# Pollution Prevention Report - 2000
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# Executive Summary

Many people in the public and private sector work together on pollution prevention initiatives statewide. Preventing pollution means to avoid or stop creating pollution in the first place, so it does not need to be cleaned up or managed. This report outlines some of the results of these important projects.

Three different agencies, the Department of Natural Resources (DNR), the University of Wisconsin – Extension Solid and Hazardous Waste Education Center (SHWEC), and the Department of Commerce Small Business Clean Air Assistance Program (SBCAAP or COMMERCE), work together on a variety of pollution prevention projects to be able to share expertise and resources. This is the third in the series of reports, and focuses mainly on the time period from July 1999, through December 2000. This executive summary highlights the most important and exciting parts of our work.

## Innovative Approaches

The **Environmental Cooperation Pilot Program** is a Wisconsin initiative designed to test innovative approaches to regulation that enhance the quality of our environment. In February, 2000, Wisconsin Electric Power Company will be the first business in Wisconsin to sign a cooperative environmental agreement with the state under which the utility committed to pursuing environmental improvements beyond those required by current regulations.

Under the agreement, the company will reuse coal ash from its landfills as a fuel source, thus reducing its use of coal, freeing landfill space and protecting groundwater. It will also develop and carry out a facility-wide environmental management system at its Pleasant Prairie electric generating plant to identify and minimize or eliminate all environmental impacts. In return, the DNR will speed up and streamline permitting procedures while still protecting the environment; eliminate unnecessary monitoring requirements; and increase electronic information sharing to reduce paper use and speed decision making.

The Fact System is a new tool provided by the DNR that enables the public to access environmental data from over 6,000 companies in Wisconsin. It can be a useful tool for evaluating pollution trends over time, and for demonstrating progress in pollution prevention. It was launched on the internet in April 2000 and may be accessed from the DNR home page www.dnr.state.wi.us. The Fact System provides specific types of information that are commonly requested by the public, including facility names and contact information, air emissions inventories, and toxics release inventories.

## Partnerships

DNR, SHWEC and an environmental consultant worked together to create a **mercury reduction curriculum** and hold **teacher workshops**. These workshops describe the impacts of mercury and explain how mercury can be eliminated in schools and in the home to an audience of science teachers. Mercury issues in schools, along with the curriculum and dates for workshops, are found at the new schools' web site at: http://www.mercuryinschools.uwex.edu/.

The **Wisconsin/Department of Defense Alliance** is a working partnership between government agencies and local communities. It promotes pollution prevention strategies that protect the environment at Department of Defense (DOD) federal facilities in Wisconsin.The Alliance created a certificate of appreciation to recognize individuals whose performance enhances the goals of the Alliance. The first three recipients, who were recommended by their unit commanders, were military personnel that found ways to reduce waste in their units.

The **Great Lakes Wood Stove Changeout Program**, set for February through April, 2001, will improve air quality by supporting the changeout and disposal of old, inefficient wood stoves. Inefficient wood stoves contribute to air and water pollution by releasing particulates, volatile organic compounds (VOCs), as well as polynuclear aromatic hydrocarbons (PAHs), including benzo-a-pyrene. DNR will be offering an incentive payment of $200 for every old stove changed out and disposed of properly (taken to a salvage yard) through participating retailers in a Great Lakes Basin county. This project is a partnership between several states, Environmental Protection Agency (EPA) Region 5, and the Hearth Products Association (the trade association for hearth retailers). In Wisconsin, supporters include DNR, EPA, the Department of Administration, and the Department of Energy as well as the Hearth Products Association.

### Technical Assistance and Education

SHWEC staff provided direct **technical assistance** through on-site pollution prevention opportunity assessments for individual businesses throughout Wisconsin. Staff completed 45 on-site assessments in the year 2000. SHWEC staff also estimate that 200 to 250 additional requests for assistance via telephone and the internet, were served from the Green Bay, Milwaukee, Stevens Point and Madison offices.

SHWEC continued a history of providing education and indirect technical assistance through quality **environmental education programs** that focused on pollution prevention and environmental excellence. Those included the development and delivery of: a mercury in schools curriculum, a fourth, nationally broadcast satellite program for the printing industry, workshops for the metal finishing industry and many other training and education opportunities. For example, SHWEC provided pollution prevention training for over 100 wastewater treatment plant operators at the Wisconsin Rural Water Association’s annual programs.

SBCAAP coordinated or participated in 27 **workshops and seminars** that reached nearly 3500 people from small Wisconsin businesses from 1999 to 2000. The majority of all workshops and seminars coordinated by SBCAAP include a waste reduction/pollution prevention component in addition to providing businesses with detailed environmental compliance information. When these topics are combined, businesses see that alternate production scenarios using pollution prevention techniques not only save them money, but may also exempt them from permits or emission limits.

### Awards & Recognition

The Federation of Environmental Technologies (FET) and the Department of Commerce sponsor the annual **Governor's Awards for Excellence in Hazardous Waste Reduction** awards presentation, in its 14th year. Award criteria include reduction of environmental toxicity, economic benefits derived from the waste-reduction process, transferability of the process for use by other industries and institutions, and the applicant's commitment to assist the waste-reduction activities of other entities. Last year, six companies received awards at the FET Environment 2000 Conference, held March 8 at Milwaukee's Hilton Hotel.

DNR partnered with the Wisconsin Asphalt Pavement Association (WAPA) in the new **Hot Mix Asphalt Environmental Leadership Award** program. This award recognizes asphalt plants that have exceeded the environmental standards set by the Environmental Protection Agency (EPA) and DNR for the asphalt industry. While environmental performance is the focus of the award, a hot mix asphalt plant also has to show exemplary performance in safety, plant appearance and community relations. The winners are dedicated supporters of their community. Twenty-three plants have won the award so far.

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# I. Success Stories and Partnerships

## A. Community Mercury Reduction

DNR is partnering with 11 Wisconsin communities to form the Wisconsin Community Mercury Reduction Program. Participating communities include Appleton, Ashland, Eau Claire, Green Bay, Kenosha, LaCrosse, Madison, Marinette, Milwaukee, Racine, and Superior. Through education, outreach and collection efforts these communities are actively promoting mercury-free alternatives to reduce the use of mercury-containing products and the recycling of mercury products. This helps to reduce mercury releases to the environment. Most of the community mercury reduction campaigns are led by the wastewater treatment facilities. The other two are lead by the city/county health department and a multi-county recycling association.

From Environmental Protection Agency (EPA) funds, DNR has awarded grants to most of these communities to fund mercury reduction activities in various sectors. These sector-specific activities include:

**Healthcare Facilities** -- The EPA partnered with the American Hospital Association (AHA) to create a Memorandum of Understanding for hospitals to become mercury-free by 2005. To help medical facilities reach this goal, the Wisconsin communities are holding workshops. Attendees of these workshops, including doctors, nurses, purchasers, maintenance staff, veterinarians, and nursing home staff, learn about environmental and health impacts of mercury, where mercury is in their facilities, and what alternatives exist.

**Dental Facilities --** DNR partnered with the Wisconsin Dental Association (WDA) and SHWEC to create a Best Management Practices (BMP) guide for mercury amalgam. This guide describes the impacts of mercury, gives recycling instructions for amalgam, and lists possible recycling vendors. The guide is being distributed to all dentists in the state to educate them about amalgam recycling.

**Schools** -- DNR partnered with SHWEC and an environmental consultant to create a mercury reduction curriculum and to hold teacher workshops. These workshops describe, to an audience of science teachers, the impacts of mercury and explain how mercury can be eliminated in schools and in the home. The curriculum, which includes mercury reduction activities for students, is also distributed and explained at the workshops. Some of the communities are also holding mercury bounty collection events in which mercury items are collected for free recycling at the local schools. The schools then receive monetary rewards for each device surrendered. Mercury issues in schools, along with the curriculum and workshop dates, are found at the new schools web site at: http://www.mercuryinschools.uwex.edu.

**Thermostats** - Three major thermostat manufacturers have created the Thermostat Recycling Corporation (TRC) in which thermostat wholesalers collect used mercury thermostats from their contractors and send them back to the TRC for recycling. This program is free to thermostat wholesalers and contractors and is being promoted in all of the communities.

**Dairy Manometers** -- The DNR, with assistance from the Department of Agriculture, Trade and Consumer Protection (DATCP), is conducting the Mercury Manometer Replacement Program to remove mercury manometers from dairy farms. Through EPA funding and other grants, dairy equipment dealers are provided with a voucher to replace mercury manometers with non-mercury, digital manometers. Over 400 manometers have been collected so far through this program.

**Automotive** -- DNR is working with the Dane County Recycling Coordinator and auto and scrap recycling associations to initiate a vehicle switch removal/replacement program across the state. This program will work with scrap yards and possibly vehicle dealers and service centers.

**Other mercury reduction activities include:**

**Wisconsin Mercury Recycling Program** -- Based on the success of the 1998 Mercury Round-up, in which over 5,000 pounds of mercury were collected, DNR awarded eight communities a Recycling Demonstration Grant. This was used to fund a unified Wisconsin Mercury Recycling Program in which any home owner or business can recycle mercury for free or low cost at participating Clean Sweeps and household hazardous waste facilities across the state. This program runs from September 1999 through December 2001 and has collected over 2,000 pounds of mercury to-date.

**Thermometer Exchanges** -- Many of the communities hold thermometer exchanges where people can exchange their mercury thermometer(s) for a digital one. These exchanges not only help reduce the potential for spills, but they also serve as a public awareness campaign about mercury in general. Exchanges often occur at Clean Sweep collections, schools, and community events. They also have been held at certain facilities, like hospitals, for staff members.

**Thermometer Sales Bans** -- Following the lead of cities like San Francisco, California and Duluth, Minnesota, Dane County decided to pass an ordinance banning the sale of mercury thermometers. The ban is now being adopted by many villages/towns within Dane County. Mercury thermometers have also been recently banned from Wal-Mart, K-Mart, Target, Walgreens, Albertson's, and many other retail chains. This ban will reduce the potential for mercury spills, reduce the amount going into landfills or incinerators, raise public awareness about mercury, and serve as the lead for future mercury product bans.

**General Public Outreach** -- The community and DNR representatives educate the public about the importance of mercury recycling and the use of mercury-free products at various sport/home shows and other community events.

**Coal-fired Electric Utilities** -- The DNR is in the process of writing rules to reduce mercury emissions from coal-fired electric utilities, from which more than half of mercury emissions arise. Wisconsin will be the first state to establish such rules.

**Special Events: Wisconsin Communities Get Rid of Mercury during Pollution Prevention Week, September 20th - 26th, 1999**

Wisconsinites turned in over 5,237 mercury-containing thermometers and 26,700 fluorescent light bulbs in collection efforts for Pollution Prevention Week. Wisconsin's focus this year was on reducing mercury through community-based education, collection, and recycling efforts. Here are some of the highlights of the communities' very successful efforts.

**Green Bay** -- The Green Bay fluorescent light bulb collection was a great success, bringing in over 26,700 light bulbs. Wess Damro, Brown County Port and Solid Waste, said they were only expecting 5,000 to 7,000, so they were surprised by the amount. He said they received mostly 4 foot and 8 foot fluorescent bulbs, but also some halogens and mercury vapor lamps. Damro said he was pleased to receive 431 bulbs from the general public, because homeowners are not required to recycle their bulbs.

**Lake Superior Basin** -- Ashland, Spooner and Superior, their hospitals, and the University of Wisconsin-Superior all hosted successful thermometer exchanges for Pollution Prevention Week. Ashland turned in 220, Superior (including the university) exchanged 86, and Spooner brought in 297, making a grand total of 603 mercury thermometers exchanged for non-mercury digital ones. Thanks to Diane Thompson, City of Superior, the hospital staff, and the community for organizing these exchanges.

**Madison** -- Madison's "Catch the Fever" Thermometer Exchange collected over 730 mercury thermometers from the general public at the Farmer's Market and at an open house at the Madison Metropolitan Sewerage District. The exchange enjoyed a very positive response from the community. We also collected other mercury containing items and liquid mercury. All of the mercury products went to Dane County Clean Sweep. We

provided brochures and curricula and answered many questions about mercury. People at the Farmer's Market enjoyed the "Walking Thermometer," who was Kathy Oppegard, and the "Mad Hatter" portrayed by Ralph Erickson.

Group Health Cooperative (GHC), a health maintenance organization (HMO), also hosted a thermometer exchange at four of their clinics and gave away over 4,000 digital thermometers. So many mercury thermometers came in that GHC ran out and gave people rain checks by Friday of Pollution Prevention Week. TV Channel 15 (NBC) did a nice story—noted that it was Pollution Prevention Week, interviewed Anne Vedra of GHC about their exchange, and mentioned the Farmer's Market exchange.

**Milwaukee** -- The International Joint Commission Biennial Forum in Milwaukee on September 24 through 28 highlighted mercury. The "Wisconsin Community Mercury Reduction Program" display showed people where they could find mercury in their homes, demonstrated alternative products, and displayed some of the effects of mercury on wildlife. EPA Administrator Carol Browner focused on mercury during her talk at the Friday session.

Workshop participants learned how to reduce mercury in the health-care industry during the "Mercury in Healthcare Workshop" at the Children's Hospital in Milwaukee on October first. The workshop was sponsored by the Milwaukee Metropolitan Sewerage District and SHWEC.

**Sturgeon Bay** -- The Wisconsin Natural Resources Board, at the September, 1999 board meeting, recognized seven heating and cooling businesses for committing to the Thermostat Recycling Pledge Program. This DNR program recognizes the contractors for their commitment to recycling mercury thermostats found in buildings that are being remodeled or demolished. The businesses will also educate their customers about the hazards of mercury.

**Publicity** -- Pollution Prevention Week enjoyed some free publicity with three TV stories, two radio interviews, one 30-minute radio interview, a radio spot, and a newspaper article—all focused on mercury and how to keep it out of the environment.

## B. Bavaria Partnership

In the fall of 1998, Annette Weissbach of DNR and Gail Sumi of the Wisconsin Alliance of Cities visited six German communities participating in the Bavarian Agenda 21 sustainability effort. Prior to the visit, Sumi had asked members of the Alliance if they had an interest in forming sustainable community partnerships with like-minded communities in Bavaria. Of the 39 members, eight were interested, so Weissbach and Sumi gathered information about them and brought materials along. With the assistance of the Bavarian Environmental Ministry, they met with representatives from Bamberg, Munich, Nuremberg, Augsburg, Unterschleisshem, and Wuerzburg. Each city had unique ways of bringing their communities to greater levels of sustainability and were eager to highlight their programs. Weissbach and Sumi returned with several boxes of materials. Several documents were translated and summaries of programs have been provided to dozens of communities throughout Wisconsin. Over 15 presentations on the Bavarian Agenda 21 programs have been given to various groups including municipalities, state agencies, universities, optimists and women’s clubs, etc.

There were high hopes of conducting a Bavarian tour for representatives of the Wisconsin communities interested in a partnership. However, a grant application submitted in January 2000 to the German Marshall fund to sponsor personnel exchanges between Bavaria and Wisconsin was denied.

## C. Sustainable Communities

### 1. Sustainable Green Bay

As stated in Sustainable Green Bay Bylaws, its purpose is to:

- Maintain and strengthen the livability of the Green Bay region;
- Adopt a set of principles, priority issues and specific strategies that will be widely accepted as a guide for developing the region's future economic, environmental and social health;
- Increase public knowledge about principles of sustainability; and
- Increase inclusive public dialog that is focused on sharing, learning, partnerships and collaboration.

Sustainability is a relatively new concept for Americans who are accustomed to an abundance of things, fairly cheap prices, and with the ***real costs*** externalized elsewhere. Americans are constantly bombarded with advertisements concerning, " today's lifestyle, bigger is better, and what's in it for me, etc." The thought of "we the community", saving for tomorrow, being less consumptive and more efficient, is often a hard sell. Mainstream Americans need to be educated about the ramifications of today's over-consumptive lifestyle and the pending impacts on future generations. Most believe that proper education and information are the tools needed to make a difference. The challenge is getting all the pieces to fit together.

The March 1999, conference received good media coverage of the topics continued through 1999. Between the months of March and November, the action teams (committees of people) met several times to identify assets and gaps and look for ways to address the gaps. They were directed to present their most pressing topics for a follow-up conference scheduled in November.

Shortly after the March conference, a web site (www.sustainablegreenbay.org/) and a list serve was started. The list serve has about 150 subscribers and is home for general interest and announcements on sustainability (sgbinfo@uwgb.edu).

A second conference was held in November, 1999, to hear progress reports from the action teams (small committees of people focused on one general topic). With hundreds of ideas and opportunities discussed by the teams over the last six months, it was necessary to focus on some general priorities.

#### November 1999 Conference Summary

The conference was held on Saturday, November 6 and was attended by about 65 people. The morning session consisted of action team reports and descriptions of suggested high priority projects. The afternoon showcased three speakers who presented brief overviews of tools available for explaining and working with communities and industries about sustainable concepts.

In summary, it appeared that many of the action teams identified similar needs. The identified projects validated the need for developing a sustainable community. Even though the action teams were operating independent of each other, several similar themes developed. After the teams reported their findings, the conference participants were asked to vote for projects to determine the most important focus for Sustainable Green Bay during the next year.

| **# Votes** | **Proposed Team Project** |
|---|---|
| 24 | Supporting neighborhoods |
| 14 | Mapping assets |
| 11 | Compilation of sustainable resources |

At the end of November 1999, the project team decided to become a 501(c)(3) not-for-profit organization. A Board of Directors and Officers were voted in and these nine team members began working on Articles of

Incorporation, budget, and bylaws. The bylaws were approved in early 2000. A "Plan of Action for 2000" was prepared and approved by the Board. In March, 1500 letters were distributed asking for volunteers to join committees. The action teams were dissolved and new committees were formed. New committees replaced the original action teams and were given goals and objectives for 2000 that incorporated the priority rankings identified during the November conference.

During Earth Day week in April 2000, the Kick-off 2000 meeting was held to introduce the new Plan of Action and bring the newly formed committees together. About 50 people attended and joined committees. No-one was willing or able to lead any of the committees despite repeated attempts and nudging from the board president. It's likely the major breakdown occurred over the summer when the action teams thought the board would take the lead in activities and vice-versa. Perhaps the action teams should have continued with their effort and not converted into a "committee" structure. The Board still meets regularly once a month and recently agreed to scrap the "Plan of Action for 2000" and begin anew.

**2. Quality of Life ($QL^{21}$) Conference**

A sustainable communities conference was held in July 2000, in Racine, and was attended by approximately 75 people. The Wisconsin Alliance of Cities, DNR and many other municipal organizations and business sponsors contributed to this *Quality of Life ($QL^{21}$)* Conference. Twelve ninety-minute workshops with the following topics were offered: Genuine Progress Indicators; Low Impact and Environmentally Sensitive Site Design; Community Decision Making: K-12 Education, System Dynamics, and Community Action; Competing in the Global Marketplace, Measuring Success in Your Neighborhood - Indicators/Benchmarks; Overcoming Barriers to Implementing Successful Green Building Projects; Eco-industrial Parks; Purchase of Development Rights & Other Examples of Local Government Cooperation; Market Trends in Housing; Managing Rapid Growth from a Financial, Organizational and Community Planning Perspective; and Tourism and Sustainable Rural Development. The conference agenda and various links to sponsors and presenters can be found at www.wiscities.org/ql.htm

On the last day of the conference, a facilitated session of small groups generated template resolutions of sustainable community development for land use and environmental stewardship, intergovernmental cooperation, community participation, and sustainable economic development. The resolutions can be downloaded from: www.wiscities.org/qlepilog.htm. Keynote speakers discussed state/local partnerships and using satellite data for land use planning. Tours of sustainable architecture and brownfields redevelopment were conducted. Efforts are currently underway to continue QL21 conferences for 2001 and beyond.

Without travel assistance from grants or other sponsorships, representatives of Wisconsin communities have little real opportunity to travel overseas to visit the potential Bavarian Partner communities. However, we will attempt to continue seeking funding opportunities in the future.

**3. Sustainability Think-Tank**

This statewide think tank was started in November 1999 with the initial thought of gauging people's thought on ways to increase public knowledge about the principles of sustainability. About twelve to fifteen members participate in the quarterly round table discussions and use this opportunity to share ideas with like-minded individuals. Current membership is over 30 and represents diverse interests in government, academia, non-profits, environmental consultants, and nondenominational organizations. Topics discussed range from genuine progress indicators, interfaith global climate change campaign, other states sustainability efforts, the Wisconsin Sustainable Futures Network, sustainable investment funds, deliberative democracy, and more.

## D. Umwelt Environmental Pact

On October 23, 2000, Bavaria reissued another five-year Environmental Pact Program as a continuing effort toward sustainable industrial/community development. The Bavarian state government, along with 900 companies and 50 organizations, has signed pledges for greater environmental protection. The pledge contains all the relevant environmental needs, including climate protection (greenhouse gas emissions), resource conservation, transportation, brownfields remediation, and EMS [Environmental Management System(s)]. Part of the package includes more pilot testing of environmental permitting, reduced fees for facilities with an EMS, and more connection/permanence with regional land use and Agenda 21 programs.

The major goal of Pact II is to have centrally located Bavaria become the European leader in a cooperative (state/industry) venture for sustainable development. This venture will produce high social productivity and strong self-responsibility for citizens and businesses, in an intact environment.

Other goals include:

- $CO_2$ reductions from 99.2 in 1998 to 80 million tons in 2010;
- Reduction of ozone harming chemicals ($NO_2$ reductions by 60%, VOCs by 69% by 2010);
- Start up of Kyoto protocol projects;
- Increased energy productiveness/efficiency by 33% by 2010;
- Seventy-three percent recovery/reuse/recycle of household waste by 2010;
- Decreased land consumption (stop urban sprawl);
- Product life cycle analysis;
- Reduced noise and pollution from vehicular traffic;
- Sustainable traffic infrastructure;
- Ecological process optimization in the service sector;
- Four hundred EMSs in various trades according to the criteria for "environmental awareness;"
- Fifty percent of all manufacturing companies to have EMS in place by 2005; and
- Ecological product design and use, that is, life cycle analysis, and cradle-to-cradle responsibility.

Many positive goals were achieved during the first five years of the Umwelt Pact. Highlights include:

- 580 facilities are EMAS registered (EMAS = ISO 14000 plus regulatory compliance), the most of any state in Europe!;
- 3500 facilities were subject to Eco-audits, precursor to being registered;
- 3800 facilities asked for information from their ***trade associations*** on environmental awareness;
- The state of Bavaria bought 15 million shares in the state/industry cooperative venture for hazardous waste treatment and disposal;
- The state of Bavaria made available 45 million for brownfields cleanup and redevelopment; and
- Bavaria is the first state to give EMAS registered facilities regulatory flexibility and reduced oversight and monitoring requirements.

A detailed search was made of Wisconsin companies with ties to Germany, or especially Bavaria. The intent was to determine if any Wisconsin company is affiliated with a Bavarian company participating in the Environmental Pact. It was assumed that if a company is participating in the environmental pact they may also be likely to participate in Wisconsin's Environmental Cooperation Pilot Program. As it turned out there were only one or two specifically with ties to Bavaria and they were not participants. Wisconsin's pollution prevention agencies look forward to learning from Bavaria's programs and goals.

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

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.

DNR and Fort McCoy are co-chairs of the Alliance, which has a charter that states the vision, mission and goals 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.

At each quarterly meeting, speakers, such as a DNR staff expert, address relevant topics that generally relate to waste management and/or pollution prevention. DNR plays an important role in the Alliance by providing staff with expertise in certain wastes to speak to the group about pollution prevention and answer questions about regulations.

The Alliance created a "Certificate of Appreciation" to recognize individuals whose performance enhances the goals of the Alliance. The first three recipients, recommended by their unit commanders and approved in May, were military personnel that found ways to reduce waste in their units. DNR created the WI/DOD web pages that have the charter, meeting minutes and links to each member's web site. The national military web site, known as DENIX, is also linked to our site.

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# II. Current Programs -- Reports by Business Sector

The Bureau of Cooperative Environmental Assistance's (CEA) role is to encourage projects and share information and resources with industry and colleagues, such as other DNR programs (air, waste and water), COMMERCE and SHWEC. Wisconsin is one of the only states using a coordinated approach that maximizes shared resources and expertise.

Reports from each business sector are intended 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 can adequately measure the environmental impact of these facilities. Whenever there are joint projects, DNR, SHWEC and COMMERCE use these opportunities to work together to share expertise and pool resources.

The business sectors' summaries may have up to 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 as a result 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 companies are not reporting to current databases. This can make it difficult to track the progress of a sector in response to a new regulation or voluntary program.

### A. Aquaculture Sector

With our availability of clean water, Wisconsin is poised for major expansion in the aquaculture industry. The consumer demand for fish has remained strong and the wild harvest of quality food fish has steadily declined.

Consumers prefer the freshness and quality of locally grown fish that are free from contaminants. Our natural resources are well suited for aquaculture. The challenge we face is to use these resources wisely without causing environmental degradation. Pollution prevention for this sector focuses on developing best management practices (BMPs) for using the water supply and minimizing the discharge of fish waste.

There are three basic types of systems and the BMPs must be adopted to fit each type as a pollution prevention plan. Some aquaculture facilities will have variations of each of these basic types.

**1. Flow Through Systems** -- When there is an abundant and easy-to-harness supply of clean water, a concrete raceway or pond is constructed so that the constant flow of water creates a favorable place to raise fish. For cold water species, such as trout, the source of water will usually be from a spring or artesian well. In these systems the solid waste from the fish will settle to the bottom. The solids are periodically removed - either by suction or, after a season or more–the pond is drained to scrape out the solids. The solids can be recycled by spreading on land or by dewatering and being used as fertilizer. The operators of flow-through systems should adopt BMPs to minimize the impact of chemicals used to treat the fish, fish waste in the discharge water, and changes to the water temperature.

**2. Pond Systems** -- A typical use of pond systems is in growing warm water species from fry to fingerlings. The ponds are initially filled with water and fertilized to create a natural growth of aquatic organisms to provide a natural food source for the fry. With low fish densities, they can grow for a whole season with natural aeration and some supplemental feeding. Higher densities of fish may require mechanical aeration, supplemental feeding, and a supplemental flow through water source. One method of operation is to harvest the fingerlings in the fall for transplanting into waters of the state or to another system to grow to food fish size. Ponds can also be used to grow fish to adult size for food fish of fee fishing. (Fee fishing is when someone pays to fish from a pond stocked with fish for this purpose. The fee is usually based on the weight of the fish.) Another method of management is to completely drain the pond to harvest the fish. During a complete drain down, the BMP is to direct the wastewater to a separate settling pond to remove stirred-up fish wastes and other settled solids prior to discharge to the receiving stream. Another harvest method is to seine the fish out with no drawdown or a partial drawdown. In some systems the fish waste is left in the ponds to provide nutrients and culture for next season’s fish.

**3. Recirculating Systems** -- The advantage of recirculating systems is that a high density of fish can be kept at optimum temperatures by removing the fish waste and reusing the water. The rate of growth is usually faster and the system can be covered to protect the fish from predators. However, the technology for effective and reliable waster treatment systems to clean up the water for recycling is still being developed. An effective system will convert ammonia and other fish waste to a sludge that can easily be disposed of as a fertilizer. Although not common now, recirculating systems will likely increase in the future as technology improves.

The BMPs are also dependent on the market for the product. There are four ways in which aquaculture products are marketed:

**Food Fish** -- The fish are raised to adult size and sold live or as ready-to-cook fillets. Trout and perch are the common species in Wisconsin.

**Fee Fishing** -- Adult fish are raised in private ponds. Customers have the thrill of catching and keeping a fish for a certain fee, which is generally based on the size of the fish.

**Bait Fish** -- Minnows are raised and sold in bait shops to sport fishermen for bait.

**Stocking** -- Fingerlings or larger fish are released to grow into catchable size sportfish. Currently most stocking into public waters is done from DNR hatcheries, but the private sector is interested.

The regulation of aquaculture facilities is shared between DNR and DATCP. The two agencies have a memorandum of understanding outlining the role of each agency. BMPs are necessary to comply with the regulations and in some cases a permit can be avoided.

These environmental issues may be regulated for each aquaculture facility:

**1. Water Discharge** -- Discharges into surface water or groundwater are regulated by a Wisconsin Pollutant Discharge Elimination System (WPDES) permit. A WPDES permit has concentration limitations for pollutants from fish waste, such as suspended solids, that are calculated to protect the water quality in the receiving stream. Generally facilities producing less than 20,000 pounds per year of cold water species or 100,000 pounds of warm water species are exempt from this permit. However, there are other factors, such as being identified as a significant source of pollution, or feeding more than 5000 pounds of food a month, that will require a facility to apply for a permit. This is a case where a facility that practices best management will avoid being identified as a significant source of pollution and thus avoid a permit.

**2. Water Supply** -- Some existing facilitiesare fortunate to utilize the abundant water supply from a spring or flowing artesian well. A facility may use groundwater and if more than 70 gallons per minute will be pumped out, a high capacity well permit is required prior to drilling the well. A surface water source can be used, however some restrictions may apply. A common legal restriction is that any withdrawal cannot interfere with the public interest in the navigable waters, the rights of the public or the rights of the downstream users. For new facilities a local DNR water management specialist will determine how much water can safely be withdrawn from any particular stream.

**3. Construction Permits** -- To protect the surface water resources, a new aquaculture pond constructed close to a navigable stream may require a DNR permit. Other related activities, such as a water supply intake installed next to a stream, may also require a permit. These permits are commonly called water regulation and zoning permits or Chapter 30 and 31 (refers to the authorizing statute number) permits. Common situations that require a permit include: construction of a pond or water channel within 500 feet of a navigable water, placing an intake water structure in the bed of a stream, placement of a pipeline in the bed of a stream and construction of a dam or water diversion. Aquaculture facilities should be aware of all the wetland areas on their property and avoid any construction or other activities that will adversely impact the functional value of the wetland. These permits require that new or expanded aquaculture facilities do not harm the water resource.

**4. Raising Fish in Natural Water Bodies** -- In 1997 the Wisconsin legislature passed Act 27, which regulates the use of natural bodies of water for aquaculture. All facilities constructed after January 1, 1998 can use only private shallow ponds, on land they own or control, commonly called "freeze-out ponds" for raising fish. Freeze-out ponds are a natural, self-contained body of water in which freezing or anoxic conditions prevent the body of water from naturally sustaining a fish population at least twice every 5 years. This statute was implemented as administrative code NR 16 and new facilities must apply for a "NR 16 permit" using a form entitled "Fish Farm Application For Use of Natural Body of Water." (form 3600-227) The statutes allows for aquaculture facilities that were using a natural body of water prior to January 1, 1998, to be given a one-time exemption or, as it’s commonly called, to be "grandfathered in." This rule protects the water resource by limiting new aquaculture projects using natural water bodies to shallow ponds that cannot support a native fish community.

**5. Importation of Non-Native Species** -- There is a concern that bringing in non-native species for aquaculture could result in their intentional or accidental release into waters of the state. Some species may compete for food and habitat with native species and have a detrimental effect on native populations. Permits to import non-native species are issued by DATCP, however, for certain species, a DNR approved environmental assessment is required prior to permit issuance. This rule protects the native species by prohibiting the importation of non-native species that, if accidentally released, could cause them harm.

**6. Wild Bait Harvesting** -- A bait dealer's license is required to take or remove bait fish from the wild if offered for sale in this state. Anglers with a fishing license may harvest up to 600 minnows for personal sport fishing. The regulations for wild bait harvesting are designed to prevent over-harvesting of bait fish where they are a food source for a natural fish population.

## B. Asphalt Sector

Asphalt pavement production is the process of taking sand and aggregate and mixing it with asphalt or bitumen (the viscous material left from distilling crude oil) to form hot bituminous concrete mixture that can be laid down as a smooth road surface.

The process starts by taking sand, gravel or rocks and sorting them into piles according to their size. Usually this involves a crushing operation to gradually reduce the solid rock to a useable size for the mix formula. Sometimes the mix material comes from solid rock deposits, such as limestone, that are loosened by blasting and then crushed in a series of crushing and grading equipment. Some material is found in glacial deposits made up of sand mixed with all kinds of rocks carried along by the glacier. Some operations include washing of sand with water to remove the very small soil particles. Although asphalt plants are often located in quarries, the quarry operation is not actually part of the asphalt production sector and the quarries may be under different owners and management.

The mixing begins by pulling a certain percent of material from each of several bins each with different size sand and aggregate particles. The bins are filled at the top by an end loader and a computer-controlled belt unloading system keeps the material flowing evenly from the bottom of the bin. In the first section the material is thoroughly dried. The fuel for this is frequently waste automobile crankcase oil with fuel oil as a backup. For permanent plants, natural gas may be economically available and results in reduced air emissions.

After drying and prior to adding asphalt, the recycled asphalt pavement (RAP) is added from a separate bin and conveyer in whatever proportion specified in the mix formula. The material will now be at least 300 degrees Fahrenheit and the asphalt is added at that temperature. The asphalt is trucked into the site at the same temperature in insulated tankers and stored in heated tanks. After a short mixing period to coat all the particles with asphalt, the bituminous concrete mixture is conveyed to the load out storage tank.

Then the hauling trucks of the customers, some for the mixing company and some for independent paving companies and government units, drive onto a scale under the load out tank. The correct tonnage is dropped into the truck and as the truck pulls forward to cover the load, a computer-printed invoice is handed to the driver.

**Environmental Issues**

DNR's business sector specialist works with the Wisconsin Asphalt Pavement Association (WAPA), which is active in promoting awareness about environmental issues. The main environmental issues and pollution prevention opportunities are use of recycled material, air emissions and wastewater and stormwater management.

**1. Use of Recycled Material** -- The asphalt sector has a long history of burning waste motor vehicle crankcase oil for the beneficial recovery of heat. Burning used oil does increase air emissions in comparison to natural gas or virgin fuel oil, but with proper air emission controls permit limitations can be achieved. The mixing of recycled asphalt pavement into new bituminous concrete is also standard practice in this industry. Whenever an asphalt road is torn up, all the old asphalt is either hauled to an asphalt plant or recycled on-site as roadbed for the new pavement. Chunks of asphalt hauled off the road site are ground into the desired particle size and stockpiled until needed in a mix formula. The sector has just begun to evaluate the beneficial use of waste foundry sand to be mixed in small percentages into road base material under the pavement.

**2. Air Emissions** -- The mixing and drying of asphalt material produces dust and all plants are required to have emission controls to remove particulate matter. In 1990 sixty percent of Wisconsin asphalt plants had wet scrubbers but today there are only about a dozen left with this control technology. The newest equipment includes cyclones and baghouses to remove particulate and some other pollutants. The particulate collected is recycled directly back to the asphalt-mixing drum but it can be stored when necessary. Other pollutants from combustion are controlled by careful adjustment of burners and monitoring impurities in the fuel. Each of the 114 asphalt facilities with air permits reports the discharge of six pollutants. These pollutants are: total particulate, particulate under 10 microns, sulfur dioxide, nitrogen oxides, reactive organic gas (volatile organic chemicals), and carbon monoxide. Some facilities may also be required to report formaldehyde and hydrogen chloride emissions. When comparing the various years' results as a pollution prevention performance measure, we must be mindful of the total quantity of asphalt produced that year along with the amount of used oil burned and recycled asphalt in the mix.

**3. Wastewater and Stormwater** -- The washing of sand takes a large volume of water. However, with a properly designed settling basin, all of this water can be recycled. The fine particles that are washed out of the sand settle to the bottom and can eventually be recovered for reuse. Each facility has a stormwater pollution prevention plan. This plan assures that all stormwater that might pick up pollutants from the site is directed to appropriate treatment. Most times this treatment is a settling pond, so that only clean water is discharged off-site. During the operating season most stormwater is reused as dust control on plant roads and material handling conveyers. Those remaining plants with wet scrubbers are required by their general WPDES permit to hold all scrubber water on-site for reuse during the construction season and haul the water to a wastewater treatment plant at season's end. Stormwater at each site is also regulated by a general WPDES permit.

Please see the Awards & Recognition section starting on page 49 for information on the new Hot Mix Asphalt Environmental Leadership Award.

## C. Auto Services Sector

### Performance Measures

#### Interagency Cooperation

During 2000, major initiatives were undertaken with trade associations, SHWEC, SBCAAP, and others to recognize accomplishments of those working in auto services and to provide easy access to environmental and pollution prevention information. Efforts included: developing an Auto Sector web site, celebrating Pollution Prevention Week 2000, focusing a major issue of the DNR's Newsletter "Waste*Less*News" on auto sector issues, and developing pollution prevention curriculum for training programs and vocational schools.

The "What You Auto Know" web site helps businesses reduce liability and protect the environment. DNR designed this site to make it easier for auto service businesses to find information on environmental requirements and money-saving pollution prevention options. This is a cooperative effort between DNR, SBCAAP, SHWEC and others.

The site contains information on:

- Programs and resources available on-line--state assistance programs, local DNR contacts, publications, case studies, newsletters;
- Wisconsin environmental programs and requirements--waste management, air emissions, spills and cleanup, stormwater and wastewater, information on the new EPA requirements for shops on septic tanks; and
- Waste/Pollutant/Chemical Specific information--such as antifreeze, solvents, used oil, and air conditioning refrigerant.

Pollution Prevention Week, September 18-24, 2001, was a time when communities, businesses, trade associations, environmental groups and citizens were able to join forces for a common cause. We celebrated what we have accomplished to protect the environment and shared actions that we can do to prevent pollution, reduce wastes, costs and liabilities and increase efficiency.

Cars and trucks were the focus of this year's Pollution Prevention Week in Wisconsin, and there were many ways that individuals, government and businesses could participate. The National Pollution Prevention Roundtable (NPPR), DNR and the Wisconsin Auto and Truck Dealers Association (WATDA) worked together to encourage widespread participation in National Pollution Prevention Week. Some members of WATDA, which has approximately 1,000 members, including service centers, distributed the *Auto Log* to their customers. (The *Auto Log* is a DNR publication that helps people keep track of work done on their car and their gas mileage.) Students from the Pulaski high-school automotive technician's class conducted a free tire-pressure check for the public. Pollution Prevention Week originated in California in 1992 and gained widespread popularity in 1995 when it became a national effort. NPPR, based in Washington, DC, is the largest membership association devoted solely to pollution prevention.

In association with Pollution Prevention Week, the September 2000 *Waste*Less* News* issue focused on autos and trucks and covered a wide array of topics. The newsletter was distributed to over 8000 businesses, trade associations, local governments and others with an interest in environmental compliance and waste minimization.

**Pollution Prevention & Vocational Competency:**
**Partnerships with Business & Automotive Sectors**

SHWEC staff completed this Pollution Prevention Incentives for States (PPIS) grant project in partnership with the Wisconsin Automotive Collision Technicians Association, Ltd. (WACTAL), SBCAAP, DNR, and North Central Technical College (NTC). This joint project between SHWEC and NTC increased the capacity of the vocational technical education system and others to train future workers in the latest methods of pollution prevention. A result was to develop three or more "learning objectives" following the "writing across the curriculum" integration model.

Curriculum development was completed by NTC, in cooperation with Waukesha Bearing in Antigo, and with technical assistance from SHWEC. The completed curriculum has been integrated into the course of study at the on-site Learning Center at Waukesha Bearing. Several other manufacturers in the Antigo area are contracting to use Waukesha Bearing's Learning Center and will be using the environmental curriculum in training their employees. NTC is in the process of distributing the curriculum to similar learning centers at other companies throughout their district. The Technical College System received the completed curriculum in order to develop similar programs at Workplace Learning Centers throughout the system.

The project partnership also provided pollution prevention information through mailing of numerous materials and at an information booth at the annual WACTAL Conference and Trade Show in Madison. WACTAL reported there were over 700 participants representing 260 businesses at the conference. There were also 90 exhibitors, making it the largest conference and trade show in the organization's history.

## D. Chemical Manufacturers Sector

The chemical manufacturing and allied products sector includes, but is not limited to chemical blenders, manufacturers, packagers, soap and detergent manufacturers, and pharmaceutical 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 pounds (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

DNR's chemical sector specialist continues to serve as a partner to SHWEC in continuing chemical sector outreach activities. Ongoing listening sessions with representatives from the chemical manufacturing industry center focus on the challenges small businesses face in complying with environmental regulations, and in gaining access to new federal and state laws.

In cooperation with SHWEC and the University of New Jersey, the specialist participated in a beta test of a promising new system called the PBT Profiler (Persistent Bioaccumulative Toxics) that could have wide applications in the chemical manufacturing sector. The Profiler is a simple, user-friendly, web-based tool that predicts the persistence, bioconcentration potential, and fish chronic toxicity of many chemical substances. The PBT Profiler also compares persistence, bioconcentration, and toxicity results to EPA regulatory criteria for PBT-related action under the Toxics Release Inventory (TRI) and the New Chemical provisions of the Toxic Substances Control Act, i.e., the Premanufacture Notice (PMN) requirements. DNR has also contributed to the ChemAlliance web site, managed in Wisconsin by SHWEC.

Initial steps are being taken to partner with DNR’s Wood Products Sector Specialist and DATCP Enforcement and Outreach Specialists regarding the development of an outreach initiative in the wood chemical treatment sector. Recent meetings have identified a need for conducting targeted outreach in this area.

#### Data

**Table A. 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 Envt'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 |
| 1998 | 90 | 113,255 | 1,006,849 | 1275 | 0 | 1,121,379 | 408,832 | 19,661,479 | 21,191,690 |
| 1999* | 87 | 92,841 | 707,277 | 645 | 0 | 800,771 | 414,755 | 15,089,430 | 16,304,956 |

*Please note that these data are preliminary.

As can be seen by the above TRI data, TRI releases in the 2800 series SIC code have been declining since 1993. This trend is expected to continue.

#### *Awareness, Action, and Results*

The specialist continues to serve the needs of businesses in the chemical manufacturing industry by working with a number of companies on an individual basis to facilitate their regulatory needs. One large company of note, Eka-Chemicals, a subsidiary of Akzo-Nobel, Inc., has been successfully led through the DNR's regulatory requirements through the efforts of the sector specialist. They are currently pursuing the construction of a chemical manufacturing facility in Sheboygan County.

The specialist has also acted as a steering committee member for the Annual Environmental Compliance Seminar sponsored by Keep Greater Milwaukee Beautiful, which reaches approximately 350 businesses each year. This seminar provides a forum for businesses to improve their knowledge base about environmental regulations and trends in environmental protection/land stewardship, and allows them to interact and support each other in their efforts to improve their environmental performance.

## E. Dry Cleaning Sector

Wisconsin has approximately 300 dry-cleaning facilities, many of which are small, family-owned businesses. Air, hazardous waste, and contaminated land pose the main environmental concerns. One trade association, the Wisconsin Fabricare Institute (WFI), represents most of the dry cleaners in the state.

### Performance Measures

#### Interagency Cooperation

The Wisconsin Dry Cleaners' Partnership is a voluntary agreement to work towards improving environmental performance in the dry-cleaning industry. The partnership started in 1996 and includes the DNR, SBCAAP, Citizens for a Better Environment (CBE), WFI and SHWEC. One major accomplishment of the partnership is the implementation of a higher percentage of wet cleaning, contributing to a significant decrease in the use of perchloroethylene in Wisconsin.

The partnership's goals include:

- 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.

SHWEC completed the "Wisconsin Professional Wet Cleaning Certification" program in 2000. This wet cleaning curriculum is the third and final component of the Wisconsin dry cleaner certification program that has been adopted by WFI and dry cleaning industry members throughout Wisconsin.

The certification programs are provided independently by SHWEC and are an integral part of the Wisconsin dry cleaner Five–Star Program, which recognizes professional cleaners for their voluntary efforts to improve the environment of Wisconsin. The number of certified dry cleaners trained through these programs continues to grow.

#### 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 dry cleaners. Program requirements also encourage public outreach and increased dry cleaner knowledge and experience in preventing pollution. Even at the One Star level, businesses are recognized for doing more than regulations require. Five Star dry cleaners are national environmental leaders in their industry.

Twenty-one dry cleaners are involved in the Five Star Program. The Five Star criteria were upgraded in 1998 and became effective in March of 1999. Since then, 18 dry cleaners have renewed their star status.

The Wisconsin Certified Environmental Dry Cleaners (WI-CED) is another successful education effort. The certification programs are provided independently by SHWEC, and WI-CED has 52 dry cleaners that have completed the curriculum. Of these dry cleaners, 27 have been recertified and 25 are on their original certification.

The 1997-1999 state budget bill established a new Dry Cleaner Environmental Response Program (DERP). DERP is funded by dry cleaning facility license fees and a solvent fee for perchloroethylene and petroleum -- the primary dry cleaning solvents. The purpose of this program is to help dry cleaners pay the cost of investigating and cleaning up contamination from the release of these solvents. Many of these releases at dry cleaning facilities are historical releases, as today's technology and safer handling practices have resulted in fewer releases to the environment. Cleanups conducted under this program must comply with the DNR's NR700 cleanup rule series.

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. Expected statutory changes include the requirement that all facilities have implemented the pollution prevention requirements currently required for new facilities (except for the diking requirement), – after a one-year lead time for facilities to come into compliance. These pollution prevention requirements include: that all wastes are managed as hazardous wastes per state and federal regulations, that there are no discharges to sanitary sewers, septic systems or waters of the state, and that perchloroethylene is delivered through a closed-loop system.

## F. 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 collaborated with the Energy Center of Wisconsin in the development of a Consortium for Industrial Efficiency. The Consortium is a network of people working together to optimize the energy efficiency of Wisconsin industries. Other Consortium partners include the Department of Administration, SBCAAP, SHWEC, electric utilities, Wisconsin Manufacturing Extension Partnership (WMEP), and the University of Wisconsin - Milwaukee. Consortium members offer technical assistance on energy and resource efficiency and pollution prevention. Industries can contact a single Consortium partner of

their choosing and rely on that person to coordinate the services offered by all partners. The Consortium's "Resource Guide for Wisconsin Industries" was completed in September 2000 and can be found on the web at www.ecw.org/cieguide/.

**Data**

The following table shows that Wisconsin's major utilities are succeeding in curtailing the air emissions that lead to acid rain. Although electricity production in Wisconsin increased nearly 17% from 1990 to 1998, acid rain precursor emissions have actually decreased. Thus far Wisconsin's major utilities have exceeded all regulatory goals set for the industry by state and federal regulators.

| Table B. Acid Rain Precursor Emissions from Major Utilities | | |
|---|---|---|
| **Year** | **Sulfur Dioxide (tons)** | **Nitrogen Oxides (tons)** |
| 1990 | 272,592 | 108,631 |
| 1991 | 283,285 | 107,974 |
| 1992 | 256,943 | 97,816 |
| 1993 | 173,590 | 107,489 |
| 1994 | 191,717 | 111,974 |
| 1995 | 185,890 | 107,457 |
| 1996 | 188,118 | 115,718 |
| 1997 | 212,665 | 116,918 |
| 1998 | 211,522 | 116,538 |
| % change from 1990 levels | -22% | +7% |

The next table demonstrates that electric utilities have made outstanding progress in dealing with their single largest solid waste stream: ash. Utilities generate enormous amounts of ash, but they've figured out ways to recycle the vast majority of it into a variety of useful, safe products. This represents one of Wisconsin's greatest success stories in the area of business recycling.

| Table C. Beneficial Reuse of Utility Fly Ash and Bottom Ash | | | |
|---|---|---|---|
| **Year** | **Utility ash available (cubic yards)** | **Amount recycled (cubic yards)** | **% Recycled** |
| 1998 | 1,208,215 | 838,082 | 69.4% |
| 1999 | 1,128,162 | 903,534 | 80.1% |

Another performance measure that is relevant to this pollution prevention report comes from the TRI, but electric utilities were not required to file TRI reports until 1998, and 1999 data is still preliminary, so it is too early to evaluate any data trends. It is known that electric utilities reported higher releases in 1998 than any other industry sector in Wisconsin and accounted for 9 of Wisconsin's highest 25 facilities in reported releases. Nationwide, electric utilities in 1998 ranked second highest (behind metal mining) among all sectors and generated 15% of total releases.

| Table D. Toxics Release Inventory Data for Wisconsin Electric Utilities | | | |
|---|---|---|---|
| **Year** | **# of Individual Power Plants Reporting** | **Cumulative Releases by Sector (pounds)** | **% of Total Wisconsin Releases** |
| 1998 | 18 | 17.8 million | 29% |
| 1999 | 20 | 12.5 million | 26% |

**Awareness, Action, and Results**

Environmental awareness among electric utilities is very high and still growing. Most utilities employ teams of professionals dedicated exclusively to environmental issues. Since the last Wisconsin Pollution Prevention Report, this sector has increasingly taken advantage of the services offered by DNR's sector specialist and is now thoroughly aware of CEA's key communication points. Specifically:

- Electric utilities are aware they have a sector specialist and nearly all have called upon their specialist at least once in the past year. Environmental management systems and the environmental cooperation pilot program were the most common subjects of questions, but a wide spectrum of issues was raised.
- Most Wisconsin electric utilities have implemented environmental management systems, at least informally. Some are adopting formal systems compatible with ISO 14001, which is an international standard for these management systems.
- Two of Wisconsin's major utilities have applied for the environmental cooperation pilot program. One of these has also submitted a joint application with DNR for U.S. EPA's Project XL program.
- Business recycling is a high priority among electric utilities, as evidenced by the outstanding progress being made with the beneficial reuse of coal ash.

## G. Food Processing Sector

The food processing sector in Wisconsin is dominated by the dairy industry with approximately 200 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 byproducts.

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 include—encouraging and promoting the use of byproducts by feeding to farm animals, land application using the nutrients as fertilizer, or composting.

## Performance Measures

#### Data

| Table E. 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 Envt'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 |
| 1998 | 126 | 131,966 | 113,956 | 763,509 | 262,169 | 1,271,600 | 2,848,017 | 943,814 | 5,063,431 |
| 1999* | 103 | 92,513 | 113,403 | 345,950 | 220,656 | 772,522 | 2,759,866 | 792,915 | 4,325,303 |

#### Awareness, Action, and Results

Contacts with Trade Associations -- Several trade associations are active in the food-processing sector. These are the Midwest Food Processors Association, the Wisconsin Association of Meat Processors and the Wisconsin Cheese Makers Association. The sector specialist attends these trade association's annual conventions and other relevant events to promote awareness of CEA’s programs. When appropriate, an industry-specific exhibit was used to find out about waste reduction opportunities and to promote pollution prevention. An article introducing the sector specialist was written for and published in "News and Views" the newsletter of the Meat Processor Association. The goal is to have association members exchange 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, chloride 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.

**Guidance for the Food Sector** -- The sector specialist wrote a section for a Wastecap Wisconsin publication promoting waste management in the food industry. The section described the ranking for the highest and best use of food processing byproducts. The ranking, with the best option first, is: raw material for human food, raw material for animal feed, landspreading for its nutrient value, composting and the least desirable, landfilling.

The sector specialist also wrote a guidance paper entitled "Wisconsin's Environmental Regulations For the Food Processing Sector," which includes a section on wastewater, stormwater, air emissions and solid waste. For businesses serving the food processing industry by providing a hauling service for wastewater and byproducts, a guidance paper written last year entitled "Guidance For Liquid Waste Carriers Serving Commercial and Industrial Customers" is available. Each paper includes information about pollution prevention opportunities.

## H. Metal Casting Sector

The metal casting sector makes metal parts, primarily iron, steel and aluminum, 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 castings 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, stormwater runoff and wastewater. Air and Waste regulations are the most complex and have the greatest impact on the sector.

### Performance Measures

#### Data

**Table F. 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 |
| 1998 | 88 | 426,763 | 813,611 | 362,585 | 12,519 | 1,615,478 | 68,128 | 19,716,793 | 21,400,399 |
| 1999* | 82 | 214,624 | 642,797 | 289,633 | 8,596 | 1,155,650 | 146,200 | 19,478,338 | 20,780,188 |

#### 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 this program).

Hazardous Air Pollutant Emission Reduction Compliance Strategy -- The partnership work with the trade association, Wisconsin Cast Metals Association (WCMA), continues with the implementation of a strategy for compliance with chapter NR 445 of Wisconsin's Administrative Code (WI Adm. Code), Control of Hazardous Air Pollutants. The reduction strategy measures the amount of combustible material available, which creates volatile organic compound and hazardous emissions. It will allow industry the choice of 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 Byproducts** -- 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 byproducts 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) meets and reports annually to the Natural Resources Board on the amount of materials diverted from landfills into beneficial reuse.

Future efforts will include overcoming barriers to find uses for greater volumes of materials. Through a grant from the Recycling Markets Development Board, WCMA studies 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. An article published in Wisconsin Natural Resources Magazine, October 2000 issue, showcased the beneficial uses statewide of industrial byproducts, including foundry materials. Demonstration projects with specific end-users continue to help establish greater markets and innovative uses for these materials.

## I. Metal Finishing

Metal finishing, or in a broader sense - surface finishing, generally involves altering an object's surface to enhance its appearance or functional properties. Metal finishing is a form of resource conservation because finishing a metal object protects it from corrosion, abrasion, impact, and wear. The main processes involve polishing, buffing, electroplating, electropolishing, etching, and coating. Finishing is used 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

DNR's Metal Finishing sector specialist and SHWEC completed another year of significant partnership activities with this industry through the Pollution Prevention Incentives for States grant program. This included pollution prevention opportunity assessments for metal finishing companies, several meetings to discuss

progress on the Strategic Goals Program (SGP), and culminated with a two-day series of workshops designed for finishers provided by SHWEC in November, 2000.

Additional activity this year included the development of an energy conservation document specifically for the metal finishing industry. DNR's Metal Finishing sector specialist obtained funding and support to develop this document. The document and specific training on energy conservation was presented at the second workshop provided by SHWEC.

In December 1998, DNR submitted a suggestion to the Wisconsin Energy Center to develop a program to help metal finishers achieve a 25% reduction in facility energy use (one of the goals in the SGP). In May 1999, the Center announced it would fund the project. A work group was formed with members of the metal finishing community, utilities, SHWEC, DNR and a metal finishing consultant from Illinois. Several site visits and draft reviews occurred over the next year and a final document was published in November 2000.

DNR staff from the Bureau of Cooperative Environmental Assistance and the Waste Management Bureau collaborated to create a guidance document titled *Avoiding Common Hazardous Waste Violations*. The idea for such a publication was spawned during a meeting with metal finishers and DNR staff in Milwaukee. The publication describes the ten most common violations with a narrative explanation of steps that can be taken to avoid the violations.

**Data**

**Table G. 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 Envt'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 |
| 1998 | 47 | 73,437 | 276,123 | 306 | 23,200 | 373,066 | 859,458 | 1,024,930 | 2,257,454 |
| 1999* | 51 | 66,790 | 285,430 | 506 | 24,000 | 376,726 | 1,049,995 | 1,541,434 | 2,999,835 |

**Awareness, Action, and Results**

A newsletter titled *Metal Finishing News* was mailed in February, 1999 and a new issue in March, 2000 to nearly 500 facilities in metal finishing and/or associated operations. This yearly newsletter provides an update to the metal finishing community on air, waste and wastewater regulations and other areas of interest. The March 2001 newsletter is currently under development and will focus on molybdenum from phosphating operations, non-chlorinated VOCs, RACT, F006 storage extension, MP&M update IX for groundwater cleanup and web sites of interest.

As a result of the cooperative venture between DNR and the Wisconsin Energy Center (described in the previous section above), two guidance documents specifically for metal finishers were created. These documents--*Guide to Reducing Energy Costs* and the *Technical Supplement - Companion to the Metal Finishers Guide to Reducing Energy Costs*--were mailed in early December 2000, to 500 metal finishing and associated facilities. The guide is a practical, easy-to-follow booklet with step-by-step instructions on how to improve efficiency and reduce energy costs. The supplement provides technical background information with tables, graphs, and calculations.

**Common Sense Initiative--the Metal Finishing Strategic Goals Program**

While 1998 and 1999 showed much activity in announcing the Wisconsin Strategic Goals Program (SGP), the year 2000 was quieter. A survey in January of 2000, showed that 7 of the original 18 participants considered themselves **active** in the program. Active means that the participant has submitted the worksheets for the national database and has conducted in-house comparisons of year-to-year pollution reduction or conservation of resources activities. Survey results did not indicate any specific needs request for changes or flexibility in DNR rules and regulations for metal finishers. In April of 2000, as part of the Pollution Prevention Incentives for States (**PPIS)** 1999 grant, the SGP participants attended a meeting with other metal finishers to discuss the types of programs and educational opportunities they need to help them meet their goals. This effort resulted in the agenda for the November 2000 workshops.

This PPIS grant, in the amount of $56,675, was received by the DNR and subsequently contracted to the SHWEC, UW-Green Bay office. The objective of the grant was to provide environmental education and assistance to the metal finishing industry to help them move toward the goals and objectives of the SGP. Both SHWEC and the DNR metal finishing sector specialist held additional meetings to help move the industry further toward SGP objectives.

As a result of these meetings to find out what industry needed, SHWEC completed 18 on-site pollution prevention assessments, and a series of two all-day workshops that were attended by 38 metal finishing companies. The workshops incorporated pollution prevention, environmental regulation, energy conservation and environmental management systems training. SHWEC also completed *Compliance Basics: A Guide to Environmental Regulation for the Wisconsin Metal Finishing Industry,* which is a compliance assistance guide written specifically for the industry.

At the April meeting, SGP participants discussed the pros and cons of participating in the program. They expressed concern over the loss of a major recycler of F006 metal-hydroxide sludges. DNR's sector specialist spoke and also wrote a letter to that particular company. The company's response, however, indicated an economic necessity to accept only large lots. Some of the benefits proposed by the program indicate reduced monitoring and reporting, but these two items are rather minor for most metal finishers. Furthermore, participation by the local municipal sewerage treatment plant is key to a successful integration of the program, but the Milwaukee Wastewater Treatment Plant decided against participating. In addition, an enforcement action against one of the participating metal finishers probably stifled the momentum in the Milwaukee area. Thus, the impetus for participation in the greater Milwaukee area dropped considerably in late 1999.

A review of the National Strategic Goals program web site (www.strategicgoals.org) in November 2000, showed that a total of 20 Wisconsin companies are listed, with 16 having submitted baseline reports. In the years of 1997, 1998, and 1999, nine, ten, and ten companies respectively, have submitted their yearly data. These data submission rates are comparable to the participation rate of most states, with from two to forty companies submitting data in each of the 22 states. Nationwide, there are 474 companies that have signed on the program. For 1999, 247 companies submitted data.

Table G provides a progress summary of Wisconsin and nationwide participants and the relative percentages of goal achieved.

| Table H. Summary of Progress Report Performance using 1999 Data. | | | | | | |
|---|---|---|---|---|---|---|
| **Goal** | **Number Passed** | **Number Making Progress** | **Number W/O Progress** | **Insufficient Data** | **% Goal Achieved in WI** | **% Goal Achieved Nationwide** |
| Goal 1. Water Usage | 0 | 7 | 4 | 0 | 29.13 | 49.6 |
| Goal 2. Energy Usage | 5 | 1 | 3 | 2 | 53.86 | 34.24 |
| Goal 3. Organics Emissions | 6 | 3 | 2 | 0 | 71.61 | 84.94 |
| Goal 4. Sludge Generation and Shipments | 4 | 2 | 5 | 0 | 50.15 | 51.58 |
| Goal 5. Metals Utilization | 4 | 4 | 3 | 0 | 56.88 | 49.46 |
| Goal 6. Water and Air Emissions | 5 | 3 | 3 | 0 | 59.56 | 46.5 |
| Goal 7. Human Exposure | 0 | 8 | 3 | 0 | 48.48 | 51.39 |

On average, the ten Wisconsin companies have achieved over 57% of the goals originally committed to. The most difficult challenge for Wisconsin appears to be the 50% water usage as the above table indicates a progress of only about 30%. Water costs are relatively inexpensive in Wisconsin compared to the east and west coasts so there probably hasn't been much economic incentive to fully implement many water conservation measures.

The reduction in organics appears to be well on the way to success at a nearly 72% achievement rate. Wisconsin participants also seem to have a better handle on energy conservation as compared to the nationwide average.

Table I displays the typical results achieved by one of the ten Wisconsin participants in the program. It also provides a brief description of the goals of the program. Of the ten participants, the highest achiever has accomplished 93.55% of the goals while the lowest is at 25.8% of the goals.

| Table I. 1999 Environmental Progress Report<br>Prepared by the National Metal Finishing Resource Center (www.nmfrc.org) | | | |
|---|---|---|---|
| **Goal** | **Description of Goal** | **Achieve Goal in 1999?** | **% Progress in 1999** |
| 1 | **50% Water Reduction.** This goal is met when a facility has an annual water usage that is 50% or less of its baseline year water usage. | No | 30.39% |
| 2 | **25% Energy Reduction**. This goal is achieved when a facility's total annual energy consumption is 25% less than its baseline year total energy consumption. | Yes | 100.00% |
| 3 | **90% Reduction in Organics Emissions.** This Goal is achieved when sum of the annual emissions of TRI organic | ***No*** | 94.78% |

| | | | |
|---|---|---|---|
| | compounds to air and water are reduced by 90% from the baseline year quantity. | | |
| 4 | **Reduction in Sludge Generation and 50% Reduction in Shipments to Land.** This goal is achieved when a facility reduces its annual quantity of hazardous wastewater treatment sludge that is disposed of in landfills by 50% or more of the baseline quantity and achieves an overall reduction in the quantity of hazardous wastewater treatment sludge generated. | No[1] | 0.00% |
| 5 | **98% Metals Utilization.** This goal can be achieved in one of two ways: (1) a facility is land-disposing 2% or less of TRI metals used ("original method") or (2) a facility reduces overall wastewater treatment sludge generation by 50% or more from their baseline year quantity ("alternate method"). | Yes[2] | 100.00% |
| 6 | **50% Reduction in Metals Emissions to Water and Air.** This Goal is achieved when the sum of annual emissions of TRI metals and cyanide to air and water are reduced by 50% from the baseline year quantity. | No | 21.44% |
| 7 | **Reduction in Human Exposure to Toxic Materials in the Facility and the Surrounding Community.** This Goal is achieved when a company has performed all actions or updated actions identified in the "reduction in human exposure to toxic chemicals" section of the worksheet in the reporting year | No | 70.00% |
| | **Totals:** | 2 | **59.52%** |

[1] Failed first part of this section: Reduction of sludge volume. The second part, 50% reduction is shipment to landfill was not considered.
[2] Original method used to calculate Goal 5.

Other notes:

- For Goals 1-4, the "alternate method" of calculating Goal 5, and Goal 6, calculations were adjusted to account for changes in the facility's level of production;
- Production Units (used for normalization): Dollars;
- Baseline year (1992) production: $ 2,073,736; current year (1999) production: $ 3,309,000;
- Net change in production after inflation (this value will be used to normalize your data): + 46.87%.; and
- This progress report is available on the Strategic Goals Program web site at (www.strategicgoals.org).

Tables J and K provide an overview of normalized data for the ten Wisconsin participants for organics emissions, metals discharged to water, total wastewater discharged, energy usage, sludge solids produced, and total sludge solids shipped offsite. The data is normalized to provide a more accurate method of comparison.

| Table J. Normalized Data for Wisconsin | | | | | | |
|---|---|---|---|---|---|---|
| **Year** | **Organics** | | **Metals discharged to water** | | **Total wastewater discharged** | |
| | #/$ | % Change | #/MM | % Change | Total Gallons | % Change |
| Baseline* | 0.0015 | | 15.69 | | 42,666,614 | |
| 1997 | 0.0014 | -9.82 | 6.95 | -55.71 | | |
| 1998 | 0.0011 | -30.9 | 3.62 | -76.9 | 49,071,633 | +15.0 |
| 1999 | 0.0007 | -54.9 | 5.14 | -67.3 | 42,183,198 | -1.1 |

* Generally assumed to be 1992
#/$: Pounds of organics per dollars in sales
#/MM: Pounds of metal discharged for $1,000,000 Sales

| Table K. Normalized Data for Wisconsin | | | | | |
|---|---|---|---|---|---|
| **Year** | **Energy usage** | **Sludge Solids Produced** | | **Sludge Solids Shipped offsite** | |
| | **% Change** | **#/$** | **% Change** | **Total pounds** | **% Change** |
| Baseline | | 0.014 | | 19,492,855 | |
| 1997 | | 0.016 | 14.0 | | |
| 1998 | +30.9 | 0.008 | -39.8 | 7,023,000 | -64.0 |
| 1999 | +97 | 0.010 | -23.6 | 9,281,600* | -52.4 |

#/$: Pounds of sludge solids produced per $1 sales

* Increase likely due to major recycler (Horsehead) no longer accepting small shipments from electroplaters

There may be increased interest in the SGP as a result of the proposed Metal Products and Machinery (MP&M) Effluent Guideline (40CFR 438). The new MP&M rule will cover facilities that manufacture, rebuild and maintain finishing metal parts. It will provide much stricter limits for metals discharged in wastewater. The new rule was proposed in December 2000, with anticipated promulgation in 2002. In recognition of industry commitment to SGP, EPA is proposing that companies could demonstrate compliance with specific pollution prevention practices in lieu of meeting the new MP&M standards.

## J. Printing Sector

Over 1600 printers are found in Wisconsin, making printing one of the largest business sectors and one of the largest employers in the state. Printing takes place on a variety of surfaces—from paper and plastics to metal foils. Printing is done with rotogravure, flexographic, sheetfed or offset printing and with or without heat to assist in drying. These many types of printing require a number of different solvents. The size of printers also varies -- from the three-person shop to the national printers with multiple plants in Wisconsin.

**Performance Measures**

**Interagency Cooperation**

SHWEC, DNR and other partners in the Printers' National Environmental Assistance Center (PNEAC) once again presented a nationally broadcast satellite videoconference program. "*High Performance Flexo, Printing with a Cleaner Greener Image."* SHWEC performed this project in its role as a directing partner in PNEAC.

The program reached approximately 1000 attendees at nearly 180 downlink sites in Wisconsin, other U.S. states and Canada through the EPA's Air Pollution Distance Learning Network. The program was also Webcast by the GreenWorks Channel to 60 viewers around the world. Videotapes with the course notebook are available for purchase and use in training. The program is also available via the Web at the GreenWorks Channel's on-line archives. A DVD designed to support in-house training at flexographic printing companies is also being developed.

Evaluation of the program shows that "Seventy-six percent of the printers who attended and completed an evaluation form indicated that they intended to adopt one or more of the practices recommended in the program to improve their compliance or reduce wastes." The most frequently noted plans of action included: changing their selection of inks; improving their management of solvent-containing shop towels or wipes; changing the type of solvent they use or how it is managed; and improving training of their employees.

## K. Scrap Recycling and Auto Salvage

In 1997 DNR assigned a scrap metal and salvage sector specialist to work with the industry on incorporating pollution prevention ideas into its daily operations while ensuring economic growth.

From 1998 to 1999, roughly 700 salvage yards were 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).

The Wisconsin DOT Dealer Book showed that 639 facilities were licensed as salvage dealers for the 1999 to 2000 period. Different types of licenses are given different license numbers. The numbers are distinguished by their ranges and prefixes; SL refers to auto salvagers:

**Table L. Salvage Dealer Licenses**

| Numbers | Type of License |
|---|---|
| SL1 - SL699 | Type 1 Salvage Dealers<br>(Facilities include office and yard) |
| SL700 – SL899 | Type 2 Salvage Dealer |

| | |
|---|---|
| | (Business conducted within a building) |
| SL900 – SL999 | Type 3 Salvage Dealer<br>(Scrap metal recycling/shredding) |
| SL1000 - SL1400 | Type 4 Salvage Dealers/ "Scavengers"<br>(Pick up and deliver to shredder) |

Salvage Dealer Licenses: Businesses holding these licenses may buy and resell motor vehicles for wrecking, processing, scrapping, recycling or dismantling purposes. The holder of a Type 4 salvage dealer license, or "scavenger" license, may only transport salvage vehicles directly to a salvage yard or scrap metal recycler after removing tires, batteries and gas tanks.

If not managed properly, waste associated with the processing of old automobiles, refrigerators or other appliances, (microwaves, computers etc.), can enter and contaminate the environment. Some salvage yards go through great lengths to recover and recycle waste oil, chlorofluorocarbons (CFCs), antifreeze, mercury switches, lead acid batteries, gasoline, and copper, etc., but 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 these materials, they usually end up as shredder residue, are landfilled and can no longer be looked upon as a recyclable product.

## Performance Measures

#### Interagency Cooperation

Though their purpose and goals are different than DNR, DOT and DNR field staff met in 1999 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 currently requires a storm water Permit Number and the Refrigerant Recovery Permit Number (where applicable) on their license applications. Some DOT investigators refuse salvage licenses to applicants until proof is provided that the yard meets the requirements of the DNR permits. 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.) Those transporting appliances only are required to get a safe transport permit.

In 1999, DNR's Bureau of Watershed issued Storm Water Pollution Prevention Permits to all auto dismantlers, and all Storm Water Pollution Prevention Plans were to be submitted to DNR by November 1, 2000.

In 1998, introductory meetings were arranged with board members from each industry association to introduce the business sector specialist and to listen to the concerns in this sector. In 1999 and 2000 a booth was displayed at the Upper Midwest Auto Salvage Convention in February to introduce members of industry to the sector specialist. In 1999 and 2000 DNR staff from air waste and water programs were made aware of the Cooperative Compliance Program (CCP) through web information, speaking engagements, and e-mail. 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).

#### Data

| Table M. 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 N. 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 |

Many of the 639 salvagers, licensed by the DOT, were issued refrigeration recovery and/or safe transport permits by the Bureau of Air Management. (Note: The Air Management database does not distinguish between those salvagers that salvage appliances and those that salvage autos with respect to freon recovery.)

#### 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.

The Tomorrow Homes Foundation (the charitable arm of the Wisconsin Manufactured Housing Association) applied for and received a $37,410 grant from the DNR's Waste Reduction and Recycling Demonstration Grant Program. The proposed program will focus on the recycling of abandoned mobile homes. This problem exists statewide where these homes have become inhabitable and exist in wetlands and other sensitive areas of tax delinquent properties and foreclosed lands. Amy Bliss, executive director of the Tomorrow's Home Foundation, continues to pull this program together and is currently accepting applications from homeowners, local governments, municipalities and other state agencies. For more information, please contact Amy Bliss at the Tomorrow's Home Foundation, 202 State Street, Suite 200, Madison, Wisconsin 53703 or call (608) 255–3131.

Participants will be required to properly remove and properly dispose of such things as garbage, mercury switches, PCB-containing devices, and Freon in refrigeration units. Homes will be transported to a salvage facility for dismantling or taken directly to a processor to be shredded for metal recovery. The Program expects to recycle roughly 100 discarded mobile homes within the next 12 to 18 months. For more information about DNR's Waste Reduction and Recycling Demonstration Grant Program, contact Sheila Henneger, Recycling Grants Coordinator, at (608) 266-9426.

One of the best tools available to control contaminants from getting into our surface and groundwater is the Industrial Stormwater Permit that was issued to all salvage operations with SIC 5015 and 5093 in 1998 and 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 BMPs. The CCP has been entrusted to conduct training programs annually, report violations, and assist members in obtaining compliance with a schedule designed by the DNR Stormwater Permit staff.

As of November 1, 2000, nine CCP groups have been established. There are six Automotive Dismantler Groups (SIC 5015) and three Scrap and Waste Recyclers CCP groups (SIC 5093). Out of the roughly 557 salvage operations identified as needing Stormwater Permits, roughly 300 are participating in a CCP. To date all CCPs have submitted their annual compliance reports to the DNR. All participants have completed a Stormwater Pollution Prevention Plan and are prepared to begin implementing BMPs. Many had begun to do so prior to the requirement date. DNR staff from the Stormwater program and CEA were asked to participate in all training sessions held for members of the groups. Hard copies of the training programs for CCP members can be reviewed at regional offices.

Anyone with questions can contact the regional stormwater specialist, Eric Rortvedt, at (608) 264-6273 or Mark Harings, Salvage Sector Specialist, (715) 831-3263.

#### Challenges

Administrators of the CCP programs have indicated that many of their members are currently removing mercury switches from automobiles. A meeting was held in January 2001 with CEA, Air Management, Waste Management, and Watershed Management staff and John Reindl of Dane County. This meeting pursued programs with the auto industry affiliates and the auto salvage and scrap and waste recycling industry to promote mercury elimination, reduction, and recycling. Another challenge drawing interest from auto recyclers is the creation of collection programs for gasoline removed from salvage autos.

## L. Wood Products

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**

The Great Lakes Wood Stove Changeout program, set for February through April, 2001, will improve air quality by supporting the changeout and disposal of old, inefficient wood stoves. These inefficient wood stoves contribute to air and water pollution by releasing particulates, volatile organic compounds (VOCs), as well as polynuclear aromatic hydrocarbons (PAHs), including benzo-a-pyrene. EPA research indicates that a larger percentage of PAHs released in the Great Lakes region come from older wood-burning stoves.

DNR will be offering an incentive payment of $200 for every old stove changed out and disposed of properly (taken to a salvage yard) through participating retailers in a Great Lakes Basin county. Retailers of hearth products will be offering a percentage off the price of new stoves (including gas, wood, and pellet) statewide. This program also offers citizens a way to take action on their own to improve air quality.

The program will be in Wisconsin, Michigan, Minnesota, Illinois, Indiana, Iowa, Kansas, Nebraska, New York, North and South Dakota as well as Ontario, Canada. In Wisconsin, the changeout program is happening statewide, however, the $200 award is only being offered through retailers in the Great Lakes Basin counties. Even if a citizen does not live in a Great Lake Basin County, they are eligible for the $200 award if they travel and upgrade from an old wood burning stove to a cleaner burning appliance from a retailer that *is* in the Great Lake Basin.

This is a partnership project between several states, EPA Region 5, and the Hearth Products Association (the trade association for hearth retailers). In Wisconsin, supporters include DNR, EPA, DOA, and the Department of Energy as well as the Hearth Products Association.

For more information, contact Laurel Sukup, Business Sector Specialist, Rhinelander, at (715) 365-8936. Or, contact the Heath Association directly by calling 1-877-81-STOVE or visit online at www.woodstovechangeout.org

**Data**

**Table O. 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 Envt'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 |
| 1998 | 14 | 123,343 | 303,775 | 0 | 0 | 427,118 | 1279 | 1,020,623 | 1,449,020 |
| 1999* | 15 | 138,509 | 307,543 | 0 | 0 | 446,052 | 503 | 1,199,400 | 1,642,914 |

# III. Innovative Approaches

## A. Environmental Cooperation Pilot Program

The Environmental Cooperation Pilot Program is a Wisconsin initiative designed to test an innovative approach to regulation that also enhances the quality of our environment. In February, 2000, the Wisconsin Electric Power Company was the first business in Wisconsin to sign a cooperative environmental agreement with the state under which the utility committed to pursuing environmental improvements beyond those required by current regulations.

Under the agreement, the company will beneficially reuse coal ash from its landfills as a fuel source, thus reducing its use of coal, freeing landfill space and protecting groundwater. It will also develop and carry out a facility-wide environmental management system at its Pleasant Prairie electric generating plant to identify and minimize or eliminate all environmental impacts. Wisconsin Electric also will conduct mercury emissions testing and research, expand its efforts to inform and involve the public in decisions affecting the environment, and publicly report on its environmental performance.

In return, DNR will speed up and streamline permitting procedures while still protecting the environment, eliminate unnecessary monitoring requirements, and increase electronic information sharing to reduce paper use and speed decision-making.

The Environmental Cooperation Pilot Program has accumulated important experience on the potential impact of innovative legislation and identified obstacles faced by regulators in initiating changes within their respective agencies. The Program has also provided a means for companies seeking regulatory approval of environmental innovations. Other participants hope to realize reduced air emissions and waste generation, increased recycling rates, and increased employee and community awareness through their participation.

A Cooperative Agreement Advisory Group, consisting of representatives from participating facilities, environmental organizations, Wisconsin Manufacturers and Commerce, EPA, SBCAAP, and DNR, convened in August of 1999 to work on public involvement. This group has assisted participating facilities in developing guidelines for public involvement that have had promising early results. One facility hired a consultant to develop an outreach program, an interested parties group, and a community survey instrument. Another facility hosted an open house, facility tour and informational meeting for its interested persons group, published letters to the community and open invitations to the public in the local newspaper, and developed related information for its web site. All participants have improved their public outreach initiatives as a result of their involvement.

Through a Memorandum of Agreement, DNR and EPA have been refining the negotiation process, with mixed results. Discussions on key regulatory flexibility issues between and within the two agencies continue to move forward at a slow pace. As a result, the transaction cost for companies and DNR staff continues to be high. Of the eight companies enrolled as of January of 2000, two have opted out. Respectively, these two companies exiting the program perceived a lack of support by DNR on their flexibility request, and a lack of support by the Department for an innovative solution to an ongoing enforcement action. In both cases, DNR has learned much from the experience, and continues to refine its negotiation process.

Despite these obstacles, facilities participating at various stages in the Environmental Cooperation Pilot Program have contributed to the DNR’s understanding of what industry's needs are, and are pursuing changes within their organizations which will make lasting and positive impacts on the environment.

## B. Green Tier - A New Environmental Leadership Program for Wisconsin

Wisconsin has learned a great deal about obstacles to regulatory innovation through three years of implementation experience in the Environmental Cooperation Pilot Program. Former DNR Secretary George Meyer looked at a variety of factors— this pilot program experience, the emerging federal program, EPA's Performance Track, and recent developments in other states— and felt that the time was right to develop a permanent environmental leadership program for Wisconsin. The Green Tier program is envisioned to expand opportunities for business and other organizations to address significant environmental concerns that are beyond the scope of existing requirements.

In July 2000, Meyer convened an advisory committee of 15 highly regarded citizens from local government, business and environmental interests to begin the task of developing a framework for Green Tier. The committee was given a blank sheet of paper and a December deadline to develop legislative concepts for Green Tier for then Governor Thompson to consider including in his 2001 – 2003 biennial budget. The advisory committee reached agreement on several concepts, pending review of statutory language. The initial recommendations for the Green Tier are detailed below.

Green Tier is a voluntary, beyond compliance program primarily for business, but with opportunities for other organizations to participate. Lessons learned from the implementation of the Environmental Cooperation Pilot Program are influencing the structure of the Green Tier program. Green Tier has two levels of participation. In the entry level, Level I, recognition and regulatory flexibility are provided for those that qualify and receive certification. Prerequisites for Level I entry include a good compliance record, commitment to implementing an environmental management system and establishment of superior environmental performance goals.

Level II provides greater incentives for greater commitments toward addressing serious regulated and unregulated environmental issues. A contract is used to establish commitments and local stakeholders and DNR are parties to contract negotiations. Examples of the incentives being proposed in Level II include expedited permit review, expedited approvals, reduced monitoring and reporting, and compliance deadline flexibility. Third party audits and periodic compliance performance evaluations, with public disclosure of findings, are required of Green Tier program participants. Level II is envisioned as a tool to address significant regulated and non-regulated environmental issues such as wetlands restoration, renewable or sustainable energy sources, toxic releases to the environment and climate change.

"Differentiating" environmental leaders or potential leaders from the rest is becoming a firmly established approach. The challenge is how to distinguish those that can do better than the minimum and then encourage them to perform environmental good deeds far beyond the minimum. Green Tier is being developed to meet this challenge.

Green Tier is currently being considered by the legislature, and the advisory committee continues to work on Green Tier issues. For further information, please visit the Green Tier Advisory Committee web site, at the DNR's web site, http://dnr.wi.gov/. Look under the Bureau of Cooperative Environmental Assistance and then for the Green Tier Advisory Committee.

## C. Fact System

The Fact System is a new tool provided by the DNR that enables the public to access environmental and release data (from the DNR) over 6,000 Wisconsin companies. It can be a useful tool for evaluating pollution trends over time, and for demonstrating progress in pollution prevention. It was launched on the Internet on April 11, 2000 and may be accessed from the DNR Home Page (http://dnr.wi.gov/) by clicking on the arrow next to "Go to some top topics", selecting Fact System, and clicking "Go!"

The Fact System provides specific types of information that are commonly requested by the public. Founded on Wisconsin's community right-to-know ethic, the system's potential benefits include better customer service,

improved data quality and emissions reduction. No new or additional information is collected by DNR to support the Fact System. The essence of the system is not that it is a unique source of data, but that it integrates information from various DNR databases to display a holistic view of facilities.

Users can retrieve the following types of information:

1. Facility names
2. Addresses
3. Phone numbers
4. DNR Facility Identification (FID) numbers and other ID numbers used by DNR
5. Historical and current DNR program involvement for 1990-1998
6. Standard Industrial Classification (SIC) codes of regulated entities (a 4 digit numeric code)
7. "Environmental Profiles", i.e. the amounts of each waste reported by regulated entities per calendar year under the following regulatory programs, including:

- Air emissions inventories;
- Wastewater discharge monitoring reports;
- Hazardous waste annual reports;
- Hazardous waste manifests; and
- Toxics release inventories.

As of December 2000, the public can link to detailed, accurate information from over 6,000 facilities of the 9,000 facilities in the Fact System. More links are being added as DNR and facilities verify the accuracy of the data. Detailed search instructions, stakeholder input, project updates and issue papers may be accessed on the Fact System Updates page. This page may be linked to either from the Fact System or directly from the main DNR web page by selecting Fact System Updates in the "Go to some top topics" box and clicking "Go!".

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# IV. Technical Assistance, Education & Compliance Assistance

## A. Technical Assistance

### 1. SBCAAP Workshops and Seminars

With help from the other pollution prevention providers in the state, the SBCAAP staff incorporates the pollution prevention message into outreach materials where applicable. From 1999 through 2000, SBCAAP participated in or coordinated 27 workshops and seminars that reached nearly 3500 people from small Wisconsin businesses. The majority of all workshops and seminars coordinated by SBCAAP include a waste reduction/pollution prevention component in addition to providing businesses with detailed environmental compliance information. Combining those topics shows the added benefit to businesses that along with saving money, alternate production scenarios using pollution prevention techniques may also exempt them from permits or emission limits.

### 2. SHWEC -- On-site Assessments

SHWEC staff completed 45 on-site assessments for individual businesses throughout Wisconsin in 2000. Many of the assessments can be attributed to two specific projects accomplished by SHWEC in 2000—the Small Business Development Center (SBDC) project (carried out in La Crosse and Green Bay), and the statewide metal finishing PPIS project. Both projects are described in more detail in other parts of this report. Metal finishing companies who participated in the PPIS project evaluated the project, and gave SHWEC a very high

rating. The companies rated the value of SHWEC services as a 4.5, out of a numerical scale where 5 is extremely valuable.

Sometimes the impact of the assessments may not materialize for a significant period of time in many cases. Results from the assessment process can take months or even years to come to fruition. For example, the impact of a SHWEC assessment conducted in 1998 did not appear until July 2000 of this year, when the Eaton-Cutler Hammer facility in Watertown achieved ISO 14001 certification in July 2000.

For some of the printing shops that were assessed during the SBDC project in the LaCrosse area, it was their first exposure to an organized methodology for identifying pollution prevention, waste reduction or even recycling options. These shops are not likely to show results until 2001.

Other shops assessed during the year were very sophisticated, with excellent environmental programs. These shops are frequently looking for confirmation of their compliance, and validation of their current programs, including waste reduction and pollution prevention practices. For these shops, the next logical step is the implementation of a formal environmental management system (EMS) such as ISO 14001. In those cases, the assessment can be just what is needed to get the process started.

SHWEC assessments also provide a direct pipeline of resources and information from the other Wisconsin pollution prevention partners. In addition to the assessment program, SHWEC provides pollution prevention education and information through telephone requests, e-mail requests and via numerous speaking engagements each year. In 2000, SHWEC staff estimated that 200 to 250 additional requests for assistance were served from the Green Bay, Milwaukee, Stevens Point and Madison offices.

## B. Education

### 1. Mercury Education in Schools

With the help of a grant from the EPA Great Lakes National Program Office, SHWEC is implementing a *Mercury in Schools Project*. This project provides school and agency staff with the information and tools needed to reduce or eliminate mercury in schools. SHWEC has established and maintained a clearinghouse for information on where mercury can be found in schools, mercury elimination and spill incident case studies, and educational materials on mercury and overall pollution prevention for teachers, students and school administrators. SHWEC also created and maintained a web site at http://www.mercuryinschools.uwex.edu/, where these materials can easily be accessed, and has provided technical and administrative support for federal and state efforts under the U.S.-Canada Binational Strategy Mercury Work Group.

SHWEC also conducted regional "train the trainer" workshops for educators from the Great Lakes basin. These workshops were based on the mercury curriculum package developed by the Pollution Prevention Partnership and DNR. In 2000, they were held in Detroit in August, Chicago in September, and Indianapolis in October, and at the October Regional conference of the National Science Teachers Association in Milwaukee, WI. Over 200 teachers have been trained to-date.

#### 2. Science and Mathematics: The Community as a Classroom

This is a two-year project funded by an Eisenhower Professional Development grant that will develop "real-world" instructional units for teachers to use. These instructional units will help middle and high school students learn math and science and understand how those subjects relate to issues in their own lives. The funding comes from federal dollars designated through Title II of the Improving America's Schools Act of 1994 and channeled through the University of Wisconsin System, which makes the grant awards.

SHWEC is leading the Solid and Hazardous Waste Management Unit development team through a series of activities. This is one of five development units in the overall grant to be carried out at UW-Green Bay. The teams worked through December 2000 to develop the learning units; then teachers will test and assess the materials in classrooms from January through May 2001. The new units will be shared with Northeast regional teachers at a conference to be scheduled in June or July of 2001.

Teachers throughout Wisconsin will be invited to a June 2002 conference titled "Community Problems and Issues as a Source of Instructional Materials for Addressing Science and Mathematics Learning," sponsored by UW-Green Bay's Institute for Learning Partnership.

#### 3. Pilot Environmental Outreach to Small Businesses

SHWEC worked with the UW-LaCrosse and UW-Green Bay SBDC offices to: identify environmental issues and needs facing small businesses, design outreach methodologies, develop supporting resources for SBDCs, and to respond to requests for detailed environmental assistance following SBDC on-site visits.

Most of SHWEC staff's follow-up was provided for the printing sector in southwest Wisconsin, where strategies were developed to reach and appropriately assist each segment of the printing industry. UW-LaCrosse contacted local printers by mail, phone and in person with the support of a printing consultant to understand needs and offer assistance from the SBDC/SHWEC team. Several components of the printing industry were provided with numerous written materials, training program opportunities and on-site waste reduction assessments.

SHWEC conducted on-site waste reduction assessments at five printing companies with a sixth still pending out of thirteen companies visited by SBDC. The assessments helped the companies to review their current environmental performance and identified opportunities for improving environmental compliance and reducing waste and its associated costs. Recommended improvements identified during assessments included the potential to reduce volatile organic compounds from the use of solvents and printing inks, improved management of chemicals used for etching, and reduction of silver in wastewater.

Other outcomes included identification of educational opportunities for staff training, identification of alternative materials and technology, and recommendations for solid waste management and recycling.

## C. Compliance Assistance

### 1. Rock River Compliance Assistance Project

The focus of the Rock River Compliance Assistance Project is building community partnerships to improve the environment. The project included an analysis of manufacturer attitudes, which has shown that many small businesses do not rely on the DNR for information about regulatory compliance and pollution prevention.

Working in partnership with the Rock River Coalition, SHWEC has employed innovative outreach approaches to encourage companies to meet or exceed regulatory standards for hazardous waste and emissions.

By raising awareness among small businesses about compliance issues, and supporting coalition-building between community groups and manufacturing, SHWEC supports the idea that responsibility for a clean environment belongs to both companies and the communities were they reside.

### 2. Community Toxic Reduction Project

The Village of Spencer is a small community of approximately 1,000, located in central Wisconsin. During 1998 and 1999, the Village Wastewater Treatment Plant had experienced several upsets from the random

discharge of unidentified toxic materials. The Village Board President and Wastewater Treatment Plant Operator requested that SHWEC undertake a project to raise community awareness of this issue and to try and identify possible points of discharge of the toxic materials.

SHWEC staff developed a letter and guidance for the Village to mail to all commercial and home sewer users. The fact sheet explained the issues faced by the Village, including the potential cost impact to the community and provided specific guidance as to what was authorized for discharge to the sewer as well as prohibited discharges.

During a three-month period, SHWEC staff visited 21 facilities in Spencer. SHWEC staff provided written reports to facilities with significant discharges as well as advice and guidance addressing pollution prevention, waste reduction and recycling.

The mailing and fact sheet had an immediate and significant impact on community awareness of the issue. Random upsets of the wastewater treatment plant ceased almost immediately after the start of the project. There have not been any new, significant, random discharges of toxic materials to the plant that could not be controlled by the normal operations as of August 2000.

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# V. Publications, the Web, and Recognition

## A. Commerce

The SBCAAP creates numerous publications outlining compliance requirements for air pollution regulations. Each of the fact sheets specific to an industry contains a section highlighting pollution prevention tips and recommendations they can use. By exploring these pollution prevention options, businesses may reduce their emissions to a point where certain regulatory requirements may no longer apply. Through these publications, the SBCAAP helps businesses reach compliance by avoiding the creation of pollution.

Over ten new fact sheets were created in 2000 to address more general compliance issues that may affect all types of businesses but are particularly difficult for smaller businesses to address. Another twelve additional fact sheets are being drafted, and the majority of which will address waste alternatives and recycling of specific materials to avoid creation of cross-media pollution.

Another publication is a free quarterly newsletter, the *Small Business Clean Air Advisor,* which provides regulatory compliance information, training schedules, and pollution prevention recommendations. The *Advisor* reaches nearly 2000 smaller businesses around the state.

To reduce the amount of paper generated through mailing of the newsletter and providing fact sheets at workshops and seminars, the SBCAAP will be offering the publications in PDF format both through E-mail and on the COMMERCE web site.

## B. SHWEC & Wisconsin Collaboration for Pollution Prevention: PPIS 2000-2001

The overall mission of this PPIS project is to promote sustainable partnerships among environmental and business assistance providers, technical educators and consumers through a team approach between DNR, COMMERCE, and SHWEC.

The first year objective of the project is to develop a coordinated web site that will be available for both internal and external stakeholders. The coordinated web site will allow stakeholders to access pollution prevention

information and programs through any of the partners' web-sites. Eventually this entry point will take anyone to all of the pollution prevention information available in the state as well as links to national organizations, states and EPA resources. SHWEC is taking the lead to develop and coordinate this web site.

The second component of the project includes the development of a new "permit primer" which will help both new and existing businesses in the state understand their environmental responsibilities. This primer will incorporate pollution prevention as a core strategy.

The final part of the first year of the project will incorporate stakeholder input to gain buy-in to the idea from a broad-based user group.

## C. DNR

### Publications

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 five categories:

- Programs and Resources Available to Help You;
- Wisconsin Environmental Requirements;
- Waste/Pollutants/Chemical-Specific Assistance;
- Process-Specific Assistance; and
- Industry-Specific Assistance.

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

CEA staff distribute publications order forms at trade shows, at conferences, in mailings, and with the 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.

### Web

CEA has continued to update existing publications and make them available on CEA's Web page on the DNR's Web site. Over 200 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.

**Table P. Publications Distributed by Cooperative Environmental Assistance (CEA) and DNR's Hazardous Waste Minimization (HWM) Program**

| State Fiscal Year (July 1 to June 30th) | Publications Clearinghouse | | | CEA Site on DNR Web | |
|---|---|---|---|---|---|
| | Number of Orders Filled | Number of Publications Sent | # Publications Available | # Publications Available | # Hits "Publications on-line" Page |

| | | | | | |
|---|---|---|---|---|---|
| 1999 – 2000 | 119 | 4117 | >200 | >200 | 979 |
| 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 | - | - |

**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 the Fact System, Environmental Cooperation Pilot Program Agreements, ISO 14000, and the Wisconsin/Department of Defense Pollution Prevention Alliance, are featured. News and Calendar of Events sections provide announcements of upcoming conferences and events, and the bureau's newsletter, Waste•Less•News, is also posted on-line.

The number of visitors has grown steadily over the past several months as more and more material is added. From January to December 2000, hits for the home page have fluctuated from 590 up to 1010. The Environmental Cooperation Pilot Program and ISO 14000 areas are very popular, as is the Publication section (especially the Clip Art section).

## D. Awards & Recognition

**1. Prevention/Environment/Prosperity Award**

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.

**2. Governor’s Award for Excellence in Hazardous Waste Reduction**

COMMERCE works with the Federation of Environmental Technologists to coordinate the Governor's Award for Excellence in Hazardous Waste Reduction. SHWEC, COMMERCE 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.

**3. Hot Mix Asphalt Environmental Leadership Award**

DNR partnered with the Wisconsin Asphalt Pavement Association (WAPA) in the new Hot Mix Asphalt Environmental Leadership Award program. This award recognizes asphalt plants that have exceeded the environmental standards set by the EPA and DNR for the asphalt industry. While environmental performance is the focus of the award, a hot mix asphalt plant also has to show exemplary performance in safety, plant appearance and community relations. The winners are dedicated supporters of their community. This award program is an example of an industry sector working proactively with a regulatory agency and local units of government to improve the environment and enhance their public image.

To earn this award, each plant was inspected by a team of three judges who evaluated approximately 70 different criteria and scored them from zero to five, with five being the highest rating. The criteria and scoring tables were developed by representatives from townships, cities and counties, in addition to DNR and WAPA staff. The criteria include issues that concern people living both near and far from an asphalt plant. One inspection team member for each plant was a local representative, usually an elected official, such as a township supervisor or a mayor, the county highway commissioner or someone from the local zoning department. The second team member was an equipment expert that knows how each part of the plant is supposed to function but do not work directly for an asphalt producer. The third member was DNR's asphalt sector specialist, who went to every plant to provide consistency in the scoring.

These are some specific things plants must do to earn this award. First the team checks the production log books to be sure the plant is collecting and recording all the information required by their environmental permits. They must score a perfect 5 on all 23 issues in the environmental compliance and environmental control measure section to achieve the award. Next they look at plant safety, which also requires a perfect 5 on all 9 items. They must have an employee safety policy manual and demonstrate that all employees have received training. There are other requirements such as having posted speed limits and a clearly established truck and loader travel pattern. Points are scored for controlling fugitive dust by watering, sweeping and paving areas where vehicles travel. Having a clean storm water retention pond to prevent runoff of contaminated storm water also scores points.

Points are scored for recycling and the Wisconsin asphalt industry recycles nearly 100% of the material from reconstructed asphalt roads and burns most of the used oil that is drained from trucks and cars in Wisconsin as fuel. Points are also scored for plant appearance so these plants have a clean site, are painted a nice color and have attractive landscaping.

The community relations’ section of the award criteria is very important to the local officials and neighbors. Actions to sponsor programs at local schools, support local charities or in-kind donations, such as asphalt or use of equipment, earn award points. Open house events, plant tours, and proactive involvement of plant officials with local government and neighbors are encouraged to improve the industry's public image.

In the first year of this award program, 23 asphalt plants met all the criteria to earn this award and they were recognized at WAPA's annual convention.

# Appendix A

**Department of Natural Resources**
**Cooperative Environmental Assistance**
Please check out the CEA Staff Listing for a complete, current listing of employees.

**Department of Commerce (COMMERCE)**

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# Appendix B - The Metadata Section

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.

**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 (POTWs). 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 Toxics

#### 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 | Facilities Reporting Pollution Prevention |
|---|---|---|

| | Wisconsin | # | 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’s 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 EPA 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, 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.

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# Appendix C -- CEA’s Web Page

The web address for the Bureau of Cooperative Environmental Assistance is dnr.wi.gov/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 Cooperative 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, Hot Mix Asphalt Environmental Leadership 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.