevented from entering the waste stream and becoming an environmental problem.

The DNR and partner communities hope to replicate this success through the Wisconsin Community Mercury Reduction Program. This program is a DNR initiative to empower communities to successfully address mercury pollution prevention. Through education, outreach & collection efforts, eight communities throughout the state are actively working to virtually eliminate releases of mercury to the environment. The participating eight communities are Appleton, Green Bay, Madison, Marinette, Milwaukee, Kenosha, and Racine. Each community effort is directed through the municipality's wastewater treatment facility. These facilities are particularly interested in this effort since they are often on the receiving end of a community's waste mercury after disposal down drains and other means.

This year DNR awarded the communities with a Recycling Demonstration Grant, which will allow them to provide a Community Mercury Recycling Program (CMRP) to their communities and surrounding areas. Through each CMRP, very small quantity generators — including schools, dental facilities and householders — can recycle their mercury and mercury-containing products at no cost (free!) or at a reduced cost.

The goals of the program are to:

- 1) Prevent improper mercury disposal, thus reducing the amount of mercury going to landfills or wastewater streams and entering the environment;
- 2) Eliminate the potential for spills and/or accidental releases of mercury in the environment; and

- 3) Improve the collection potential of mercury-bearing wastes in an innovative way in Wisconsin.

Community Mercury Contacts:

Appleton: Shane Brooks, 920-832-5945

Green Bay: Dan Busch, 920-438-1039

Madison: Ralph Erickson, 608-222-1201 ext. 362

Marinette: Jeff Mayou, 715-732-5184

Milwaukee: Tom Nowicki, 414-225-2217

Kenosha: Bruce Rabe, 414-653-4335

Racine: Nora Erlandson, 414-636-9523

Superior: Diane Thompson, 715-394-0392 ext. 131

B. MERCURY MANOMETER REPLACEMENT ON DAIRY MILKING EQUIPMENT

Milking systems require a vacuum pump with a vacuum gauge to monitor line pressure. It is estimated that 10 percent of the 24,000 dairy farms in Wisconsin have a mercury-filled manometer holding 12 ounces of mercury, a known toxin. This totals approximately 1800 pounds of mercury on dairy farms in Wisconsin.

The mercury manometer replacement project was initiated with a \$40,000 grant from EPA's Great Lakes National Program Office (GLNPO). The Lake Michigan and Lake Superior drainage basins, which include about 1/3 of Wisconsin, were selected as the focus area. Dairy equipment service providers participate by collecting the mercury manometers and replacing them with new non-mercury manometers. Twenty-eight service providers are participating and have received a mercury collection kit and instructions for handling the mercury. The farm service provider completes a certificate and is paid \$200.00 from the grant for each mercury manometer replaced. The service provider transports and stores the mercury manometer until a licensed hazardous waste hauler picks them up and extracts mercury for recycling.

In some situations, such as a farmer leaving the milking business, a manometer is abandoned and a replacement gauge is not needed. In this case, the service provider completes a certificate of removal and is reimbursed \$100.

COOPERATING AGENCIES

Professor Doug Reineman from the University of Wisconsin provided technical information about milking equipment and is a partner in the project. County Extension agents provide additional technical information and expertise to farmers interested in the program. Inspectors from the Dept. of Agriculture, Trade and Consumer Protection leave brochures on dairy farms in targeted areas. The brochures

SUCCESS STORIES & PARTNERSHIPS

were also distributed to the 28 participating dairy equipment dealers to introduce the program to their regular service customers.

Mercury collected from the participating dairy equipment dealers will be coordinated with the Bureau of Agrichem Management's Agricultural Clean Sweep program in the southern part of the state to save on collection costs. The Northwest Clean Sweep program has a hazardous waste collection facility in Spooner and have agreed to accept mercury and manometers collected in that part of the state.

RESULTS

The program has received good publicity in the agricultural press and has been a success for the farmer, the dealer and the environment. As of June 30, 1999, 120 manometers containing approximately 90 pounds of mercury have been removed from Wisconsin dairy farms.

C. BAVARIA PARTNERSHIP

In December 1998, Governor Tommy Thompson and Dr. Werner Schnappauf, Director of the Bavarian State Ministry for Regional Development and Environmental Affairs, signed an historic agreement to promote joint projects on environmental protection and innovative regulatory reform. The Memorandum of Understanding (MOU) outlines ten general agreements to promote environmental management systems, integration of systems, small business and public sector interaction and cooperation, university research partnerships, and transatlantic personnel exchanges.

The work plan for this project will specifically address:

- Regulatory reform on a state, federal, European Union and international level;
- University research and information exchange;
- Creation and maintenance of sustainable communities, sister-city relationships between Bavarian and Wisconsin municipalities;
- River restoration;
- Enhancement of environmental management systems in the paper industry;
- Energy/utility information exchange and partnership discussions;
- Agreements with Nestle™ and BMW™ for promotion with integrated environmental, quality, and safety systems;
- Governmental leadership exchange to address sustainable systems thinking regulatory reform; and
- Environmental performance gathering and exchange.

AGENDA 21

Agenda 21 (initiated in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro) brought together the world's nations to jointly acknowledge the guiding principles of worldwide sustainable development. In essence, Agenda 21 describes the world's most pressing problems and how communities, industries, and individuals can make substantial strides in living comfortably today without destroying our environment and depleting resources needed for tomorrow's generations.

While Agenda 21 started as a global initiative, individual countries have adopted their own programs and in turn regional and local programs have followed. In 1997, Bavaria was the first state in Germany to formulate its own Agenda 21. From the very beginning it was clear that government alone could not make this happen, thus major forces in society are rallying behind the effort and now dozens of communities, urban and rural, have adopted local programs based on the state's model. "Act Today for Tomorrow," as stated in the local Agenda 21 of Bamberg, Bavaria, is but one example from dozens of communities taking sustainability to heart. Contacts have been made with the cities/counties of Racine, Green Bay, Milwaukee, Ashland, and Appleton to begin discussions on forming sister-city relationships. Via the Bavarian environmental ministry contact, Thea Fuscher, Bavarian cities are also being contacted. Materials describing Bavaria's Agenda 21 and Environmental Pact (see below) programs are being distributed to interested parties in Wisconsin.

This Bavaria-Wisconsin MOU provides an excellent opportunity for exchanging ideas and opportunities on an international level. By seeing examples in a German state that has fully embraced Agenda 21, the goal is for Wisconsin communities to also embrace sustainability.

UMWELT PACT

Another innovative approach to environmental protection by Bavarian Industries is called the Umwelt Pact or Environmental Pact. Except for being on a much larger scale, this pact is very similar to Wisconsin's Environmental Cooperation Pilot program. The Environmental Pact is a voluntary agreement between the Bavarian State government and Bavarian Industry aimed at greater protection of the environment. Dozens of individual companies, trade organizations, labor unions, department stores and chains, etc., have signed on and are making commitments for greater (beyond compliance) environmental protection. The agreement has both the industries and the state making strong commitments including:

SUCCESS STORIES & PARTNERSHIPS

Industry will:

- Continuously improve environmental protection in 500 companies beyond the scope of the statutory requirements (EMAS: more or less equivalent to ISO 14000);
- Submit 3,500 businesses to a preventive environmental audit;
- Conserve more energy and use it rationally;
- Avoid and recycle more waste;
- Make greater use of renewable resources; and
- Reduce emissions in transport.

The state of Bavaria will:

- Give the industry greater support with the remediation of environmental sites;
- Promote preventive protection of the environment; and
- Give more consideration to the concept of direct responsibility to industry in protecting the environment.

Efforts are currently underway to make contacts with industries and trade associations in Bavaria who have signed the Pact.

D. SUSTAINABLE GREEN BAY

Through a project called **Sustainable Green Bay (SGB)**, a diverse group of individuals and organizations have been working together to help the Green Bay region find a balance between the area's social, economic and environmental needs, without compromising future needs.

This project kicked off with over 130 community representatives from a broad array of backgrounds participating in a *Working Conference for Sustainable Green Bay* at UWGB in March 1999. The discussions at the conference were divided into the three components of sustainability: economy, environment, and community. Some of the main issues that arose included:

Environmental

- Balancing the environment and economy;
- Creating a regional trail and parks system;
- Reducing automobile dependency;
- Protecting/restoring natural land resources;
- Recycling/reducing waste; and
- Protecting/restoring natural water resources.

Economic

- Full cost accounting for human activities;
- Increasing cooperation/collaboration between government and private sector;
- Recruiting and retaining employees;
- Keeping downtown vital;
- Involving youth;
- Aligning the housing market;
- Shifting to future growth industries; and
- Supporting local small businesses.

Community

- Maintaining safe communities;
- Encouraging civic participation;
- Maintaining family values;
- Creating vital neighborhood communities;
- Embracing diversity;
- Involving elderly & youth in the community; and
- Welcoming change.

Building on these issues, nine discussion groups were formed using information and input from the attendees. The groups further clarified specific issues and challenges and began developing action plans to address those issues. These nine groups transformed into “task forces” and “action teams” that are continuing to meet over the next several months. Each of these teams will further develop their strategies for presentation at a conference.

E. DEPARTMENT OF NATURAL RESOURCES/DEPARTMENT OF DEFENSE ALLIANCE

This Alliance’s mission is to create a working relationship with government agencies and local communities to promote and implement pollution prevention as the preferred strategy for protecting the environment, conserving resources, fostering community well-being and enhancing mission readiness at Department of Defense (DOD) federal facilities in Wisconsin. The military units that are currently active participants are the Army, Army National Guard, Army Reserve, Air Force, and the Air National Guard. These units are implementing pollution prevention in their activities at Fort McCoy, Volk Field, Mitchell Field, Truax Field and the local Army National Guard and Reserve stations in cities throughout the state. Other participants are DNR, EPA and SHWEC.

SUCCESS STORIES & PARTNERSHIPS

DNR and Fort McCoy are co-chairs of the Alliance. The informal exchange of information between the military units during the meetings and base tours often leads to discussions about successful pollution prevention practices.

The Alliance has finalized the text for a charter, which states the vision, mission and goals of the alliance. A DNR staff expert spoken to the group about the universal waste rule and other discussion topics are planned. DNR plans to help the Alliance by providing staff with expertise in certain wastes to speak to the group about pollution prevention and answer questions about regulations.

This Alliance is patterned after other state/DOD partnerships and was initiated by Hugh McAlear, Army Regional Environmental Coordinator.

F. PULP & PAPER POLLUTION PREVENTION PARTNERSHIP

The Pollution Prevention Partnership (P3), with the pulp and paper industry, is now in its sixth year. The program features voluntary reduction in environmental releases by one of the state's largest industries and goes beyond what is required by law. In cooperation with DNR, P3 is coordinated by the Wisconsin Paper Council, the industry's trade association.

Twenty-five firms and 42 facilities participate in this program, which is designed to find cost-effective ways to reduce potentially harmful by products from the paper industry's manufacturing process. P3 covers air emissions, wastewater discharges, and solid and hazardous wastes. It also includes voluntary reduction goals for seven "target" substances—chlorine, chloroform, formaldehyde, hydrogen sulfide, methanol, phosphorus and xylene.

One way to measure progress is to compare environmental releases with production data. In 1992, the paper industry released 11.73 pounds of process-related pollutants for every ton of pulp, paper and paperboard produced in Wisconsin. In 1997, it released 5.11 pounds per ton of production, a drop of 56 percent in just five years.

Since 1992:

- Chlorine releases are down 21 percent;
- Overall chloroform emissions are down 47 percent;
- Formaldehyde emissions have declined almost 32 percent;
- Emissions of hydrogen sulfide have decreased almost 14 percent;
- Methanol releases are down 35 percent; and
- Xylene releases are down 28 percent.

Phosphorus releases dropped 13.6 percent during 1997. The major phosphorus dischargers in P3 also conducted minimization studies in the past two years to enhance performance while maintaining efficient wastewater treatment.

G. PROMOTING TOXICS REDUCTIONS THROUGH POTW* PRE-TREATMENT PROGRAMS

SHWEC specialists directly supported two pollution prevention initiatives implemented by the Clintonville Department of Public Works and the Milwaukee Metropolitan Sewerage District (MMSD). (*A publicly owned treatment works (POTW) is a wastewater treatment plant.)

- In Clintonville, significant industrial dischargers in the community were invited to participate in a voluntary program to help locate and reduce or eliminate phosphorous and toxic loadings to the wastewater treatment plant. The initial activity associated with the project appears to have eliminated both problems. However a second round of the project will look at small sources of pollutants such as commercial businesses, restaurants, car washes, etc.
- In Milwaukee, SHWEC specialists either accompanied inspectors or visited targeted businesses separately to provide pollution prevention ideas. Several pollution prevention projects were suggested to companies that historically had discharge problems with MMSD. Results of the project will not be known until follow-up activities in late 1999.

H. ENVIRO-PARTNERS FOR DANE COUNTY BUSINESSES

In the fall of 1996, a coalition of representatives from a half dozen municipal, county, and state governments as well as private non-profit and educational organizations, met to pool their experience and enthusiasm to assist Dane County, Wisconsin small businesses with adopting environmentally responsible strategies. After surveying the community to identify the business sectors with a priority need for assistance, the new Enviro-Partners for Dane County Businesses formed alliances with businesses and trade associations representing two target sectors; painters and multi-family dwelling property owners/managers.

Based on feedback from targeted businesses, Enviro-Partners has participated in numerous trade shows, prepared newsletter articles for sector trade members, and hosted informational sessions for businesses. Most recently, Enviro-Partners has aided in the Green Built Home Pilot Program with the Madison Area Builders Association's Parade of Homes.

SUCCESS STORIES & PARTNERSHIPS

Since the development of a Parade of Homes site begins with an undeveloped plot of land and the planning and building occurs within six months, there appeared to be the opportunity to provide Enviro-Partners' services at each stage of the process:

1. Architectural design, including green building siting aspects, stormwater runoff considerations, and low impact landscaping;
2. Building material specifications;
3. Waste reduction and recycling at building sites; and
4. Information about interior finishing– paint, wood finishing, types of wood, energy conservation, and lighting.

The group is working on the documentation of this process with photographs and written materials that describe how business/government partnership impacted the waste reduction behavior of building and associated trades. It also surveyed Parade attendees to gauge consumer knowledge and educate them regarding “green” products and practices.

The next Enviro-Partners project is an outreach program for Madison-area apartment owners. This program will address hazardous waste, furniture, and general waste disposal.

CONCLUSION

It is our hope that through these pollution prevention reports, that the reader has a better understanding of the variety of pollution prevention initiatives going on throughout Wisconsin.

Staff from all three agencies, DNR, SHWEC, and COMMERCE, wish to thank their many partners in making Wisconsin's environment a safer, cleaner and more sustainable place to live. In the next year we look to improve our programs and performance measures, start new projects, and continue to fulfill our vision of a better future in the next year.

This appendix explains more about the databases and data collection tools that generated the data in several of the business sector reports.

TOXICS RELEASE INVENTORY

The Toxics Release Inventory (TRI) is a national database that is a component of federal Community-Right-to-Know Law. It identifies facilities and the chemicals they manufacture and use, as well as the annual amounts of these chemicals released to the environment and transported elsewhere for treatment, recycling, energy recovery, or disposal. The Pollution Prevention Act of 1990 expanded the TRI to include additional information about waste treatment and source reduction (pollution prevention) methods.

Large manufacturing facilities make up the bulk of TRI reporters due to the program's reporting thresholds. Facilities must report if they have more than 10 employees, have an SIC code between 2000 and 3999, and manufacture or process in excess of 25,000 pounds or otherwise use in excess of 10,000 pounds of a listed chemical. Consequently, the facilities reporting to TRI represent only a small portion of all the facilities using and releasing toxic chemicals.

At the program's inception, TRI included over 300 chemicals and chemical compounds on its reporting list. In 1995, 286 chemicals were added to that list, bringing the total to over 600. Individual chemicals are periodically listed and de-listed in a review process administered by EPA. The most notable changes were the de-listing of acetone for the 1995 reporting year, significantly reducing reported air emissions; and the addition of nitrate compounds for the same year, significantly increasing reported water emissions.

Several of the sectors discussed below fall into TRI industrial categories and are consequently accompanied with TRI data to provide a baseline look at emissions. Though TRI data dates back to 1987, these tables begin with 1991, the first year TRI gathered pollution prevention information. The TRI data tables that accompany some of the business sectors contain the following information:

Fugitive air releases – Any air release that does not come from stacks, vents, ducts, or any other confined air stream; for example, equipment leaks, evaporative losses from open vats or baths, spills, etc. Generally determined via engineering estimates and mass balance calculations.

Stack air releases – Any air release that originates in a confined air stream; for example, stacks, vents, ducts, or pipes. Can be determined either by actual monitoring data or by estimation techniques.

APPENDIX A – THE METADATA SECTION

Water releases – Any discharge to receiving streams or water bodies, including process outfalls, waste water discharge, and storm water runoff. Does not include discharges to Publicly Owned Treatment Works (POTW). Can be determined either by actual monitoring data or by estimation techniques.

Land releases – Disposal of listed chemicals that occurs on land on the facility's ground. Includes landfills, land treatment/application farming, surface impoundment, spills and leaks. Again, can either be actual monitoring data or estimation techniques.

Total environmental releases – The sum of fugitive and stack air, water, and land releases.

POTW transfers – Any discharges to a Publicly Owned Treatment Works (government-owned wastewater treatment facility).

Off-site transfers – Any transfer or transport of a listed chemical off of the facility grounds for the purposes of disposal, treatment, recycling, or energy-recovery.

Total releases and transfers – The sum of total environmental releases and total transfers.

POLLUTION PREVENTION DATA FROM THE TOXIC RELEASE INVENTORY

Section 8 of the annual TRI provides one of the few available sources of pollution prevention data. The TRI collects information on the types of source reduction (pollution prevention) activities implemented by facilities in the reporting year, as well as how the facility identified the opportunity for source reduction.

Pollution prevention information was added to the TRI reporting form in 1991. The number of businesses that have reported pollution prevention activities since that time are as follows:

Year	Total # of TRI Facilities in Wisconsin	Facilities Reporting Pollution Prevention	
		#	Percent
1991	898	28	3.1
1992	933	208	22.3
1993	925	265	28.6
1994	910	245	26.9
1995	883	214	24.2
1996	899	211	23.5
1997	883	182	20.6

The numbers suggest that in 1997, 1 in 5 Wisconsin businesses implemented pollution prevention techniques, slightly down from the 1 in 4 of previous years. The

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.

Though the numbers of businesses implementing pollution prevention techniques has dropped slightly over the years, the average number of chemicals each facility targets for pollution prevention has been increasing, from 1.5 in 1992 to 3 in 1997.

Solvents are the most common chemicals for which pollution prevention techniques are implemented. For all years, xylene has been reported most frequently, with methyl ethyl ketone, toluene, and glycol ethers following closely.

Every year, businesses most often used participative team management to identify pollution prevention opportunities. Other actions include pollution prevention opportunity audits, vendor assistance, and employee recommendations.

Good operating practices and process modifications are the two most common methods used to prevent pollution. Through 1996, raw material modifications were the third most common pollution prevention method. 1997 saw a change as businesses focused more on spill and leak prevention and surface preparation than on raw material modifications in their pollution prevention efforts.

AIR EMISSIONS MANAGEMENT SYSTEM

The Air Emissions Management System (AEMS) provides estimates of actual calendar-year emissions of 576 regulated air contaminants. For each of the 576 contaminants, a reporting threshold is specified in State regulations. Any facility, regardless of its type of operations, must report its estimated emissions for any contaminants emitted above the corresponding reporting thresholds. Many facilities opt to report emissions below the thresholds.

Some sectors below that did not fall into TRI industrial categories are accompanied by AEMS data. AEMS data is only presented back to 1993 due to reporting requirement changes. The AEMS data that appears is a sum of the reported emissions for each year.

HAZARDOUS WASTE ANNUAL REPORT

Wisconsin large and small quantity generators and transport, storage, and disposal (TSD) facilities are required to report annually on their hazardous waste generation and management. The information collected is similar to that required by USEPA in its biennial hazardous waste reporting form.

A hazardous waste may be a listed hazardous waste or a characteristic hazardous waste because it demonstrates the characteristic of ignitability, corrosivity, reactivity,

APPENDIX A – THE METADATA SECTION

or toxicity. Note that hazardous waste codes do not directly correspond to a chemical CAS number. In fact, inert materials such as water may make up the bulk of the mass of the hazardous waste listed.

In 1994 Annual Report requirements were changed. In odd numbered years, a facility fills out a comprehensive long form describing their hazardous waste generation, including specific substances and amounts. In even numbered years, a facility fills out a shorter form, summing the generation amounts and not listing specific substances.

HAZARDOUS WASTE MANIFEST

The manifest is a shipping form that tracks hazardous waste from where it is generated to the facility where it is treated, stored, or disposed. Large and small quantity generators, defined as those producing more than 100 kilograms (220 lbs) of hazardous waste per month, or accumulating more than 1,000 kilograms (2,200 lbs) at any one time, must fill out a manifest form when shipping their hazardous waste for off-site storage, treatment, disposal, or recycling. Very small quantity generators may use the form, but are not required to.

The Hazardous Waste Manifest data is a sum of all the wastes that were shipped from generating facilities in each year. The number of reporting facilities refers to the number of facilities that filled out at least one manifest in the year, not the number of manifests.

The Web address for the Bureau of Cooperative Environmental Assistance is <http://www.dnr.state.wi.us/org/caer/cea/>. This sheet outlines the contents of the main page.

What is Cooperative Environmental Assistance?

News and Events

Training sessions, seminars, and a calendar covering all events related to the Bureau of Cooperation Environmental Assistance.

Compliance Assistance

Business Sectors; what they're about and who the specialists are, case studies.

Projects & Partnerships

What they are, how to join, what they do for you and much more. Includes: Climate Wise, Dry Cleaners' Partnership, Efficiency 2000, The Great Printer Project, One-Stop Reporting, Pollution Prevention, Pulp and Paper Pollution Prevention Partnership, Wastecap Wisconsin, Wisconsin/Bavaria Regulatory Reform Working Partnership.

Award Programs

The Brogan Award, Governor's Award for Excellence Hazardous Waste Reduction, Prevention/Environment/Prosperity Award.

ISO 14000

ISO 14000 is a certification program based on a series of standards administered by the International Standards Organization (ISO). As companies have become more and more integrated into a world market, there has been concern that businesses in countries with more stringent environmental regulations face a competitive disadvantage. ISO 14000 attempts to address these concerns by establishing a uniform set of standards agreed upon by the international business community.

Environmental Cooperation Pilot Program

The Environmental Cooperation Program is a pilot program designed to evaluate innovative environmental regulatory methods including whole-facility regulation.

Reinvention

The Green Tier Regulatory Proposal

Publications

Case Studies, publications, Waste Less News (newsletter), clip art, administrative codes and state statutes.

Cooperative Environmental Assistance Bureau Wisconsin Department of Natural Resources

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Sector*	Sector Specialist	Office	Phone
•Auto Services	Lynn Persson	Madison	(608) 267-3763
•Chemical Manufacturers	Scott Lee	Milwaukee	(414) 263-8681
•Community Mercury Reduction	Randy Case	Madison	(608) 267-7639
•Dry Cleaning	Kim McCutcheon	Fitchburg	(608) 275-3207
•Energy	John Shenot	Madison	(608) 267-0802
•Food Processing	Jerry Rodenberg	Madison	(608) 266-7715
•Health Services	Randy Case	Madison	(608) 267-7639
•Metal Casting	Susan Lindem	Madison	(608) 267-0567
•Metal Plating and Finishing	Annette Weissbach	Green Bay	(920) 492-5865
•Printing	Mike Sloat	Baraboo	(608) 355-0811
•Scrap Recycling & Auto Salvage	Mark Harings	Eau Claire	(715) 831-3263
•Wood Products	Laurel Sukup	Rhineland	(715) 365-8936

*Sectors under consideration: plastic products and coating, petroleum, and aggregate production, small engine manufacturers, real estate, and tanneries.

Sector/Project	Rotating** Sector Specialist	Office	Phone
•Electronics Reuse and Recycling	Susan Hundt Bergan	Madison	(608) 264-6032
•Mercury	Paul Koziar	Madison	(608) 267-9388
•Performance Measures	Tim Mulholland	Madison	(608) 266-0061

** These positions periodically rotate amongst DNR staff.

Other Bureau Positions	Staff	Phone
•Bureau Director	Lynda Wiese	(608) 267-3125
•Program Assistant	vacant	(608) 267-9700
•Administrative Assistant	Lois Aide	(608) 267-7618
•Environmental Assistance Outreach Coordinator	Shelley Heilman	(608) 267-0873
•Environmental Assistance Outreach Coordinator, Editor	Jean Meyer	(608) 267-7425
of Waste•Less•News, Publications Coordinator		
•Environmental Assistance Outreach Coordinator	Kathy Oppegard	(608) 264-6286
•ISO 14000 Pilot Program Manager	Mary Hobbs	(608) 266-1962
•Mercury Specialist	vacant	-----
•Rock River Project	Jennifer Feyerherm	(608) 264-8951
•Web Coordinator	Tracy Fretwell	(608) 266-5892
•Waste Minimization Coordinator	Lynn Persson	(608) 267-3763

8/99

For questions about pollution prevention programs in SHWEC and COMMERCE, please contact:

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APPENDIX D—READER RESPONSE FORM FOR THE 1999 POLLUTION PREVENTION REPORT

Please fax back to Bureau of Cooperative Environmental Assistance, CO/8, at (608) 267-0496.

1. The information in this report was useful.

Yes				No
Strongly agree				Strongly disagree
5	4	3	2	1

2. The format of the report was practical for me.

Yes				No
Strongly agree			Strongly disagree	
5	4	3	2	1

3. I appreciate receiving the Report in its entirety rather than just the executive summary.

Yes				No
Strongly agree				Strongly disagree
5	4	3	2	1

4. This document contains information on a wide range of pollution prevention initiatives in Wisconsin.

Yes				No
Strongly agree				Strongly disagree
5	4	3	2	1

5. I learned about new pollution prevention programs.

Yes				No
Strongly agree				Strongly disagree
5	4	3	2	1

6. I look forward to reading next year's Pollution Prevention Report.

Yes				No
Strongly agree				Strongly disagree
5	4	3	2	1

What other pollution prevention topics would you like to see in a future Pollution Prevention Report?

Comments: