

Reduce, Reuse, and Recycle

## 2000 Pollution Prevention Annual Report

Submitted by:  
Michigan Department of Environmental Quality  
Environmental Assistance Division

John Engler, Governor ♦ Russell J. Harding, Director  
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## Introduction

The Michigan Department of Environmental Quality (DEQ) has the responsibility of encouraging pollution prevention practices under Parts 143 and 145 of Public Act 451, the Natural Resources and Environmental Protection Act (NREPA). The legislation requires that DEQ publish and submit an annual report to the legislature and governor detailing the efforts it has undertaken during the previous fiscal year. The report reviews the state's progress in pollution prevention and summarizes program accomplishments. It also provides an opportunity to acknowledge DEQ's partners in pollution prevention and to outline initiatives anticipated for the next fiscal year.

This report summarizes the DEQ's major pollution prevention activities in fiscal year 2000 (October 1, 1999 through September 30, 2000). More detailed information is available on many of these programs, through published reports and on the EAD website ([www.deq.state.mi.us/ead](http://www.deq.state.mi.us/ead)). The EAD welcomes comments on the report and encourages feedback on the performance of its programs.

[www.deq.state.mi.us/ead/anlrpt/fy00.html](http://www.deq.state.mi.us/ead/anlrpt/fy00.html)

Authority: PA 451 of 1994	Total Copies: 1000
Total Cost: \$2,104.65	Cost Per Copy: \$2.10

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### Act 451 Legislative Report Requirement

The Natural Resources and Environmental Protection Act, 1994 P.A. 451, as amended, Sections 324, 14301 et seq. and 324.14501 et seq., identifies activities to be undertaken by the DEQ to advance pollution prevention by business, government, and institutional generators of waste. This report to the legislature provides a summary of projects and activities implemented by the Environmental Assistance Division of the DEQ to meet these requirements.

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## **Fiscal Year 2000: A Year of Program Enhancements**

### ***A Message from the Director:***

Pollution prevention (P2) is a high priority for the Department of Environmental Quality (DEQ), and has been established as one of nine principle targets that guide the DEQ. In recognition of the importance of pollution prevention, Michigan has dedicated funding to support these programs, both from hazardous waste fees and the Clean Michigan Initiative (CMI). The DEQ focuses its resources on securing partnerships and offering direct assistance to facilitate the implementation of pollution prevention at businesses, institutions, and by the public. I am proud of the work accomplished in Fiscal Year 2000 and would like to share some of the year's highlights.

- Over 400 Michigan facilities made public commitments to pollution prevention, representing a diverse set of industries including small metal finishing

companies, automotive assembly plants, golf courses, printers, marinas, and a community college. Many of these facilities are acknowledged in Appendix B of this report.

- The National Pollution Prevention Roundtable recognized Michigan's Pulp and Paper Pollution Prevention Partnership (P5) as the nation's most valuable pollution prevention project for 2000. Over the last nine years, although production has increased by 30 percent, P5 companies reduced hazardous waste generation and total discharges of substances in wastewater by 66 percent, water use by 31 percent, and total air emissions by 13 percent.
- Michigan state government met its obligation under the U.S. EPA Green Lights program. By upgrading to more energy efficient lighting Michigan is accomplishing annual reductions of over 50 million pounds of carbon dioxide, 500,000 pounds of sulfur dioxide, 190,000 pounds of nitrogen dioxide and 2 pounds of mercury.
- Under the Retired Engineer Technical Assistance Program (RETAP), funded through the CMI, 69 waste reduction assessments were performed, resulting in waste reduction recommendations with average savings of \$145,000.
- The Small Business Pollution Prevention Loan Program rules took effect on January 5, 2000, and several projects are proceeding.
- The DEQ pollution prevention staff responded to over 6000 telephone requests for assistance, produced over 100 new printed articles and publications and enhanced the P2 web page ([www.deq.state.mi.us/ead/p2sect](http://www.deq.state.mi.us/ead/p2sect)).

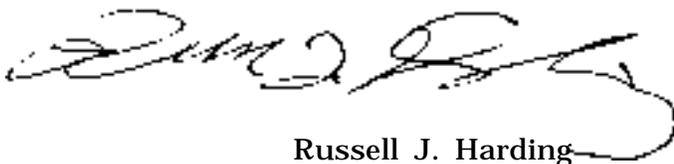
Pollution Prevention is the Best Solution

- Under the Clean Michigan Initiative, two new P2 grant programs were announced: the Michigan Household Hazardous Waste Collection Initiative (\$1 million); and the Michigan Regional P2 Grant Program (\$1 million).

I anticipate continued strong pollution prevention efforts in the coming year. While strengthening existing programs we will also pursue several new approaches to achieving increased pollution prevention:

- The Environmental Assistance Division (EAD) will be initiating a P2 partnership among the chemical manufacturing industry's technical assistance providers. A major goal will be to enhance access to available P2 technical assistance and increase general awareness of demonstrated P2 technologies.
- The department will offer a one-year Pollution Prevention and Energy Efficiency Demonstration Project. The project will fund several on-site demonstration projects that highlight the technical feasibility and economic benefits of implementing innovative P2 and energy efficiency technologies.
- The RETAP program will increase annual waste assessments to 100 per year and will produce additional case studies profiling participating companies who have implemented recommendations.
- Projects funded with CMI Household Hazardous Waste and Regional P2 grants will get underway and a second round of requests for grant proposals will be announced for the remaining funds.
- The DEQ will announce availability of grants under the Community Pollution Prevention Fund, utilizing the \$250,000 appropriation under the Bottle Escheats Bill. The fund will provide grants to local agencies to address local environmental issues through pollution prevention opportunities.
- EAD field staff will be available in every DEQ district office to provide pollution prevention assistance.
- The DEQ and Michigan's local health and environmental departments will pursue additional opportunities for collaborative efforts under a strengthened partnership.

I am pleased to provide this report and welcome any comments you might have regarding this publication or any of our environmental programs.



Russell J. Harding

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**What is pollution prevention?**

**Pollution prevention eliminates or minimizes the generation of waste at the source and uses environmentally sound on-site and off-site recycling where it is not possible to eliminate the generation of waste. Pollution prevention is distinguished from other emission reduction activities such as alternative waste treatment, release, or disposal technologies.**

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## **Pollution Prevention Strategy**

The Department of Environmental Quality's Pollution Prevention Strategy is intended to guide the department's efforts in promoting voluntary pollution prevention throughout Michigan. The Strategy provides ten objectives that reflect the department's pollution prevention activities. It incorporates initiatives intended to make cost effective waste reduction techniques available to all potential sources of pollution including service, commercial, and industrial businesses; governmental and institutional organizations; trade and business associations; agriculture, municipalities, and households.

In the coming fiscal year, the Strategy will be updated to reflect changing priorities resulting from amendments to Parts 143 and 145 of the Natural Resources and Environmental Protection Act 1994 PA 451 (Public Act 289 of 1998), new programs under the Clean Michigan Initiative, and new opportunities through the Michigan Clean Air Fund.

### **DEQ POLLUTION PREVENTION STRATEGY, AS REVISED 2/10/98**

1. Build awareness of pollution prevention through education and outreach services and activities.
2. Develop new and strengthen existing voluntary and cooperative approaches to achieve pollution prevention.
3. Integrate voluntary pollution prevention principles into DEQ environmental regulatory programs.
4. Remove regulatory barriers and create incentives to encourage the adoption of voluntary pollution prevention principles.
5. Strengthen the delivery of pollution prevention services.
6. Facilitate the adoption of pollution prevention practices and technologies by all stakeholders.
7. Promote the implementation of pollution prevention efforts in all state and local government agencies.
8. Improve DEQ capabilities to generate, collect, and analyze pollution prevention data to assess progress and programs, and to identify further opportunities.
9. Identify, obtain, and use grant and other funding sources to advance the pollution prevention goal.
10. Establish an effective communication/feedback mechanism that measures and obtains multi-stakeholder participation in the development and implementation of the DEQ's Pollution Prevention Strategy.

## **Regulatory Integration of Pollution Prevention**

The DEQ regulatory integration program focuses on using the permitting, inspection, and enforcement programs to encourage source reduction and recycling. It seeks to avoid cross media transfers of waste by integrating pollution prevention (P2) into the operation of environmental regulatory programs. The DEQ regulatory staff are in an excellent position to promote P2 concepts on a widespread basis.

Director Russell Harding formally endorsed the DEQ Integration Implementation Strategy in February 1997. The goal of the Strategy is to further integrate and institutionalize P2 into the DEQ regulatory policies, programs, and practices.

The DEQ has established a field staff unit, which is assigned the responsibility of facilitating regulatory integration within the department's district offices. The field staff serve as a resource for and advocate of P2. In fiscal year 2000, EAD expanded its field staff services to include a full-time staff person located in the Marquette District Office, providing six full-time P2 field staff statewide. The field staff organized P2 training seminars for district staff, obtained useful P2 informational materials for regulatory staff to distribute, accompanied regulatory staff on compliance inspections to promote P2 and assisted department staff in incorporating P2 in Supplemental Environmental Projects (SEPs).

Each year during National Pollution Prevention Week, the DEQ Director recognizes staff that have made a significant contribution to integrate P2 into their regulatory responsibilities. The award recipients for 2000 were: Gene Suoppi, Waste Management Division; Rick Shoemaker, Surface Water Quality Division; and Kendra Spielberg, Air Quality Division. To provide information on pollution prevention to all department staff, the EAD produces an electronic newsletter, *P2 Revue*.

In fiscal year 2001, the field staff will focus their efforts on using inspection staff as a means of providing P2 information to Michigan facilities. The EAD will also work with the department multi-media coordinators and the division field coordinators to identify and respond to opportunities for further P2 in department programs.

### **Regulatory Integration of Pollution Prevention**

[www.deq.state.mi.us/ead/p2sect/strategy/regintp2.html](http://www.deq.state.mi.us/ead/p2sect/strategy/regintp2.html)

### **P2 Revue**

[www.deq.state.mi.us/ead/p2sect/p2revue](http://www.deq.state.mi.us/ead/p2sect/p2revue)



**Toxic Chemical Release Inventory Data — State of Michigan  
Report Years 1996-1998**

	1996	1997	1998* (Orig'l Inds.)	1998** (All Inds.)
TOTAL ON- AND OFF-SITE RELEASES	<u>91,862,441</u>	<u>84,220,628</u>	<u>82,299,835</u>	<u>139,719,301</u>
TOTAL TRANSFERS FOR WASTE MNGMT	<u>207,521,882</u>	<u>222,141,717</u>	<u>219,874,258</u>	<u>399,211,674</u>

\*Totals for Original Industries only. Original industries are manufacturing facilities with primary Standard Industrial Classification codes 20-39.

\*\* Totals include New Industries. Beginning with Report Year 1998, seven new industries reported for the first time.

Source: MDEQ SARA Title III data, frozen as of 3/15/00

**Toxic Chemical Release Inventory (TRI) Data: How it Relates to Pollution Prevention**

The connection between pollution prevention and TRI is rooted in federal legislation. Under Section 313 of EPCRA (Emergency Planning and Community Right-to-Know Act) and section

6607 of the PPA (Pollution Prevention Act), businesses that meet TRI reporting requirements must report annually about waste management activities and the release of toxic chemicals by facilities that manufacture, process, or otherwise use these materials.

Facilities report on-site releases, both controlled and accidental, to air, water, land, and underground injection wells, and off-site releases for disposal. The figures above show the quantities in pounds per year of TRI chemicals released or transferred in Michigan for Report Years 1996 through 1998. Two sets of totals are given for Report Year 1998. The first set reflects totals for original industries only. Original industries are facilities in the manufacturing sector that have been required to report since the beginning of the Toxic Chemical Release Inventory. The second set of totals for 1998 includes data from seven new industry sectors that reported for the first time in 1998.

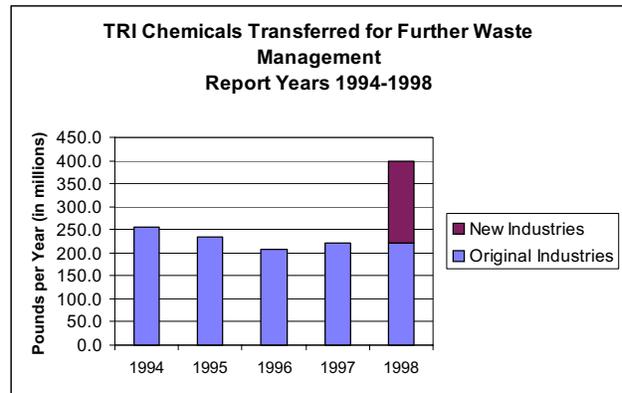
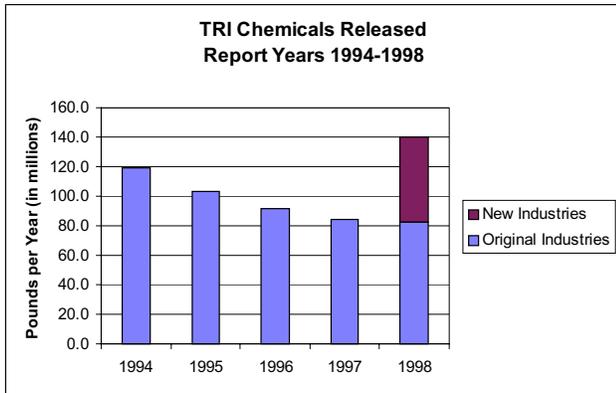
For 1998, Michigan manufacturing facilities\* have reduced releases of TRI chemicals over the past three years. The data shows a two percent reduction in total releases in 1998 compared to 1997 and a ten percent reduction compared to 1996. Transfers off-site for further waste management in 1998 saw a slight decline of one percent from Report Year 1997 and an increase of six percent compared to 1996. Total transfers for further waste management include recycling, energy recovery, and treatment.

Over the past few years, the DEQ has been analyzing the TRI waste management data to assess whether the information can be used as an indicator of the progress of P2 in the state. The analysis has focused on reductions in the amounts of TRI chemicals released annually, changes in recycling and energy recovery rates, and fluctuations in production information. The results of this analysis are due in fiscal year 2001.

So far, the results have been inconclusive due to the difficulty of extracting out the impacts of the economy and changes in environmental legislation on TRI. The

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following three graphs show changes in Michigan's TRI data over time. Graph 1 shows the total quantity of TRI chemicals released to the environment over a five-year period. Graph 2 shows the total quantity of TRI chemicals transferred off-site for further waste management. The reductions have been fairly modest. Graph 3 shows the amounts of waste managed by Michigan facilities through recycling, energy recovery, and treatment activities.

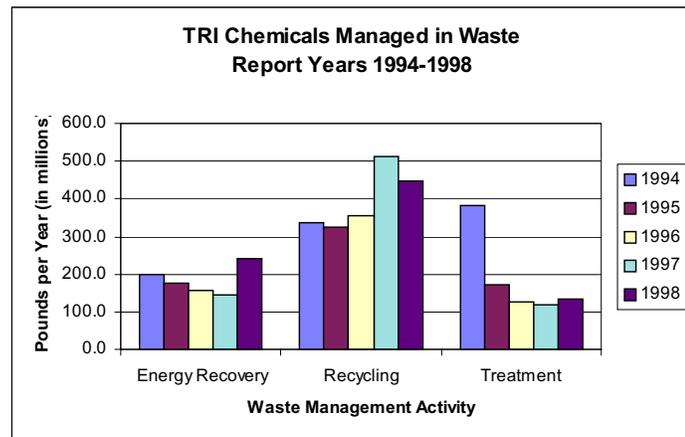


Graph 1  
 Data source:  
 RY 1996-1998, MDEQ SARA Title III RY1998 data, frozen as of 3/15/00.  
 RY 1995-1995, EPA TRI Explorer, "frozen" data set that includes revisions submitted as of 3/29/00.  
 Note: Report Year 1998 totals break out Original Industries from New Industries. Original industries are manufacturing facilities with primary Standard Industrial Classification codes 20-39. New Industries are those that reported for the first time in 1998.

Graph 2

The DEQ is currently assessing TRI data for reporting year 1999. This information will be available from the department in January 2001.

For additional information on TRI, contact the DEQ SARA Title III Program office.



Graph 3.  
 Data source:  
 RY 1996-1998, MDEQ SARA Title III RY 1998 data, frozen as of 3/15/00.  
 RY 1994-1995, EPA TRI Explorer, "frozen" data set that includes revisions submitted as of 3/29/00.  
 Note: This chart does not reflect waste management data for New Industries that reported for the first time for 1998. Report Year 1998 totals are for Original Industries only-- manufacturing facilities with primary Standard Industrial Classification codes 20-39.



## **OUTREACH SERVICES**

### **Community Right-to-Know**

For 14 years, the DEQ's SARA Title III Program has served the public by providing access to information about hazardous and toxic chemicals in their communities. SARA Title III is the Emergency Planning and Community Right-to-Know Act passed by Congress in 1986. This federal law established a comprehensive framework for local

chemical emergency planning and it put strong emphasis on the citizens' right to know about hazardous and toxic chemicals in their communities. The program works closely with the Michigan Department of State Police Emergency Management Division, which is responsible for ensuring local governments have plans in place to respond to chemical emergencies.

Throughout the year, the SARA Title III Program has worked with stakeholders to ensure that citizens have access to information about hazardous and toxic chemicals in their communities. Specifically, the SARA Title III Program makes available information about the storage of hazardous chemicals and releases of toxic chemicals. The program publishes an annual Toxic Chemical Release Inventory (TRI) data summary and a TRI data staff analysis. These publications are based on information the DEQ receives from Michigan facilities that manufacture, process, or otherwise use any of the more than 650 toxic chemicals and chemical compounds listed in Section 313 of SARA Title III. These reports provide the public with information on the amounts of releases of these listed chemicals and quantities managed as waste by Michigan businesses and institutions. The reports also provide information on industry's efforts to prevent the generation of waste at the source and reduce direct releases to the environment through other methods. The federal Pollution Prevention Act (PPA) of 1990 requires facilities to report, on the TRI form, information on source reduction and recycling activities, including methods used for identifying source reduction opportunities. The TRI data summary and staff analysis are the only environmental reports that contain information on the release, transfer, and import of toxic chemicals in our communities.

As a further enhancement to DEQ efforts to make environmental information accessible to the public, the SARA Title III Program has implemented an outreach program using kiosks. The kiosk is a stand-alone computer set up in a public location for the citizens to access information on chemical hazards, DEQ environmental regulations, and information about their community.

[www.deq.state.mi.us/ead/sara](http://www.deq.state.mi.us/ead/sara)

## **Community Environmental Awareness Project (CEAP)**

In fiscal year 2000, the Department continued work on the Community Environmental Awareness Project (CEAP). CEAP is a project to improve public access to information on the environmental performance of major industrial facilities to citizens living in the vicinities of these plants. The project is focusing on three specific facilities: the DaimlerChrysler Corporation Sterling Heights Assembly Plant, the Ford Motor Company Wixom Assembly Plant, and the General Motors Corporation Hamtramck Assembly Plant.

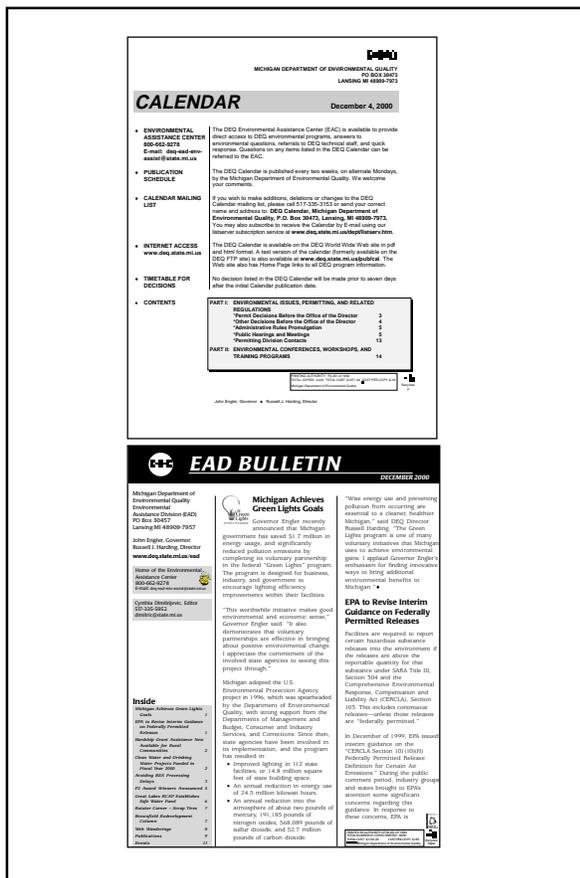
Although, the primary focus of the project is to provide the public detailed information about these facilities environmental performance and compliance history with federal and state environmental laws, it also focuses on each facility's pollution prevention efforts. This information is provided in a format and context that is understandable and useful to citizens living near these facilities.

Because environment regulations and a facility's performance are dynamic and subject to change, the department is using the Internet as the principal communication method. Recognizing that not all citizens have Internet access, kiosks are being installed in public places near the plants profiled in this project. The kiosks are stand alone computer displays connected to the Department's Internet web site.

Information on the Community Environmental Awareness Project is available at the following web site and by contacting the Environmental Assistance Center.

[www.deq.state.mi.us/ead/ceap](http://www.deq.state.mi.us/ead/ceap)





## DEQ Calendar and EAD Bulletin

The *DEQ Calendar*, published biweekly, contains information on environmental issues such as permit decisions, meetings, and public hearings. The *DEQ Calendar* also includes information on environmental conferences, workshops, and training programs. It is produced and distributed biweekly to about 3,500 interested organizations and individuals.

[www.deq.state.mi.us/cal/](http://www.deq.state.mi.us/cal/)

The EAD produces a bimonthly newsletter entitled the *EAD Bulletin*, which is distributed to over 5,500 businesses, government and trade associations, academia, environmental interest organizations, and the public. The newsletter provides information on

legislative changes in environmental law, describes new pollution prevention programs, provides updates on new environmental customer services, previews new publications, and promotes training opportunities.

[www.deq.state.mi.us/ead/bulletin/](http://www.deq.state.mi.us/ead/bulletin/)

## Environmental Assistance Center

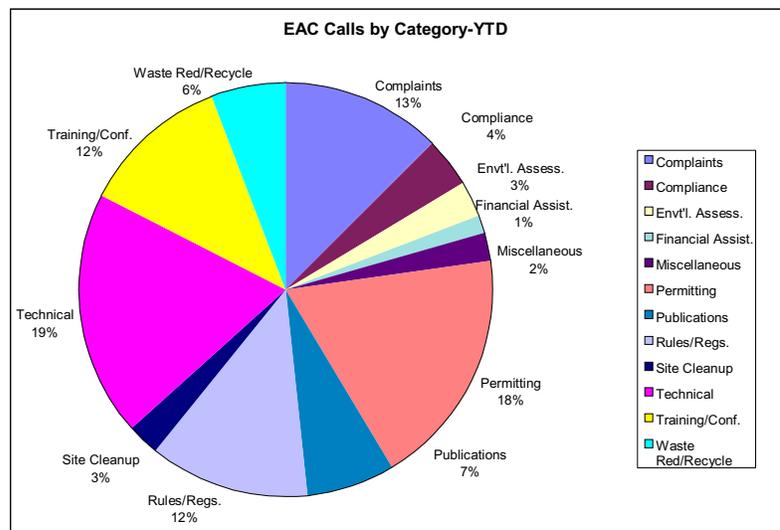
The Environmental Assistance Center (EAC) is a staffed phone call answering center that provides direct access to all DEQ environmental protection programs. The EAC serves Michigan businesses, municipalities, institutions, and the general public by answering questions directly, or referring callers to the proper divisions and persons who can provide the requested information. The EAC, which began operating in February 1995, also takes registrations for workshops and fills requests for publications.

Creation of the EAC grew out of discussions with DEQ stakeholders and the need for a single point of contact to all DEQ programs. The EAC is a commitment by the DEQ to provide responsive customer service for those seeking pollution prevention assistance or attempting to comply with or inquire about Michigan's environmental regulations and programs. Since its inception in 1995, calls to the EAC have increased substantially each year. The total number of calls received in fiscal years 1998 and 1999 were 31,761 and 43,183 respectively. Calls for fiscal year 2000 have increased to 45,426. The chart below depicts these calls by category of inquiry:

The EAC can be reached toll free by dialing 800-662-9278 or through e-mail at [deq-ead-env-assist@state.mi.us](mailto:deq-ead-env-assist@state.mi.us)



[www.deq.state.mi.us/ead/tasect/eac.html](http://www.deq.state.mi.us/ead/tasect/eac.html)





## Internet Sites

The department's Internet sites provide citizens, business, and local government quick access to information.

In fiscal 2000, the department received a Pollution Prevention Resource Exchange (P2Rx) grant to do extensive modifications to its P2 website. P2Rx is a network of regional P2 information centers established through US Environmental Protection Agency (USEPA) grants. The grants were provided to state agencies and institutions to coordinate delivery and access of P2 information to the public and other P2 service providers. Staff worked with the USEPA Region 5 P2Rx coordinator and stakeholders on the redesign project. The result is a comprehensive web site that provides seamless access to relevant P2 information and expertise within the region.

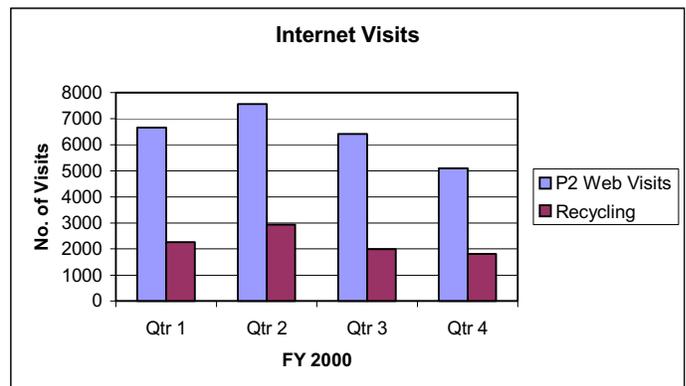
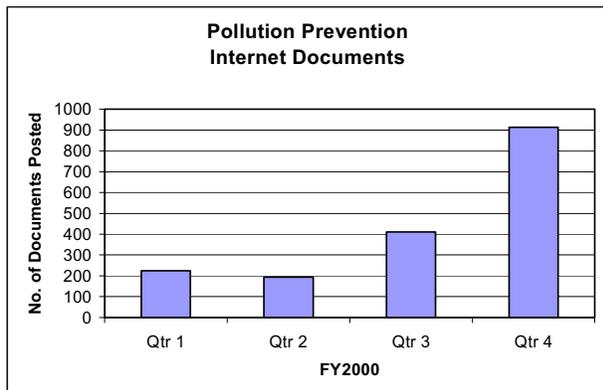
As part of the redesign work, staff created new web pages for the P2 program and

initiatives such as Metal Finishers P2 Initiative, the Small Business P2 Loan Program, P2 in the Food Industry, and Marina P2. Staff also revised the content of several other P2 web pages. Graph 1 shows the number of documents developed for the Internet in fiscal year 2000.

Graph 2 shows the number of visits to the department's pollution prevention and recycling web sites. The number of visits increased 16,234 from the previous year.

For more information on the P2 and P2Rx, visit the P2 website at:

[www.deq.state.mi.us/ead/p2sect/](http://www.deq.state.mi.us/ead/p2sect/)



*Pollution Prevention is the Best Solution*

## **Pollution Prevention Week**

### **National Pollution Prevention Week - September 18 - 24, 2000**

Pollution Prevention (P2) Week began in 1992 at the grassroots level in California and has since grown into a national event that is held annually, the third week of September. The Michigan Department of Environmental Quality (DEQ) Environmental Assistance Division (EAD) and Office of Communications and Education (OCE) use this week as an opportunity to increase P2 awareness across the state. For P2 Week 2000, Governor John Engler issued an Executive Declaration and the Senate and House of Representatives passed resolutions endorsing the importance of P2 as a preferred means for protecting the environment. EAD and OCE undertook a number of outreach activities to encourage businesses, industry, community leaders, public organizations and school children to reduce, reuse, and recycle waste in recognition of National P2 Week:

- 62,000 State employees received P2 Week notices in their paychecks;
- 8000 P2 Week Planners were distributed to businesses, industry, and public organizations;
- 900 P2 Week Posters were distributed to businesses, industry, and public organizations;
- 25 DEQ employees received certificates for participation in the P2 Week Employee Challenge organized by the OCE Environmental Education Coordinator;
- P2 presentations were made to local schools;
- Litter cleanup activities were conducted;
- A local television station presented P2 tips during the news;
- Three DEQ employees were recognized for their P2 integration efforts; and
- P2 and environmental education information was made available on the DEQ EAD and OCE websites.

P2 Week is an excellent time for everyone to consider new ways to prevent pollution at home, work, or within their community. For additional suggestions on what can be done to promote P2 throughout the year, check out the following websites:

[www.deq.state.mi.us/ead/p2sect/p2week](http://www.deq.state.mi.us/ead/p2sect/p2week)

[www.deq.state.mi.us/enved](http://www.deq.state.mi.us/enved)

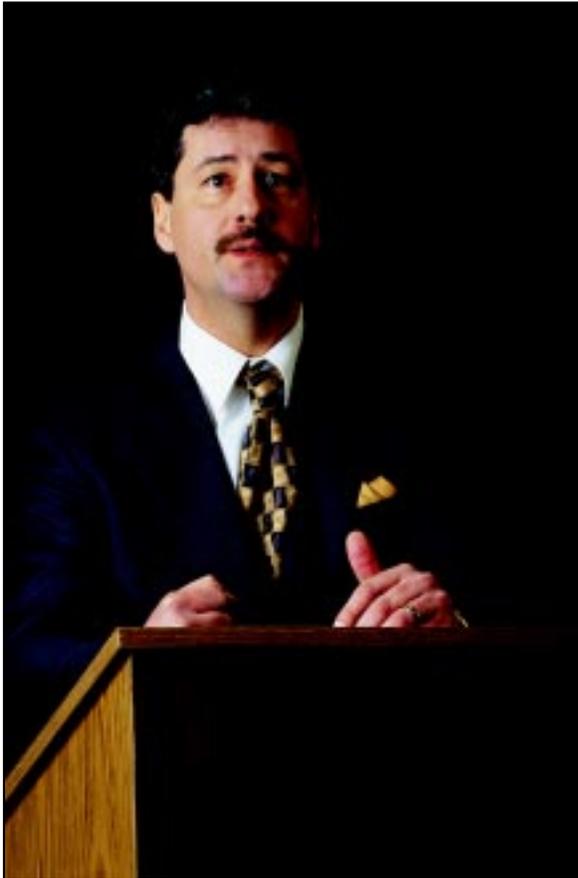
## **Pollution Prevention Week Planner**

September 18-24, 2000



*"Preventing Pollution is the Best Solution"*





## **Presentations and Events**

The EAD develops environmental education and training workshops that are customer-driven. Through planning committees and multi-organizational cosponsorships, EAD develops workshops that meet the environmental pollution prevention and compliance assistance needs of the target audiences. It also coordinates a speakers' bureau to respond to requests for presentations on EAD's P2 and compliance assistance programs.

In fiscal year 2000, over 1,100 people attended EAD-sponsored P2 workshops held throughout the state. In addition, the EAD incorporated P2 information into its other environmental workshops, attended by another 3,500 people. The EAD coordinated exhibits at 65 environmental events, promoting P2 programs and distributing P2 materials.

Other workshops held during the year included the following (not a complete listing of workshops held during the year):

- In October 1999 EAD conducted two workshops on waste reduction and energy efficiency in Michigan's Upper Peninsula. Nearly 120 attendees participated in the workshops covering the economics of pollution prevention, brownfield redevelopment, and tracks on energy efficiency, water quality, and waste reduction.
- On November 10, 1999, The Seventh Annual Great Lakes Region Waste Reduction and Energy Efficiency Workshop, was held. Over 450 participants chose from five concurrent tracks on the following, attended: automotive P2, manufacturing P2, community redevelopment, energy efficiency, and resources.
- On April 20, 2000, 69 people attended pollution prevention and environmental management system training for metal finishers. A P2 track highlighted P2 techniques for the electroplating industry and provided information on how to conduct a P2 assessment. The environmental management system (EMS) track was a hands-on step-by-step session on how metal finishers can develop an EMS.
- On June 5 and 6, 2000 EAD conducted a comprehensive SARA Title III Toxic Chemical Release Inventory (TRI) workshop with US EPA, to train persons preparing their annual TRI reports. Then on June 6, EAD hosted training on

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the PBT Profiler software, Internet-based screening to predict the persistence, bioconcentration potential, and fish chronic toxicity of discreet organic chemicals.

Fiscal year 2001 Plans include a number of P2 education and training projects. On November 9, 2000 EAD will conduct the Eighth Annual Great Lakes Region waste reduction and energy efficiency workshop. In January 2001, EAD will conduct training on SARA Title III Tier II. Additional sessions will be scheduled in the spring of 2001. EAD is also planning sessions on energy efficient motor systems. Pollution prevention training for printers is being developed as well.

# **POLLUTION PREVENTION ASSISTANCE PROGRAMS**

## **Field Staff Services**

In fiscal year 2000, EAD expanded its field operations program to six full-time staff located at the Detroit, Plainwell, Jackson, Saginaw Bay, Marquette, and Cadillac district offices. The map below indicates the geographic areas covered by each of the field staff.

The field staff works closely with public health agencies, district staff from other DEQ divisions, businesses and industry, local government, educational institutions, and trade associations to promote EAD's pollution prevention and assistance programs. The field staff is responsible for

implementing work plan tasks established under the Michigan Department of Environmental Quality/Local Health and Environmental Departments Pollution Prevention Partnership. The field staff also is responsible for integrating pollution prevention into regulatory programs at the district office level.

The deployment of EAD field staff furthers the department's goal of building pollution prevention capacity to meet local needs. Since their introduction three years ago, the field staff have focused on:

- establishing good working relationships with the local health and environmental departments;
- developing a marina pollution prevention program;
- promoting pollution prevention programs at the local level to groups that were unaware of pollution prevention and its benefits;
- working closely with industry to help them solve their waste reduction and recycling problems;
- becoming active participants in local environmental groups such as the West Michigan Sustainable Business Forum and the Detroit River Remedial Action Plan Team;
- creating useful P2 fact sheets and materials that relate to the needs of local health and environmental departments; and
- providing assistance to public and nonprofit agencies to develop projects and submit applications for funding under the Clean Michigan Initiative Regional Grant Program.

In fiscal year 2001, EAD will add three field staff positions in Shiawassee, Grand Rapids, and Livonia district offices.

### Field Services 2000 Activity Highlights

- The EAD Jackson District Office field staff representative accompanied DEQ regulatory division field staff on 47 compliance inspections to personally help companies with waste reduction issues or to promote EAD programs that would benefit the company. The companies have reacted quite positively to this on-site assistance. Staff is working to expand this regulatory integration approach with increased on-site visits by encouraging additional regulatory staff to participate in this effort.
- The EAD Plainwell/Grand Rapids District Office field staff planned, sponsored and executed Local Environmental Health Department/MDEQ workshops in the Plainwell and Grand Rapids areas. The goal of the workshops was to re-establish the network and cooperation between the local health departments in both districts and the DEQ district regulatory staff. The workshops were well received. Staff has developed a partnership with the City of Grand Rapids to explore P2 opportunities and possible monetary savings for the city.
- The EAD Marquette District Office field staff position was established in January of 2000 and the field staff was in place in the district office in February of 2000. The EAD Upper Peninsula field staff representative authored several articles covering subjects such as the P2 Regional Grant Program, Small Business P2 Loan Program and general EAD resources. These articles were published in chamber of commerce, watershed, and recycling newsletters in the Upper Peninsula.
- The EAD Saginaw-Bay/Shiawassee District Office field staff representative developed the request for grant proposal (RFP) and contract management guidelines for the CMI P2 Regional Grant Program. The RFP was developed with input from a stakeholder group comprised of prospective grantees. Following the release of the RFP, field staff planned and conducted workshops throughout the state to inform prospective grant applicants of the requirements of the program. Staff also authored a Small-Scale Chemistry Case Study publication.
- The EAD Detroit/Southeast Michigan District Office field staff representative developed two new publications this year, which include *Tips to Protect Environment* and the "Boaters Pollution Prevention Poster." Staff also participated in the





development of two new department web sites, “Food Industry Pollution Prevention and Waste Reduction” and “Eco-friendly Boater.”

- Staff continued the partnership with the Macomb County Health Department on the implementation of the “Clean Marina Project,” which is a voluntary initiative that targets marinas and marine service facilities along Lake St. Clair and the Clinton River. Staff was also involved in the Shiawassee/Huron Rivers Headwaters Preservation Project. The project recently was selected to receive the 2000 Outstanding Planning Project for a plan award from the Michigan Society of Planning. The award was presented on October 20, 2000 at the Society’s annual conference.
- The EAD Cadillac District Office field staff representative sponsored a LEHD/ MDEQ network and cooperation building workshop that was well attended and

well received by the health departments in the district. Staff worked with the wood stove trade association on “Project Hearth” to promote wood burning stove swaps of older, inefficient burning wood stoves for newer, more efficient and less polluting stoves.

[www.deq.state.mi.us/ead/p2sect/lhed/staff.html](http://www.deq.state.mi.us/ead/p2sect/lhed/staff.html)

## **Michigan Material Exchange Service**

The Environmental Assistance Division began piloting a material exchange program for businesses in fiscal year 1997. The program provides Michigan businesses with an opportunity to exchange unwanted materials with potential users through the Internet. EAD is currently using the following Internet-based exchange services: Recycler's World, the Ohio Materials Exchange, and the Indiana Materials Exchange.

The Michigan Materials Exchange Service was designed to provide Michigan businesses an opportunity to exchange surplus and reusable materials. Not all businesses are comfortable with or have easy access to the Internet. By providing this service, materials that may otherwise be disposed can find a useful life elsewhere. The service operates as follows: information regarding the material(s) to be listed through the service is obtained from the generator. This information is then posted on the above exchanges with EAD being the contact, not intermediary, for the exchange. When a party is interested in the material(s), the generator is notified by EAD and provided contact information. At that point, the EAD is no longer involved. Staff also assists in locating materials that may be available on these on-line services.

In fiscal year 2000, the department received over 70 requests for information on materials listed through the service. Staff was instrumental in coordinating nine material exchanges and posting of four new materials on the exchange. There have been numerous inquiries regarding the procedure for using Internet exchanges. This increased interest by businesses has allowed EAD to educate generators with access to the Internet, to use materials exchanges independently. A web site has been developed and is being continually expanded to provide information to Michigan generators of the many exchange options that exist. ([www.deq.state.mi.us/ead/recycle/miex.html](http://www.deq.state.mi.us/ead/recycle/miex.html)). A reuse website has also been created at [www.deq.state.mi.us/ead/reuse.html](http://www.deq.state.mi.us/ead/reuse.html).





## Recycling Initiatives

Pollution prevention follows a simple formula of reduce, reuse, and recycle that has been encouraged for decades. The hierarchy remains effective. First priority should always be reduction at the source followed by reuse. However, recycling continues to be a popular activity from the largest Michigan corporation down to the smallest community. Using web sites, workshops, publications, and technical assistance, staff continues to provide resources to facilitate the recycling of waste materials.

During the fiscal year, staff answered over 300 inquires for recycling assistance. Requests ranged from how-to-establish a recycling program, available recycling markets for waste materials, and information on specification for recycling materials. Staff also provided assistance with finding recycled products to comply with corporate and government recycling purchasing requirements.

The EAD continues to publish two directories listing businesses that either recycle material or make recycled products. Below are summaries of these publications:

**The Recycled Materials Market Directory (RMMD)** is a tool developed over seven years ago to help Michigan businesses and communities find markets for recyclable waste. It lists over 350 companies and has proven to be helpful to the regulated community and local recycling organizations. This type of directory is published by most states and is a valuable tool for promoting pollution prevention. This directory went on-line in late 1997.

**The Recycled Products Directory (RPD)** is a directory listing over 150 Michigan companies that manufacture recycled products. It is important for the state to strengthen the infrastructure of recycling as part of its commitment to promoting pollution prevention. This directory provides a focus on buy-recycled efforts and helps stabilize recycling in the state. The RPD is useful to purchasers who sometimes are mandated to buy recycled products and to Michigan businesses wanting to promote the use and availability of recycled products. This directory went on-line in fiscal year 2000.

In addition to offering these excellent resources to the Michigan business community, DEQ partnered with the Michigan Recycling Coalition (MRC) to organize an Annual Recycling Conference/Business Recycling Expo for 2000. This event was subsequently combined with the MRC's annual conference. The Coalition continues to include business-recycling aspects to its annual conference with the assistance of DEQ staff. This has resulted in a greater audience of businesses and communities being exposed to the purchasing and manufacturing components that are vital to successful recycling efforts.

## CLEAN MICHIGAN INITIATIVE PROGRAMS

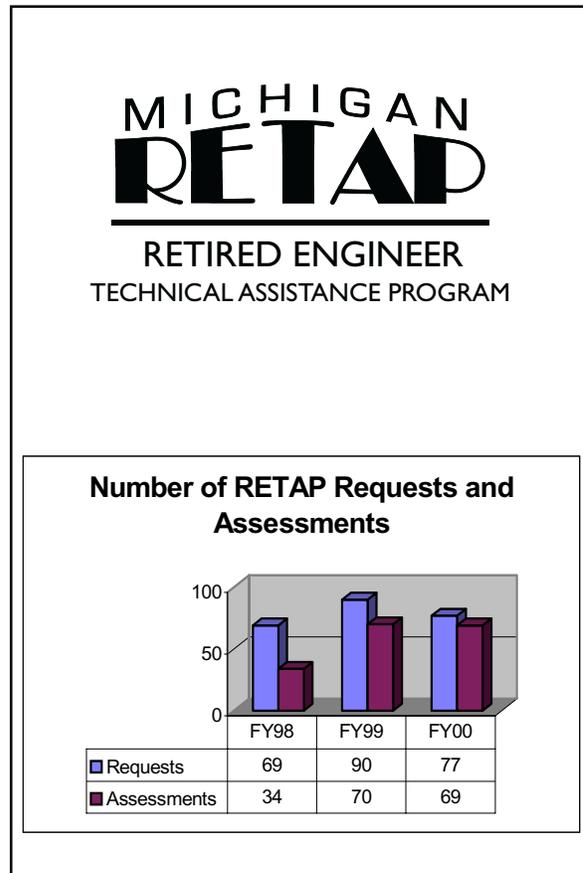
### Retired Engineer Technical Assistance Program (RETAP)

The Michigan Retired Engineer Technical Assistance Program (RETAP) is a voluntary program that provides confidential, nonregulatory, on-site pollution prevention assessments to Michigan's small and medium-sized businesses and institutions of any size. The assessments are designed to identify pollution prevention opportunities that reduce waste management costs by evaluating process efficiency. Since the program began in 1994, the department has conducted over 280 assessments. The program is operated through a technical assistance contract, which enlists the services of over 40 retired professionals with an average of 35 years industrial experience.

In 1999, the RETAP was established as a permanent program with funding provided by the Clean Michigan Initiative (CMI).

In fiscal year 2000:

- The RETAP contractor received 77 requests for P2 assistance and conducted 69 on-site assessments
- The program surveyed assessed facilities to determine average savings. The results indicate that implementation of RETAP recommendations yield savings on the average of \$145,000 annually.
- The EAD explored new approaches to inform eligible businesses about the opportunity to receive a RETAP assessment, including working with Wayne County on development of a professional outreach campaign. RETAP is also working closely with the Small Business Pollution Prevention Loan Program to encourage businesses to take advantage of both programs.
- There were three training workshops conducted during the year for RETAP professionals that focused on P2 opportunities for the metal finishing and automobile service industries.
- The department developed bid documents for a new technical assistance and training contract. The technical assistance contract was posted in August 2000 and the department expects to award the contract by the end of year. The new contract will focus on expanding the current level of RETAP services including the number of assessments conducted annually. A second contract, focused on training, will be posted in



**Examples of Facilities Assisted by  
RETAP and Annual Cost Savings  
Reported**

*Auto Mirrors* - \$10,800  
*Corrugated Boxes* - \$32,000  
*Electricity* - \$60,400  
*Floor Finishing* - \$3,000  
*Hotel* - \$21,000  
*Injection Molding* - \$277,000  
*Paints* - \$950,000  
*Paper Manufacturing* - \$400,000  
*Pharmacy* - \$1,636  
*Printing* - \$43,186  
*Rubber Products* - \$100,000  
*Steel Products* - \$75,000

[www.deq.state.mi.us/ead/retap](http://www.deq.state.mi.us/ead/retap)

April 2001. The purpose of the training contract is to ensure that RETAP professionals receive comprehensive training on practical P2 technologies and methods. This will also ensure that each assessment is high quality, clear, and consistent.

The chart at the bottom of the previous page shows the number of requests received and assessments conducted for each of the last three fiscal years. The chart depicts the trend that more requests are leading to actual assessments than when the program first began.

A goal of the program is to reach 100 assessments in fiscal year 2001 and 150 assessments in the years 2002 and 2003.

## Small Business Pollution Prevention Loan Program

On November 3, 1998, Michigan voters approved the Clean Michigan Initiative that included \$5 million for a Small Business Pollution Prevention Loan Program (P2 Loan Program). Subsequent legislation, under Part 145 of Act 451, as amended, called for the DEQ to develop and administer this program. Administrative Rules for the program became effective January 5, 2000. The P2 Loan Program offers loans at an interest rate of 5 percent or less to small businesses. The program's low-interest loans are designed to help reduce financial barriers typically encountered by small businesses interested in implementing P2 improvements.

P2 loans are available to any business that is independently owned and operated, is not dominant in its field, and employs 100 or fewer individuals. The loans must be used to implement a project that eliminates or reduces waste through pollution prevention. The small business can apply for a loan from the lending institution of their choice. The lender evaluates the credit-worthiness of the borrower and participates in the loan with the Michigan Department of Environmental Quality (MDEQ). Loans are designed so that one-half the loan amount will come from the lender's resources and one-half from the P2 Loan Fund. Small businesses may apply for loans of up to \$100,000 dollars. The EAD is responsible for reviewing the pollution prevention project applications for eligibility.

The P2 Loan Program is available to finance either P2 recommendations provided in a RETAP audit or for qualifying P2 projects proposed and submitted by the small business. The project must directly result in reduction of environmental waste generated at the site of the applicant's facility. Types of projects that may be funded include:

- equipment or technology modifications;
- process or procedure modifications;
- redesign of products and substitution of raw materials;
- improvement in housekeeping, maintenance, training, or inventory control; and
- energy and water conservation projects.

On January 5, 2000, the P2 Loan Program rules took effect. Since January, seven P2 Project Eligibility Applications have been received covering agriculture, automotive, metal finishing, and medical professional business sectors. Approved projects so far include reverse osmosis equipment for a metal finisher and an in-vessel composter for a farmer. Additional program efforts for this past fiscal year have included the



[www.deq.state.mi.us/ead/p2sect/p2loan](http://www.deq.state.mi.us/ead/p2sect/p2loan)



The flyer features a yellow background with a blue border. At the top left is a yellow swirl logo. The title "Small Business Pollution Prevention Loans" is in blue and black text. Below the title, it says "... at 5% Interest or Less". The main text reads "Introducing the Michigan Small Business Pollution Prevention Loan Program for:". A list of four categories follows, each with a yellow gear icon: "Equipment", "Process Improvements", "Water Conservation", and "Energy Studies and Specifications". At the bottom left is a small globe icon and the names "John Engler, Governor" and "Russell J. Harding, Director" of the Michigan Department of Environmental Quality. The DEQ logo is at the bottom right.

development of policies, procedures, and new program fact sheets. Next year's focus will include a larger marketing component to increase awareness of the program by small businesses and lending institutions. As projects get underway, case studies will be developed to further increase awareness of the successful pollution reduction and cost savings that can be achieved through implementing P2.

## **GRANT ASSISTANCE PROGRAMS**

### **Michigan Household Hazardous Waste Collection Initiative**

One million dollars for the Clean Michigan Initiative is being used to fund a grant program for communities to set up household hazardous waste collection programs. In 1998, it was estimated that only half of Michigan's population had access to such programs. With every household generating approximately 20 pounds of hazardous waste annually, this illustrated a need to establish more programs for Michigan residents. In fiscal year 2000, a stakeholder group assisted DEQ in developing a grant program that would address the needs of under-served communities. With this group's assistance, a two-cycle approach was developed. The first cycle solicited applications from June through August 2000 for those communities ready to use funding quickly. Following the grant announcement, the DEQ offered workshops throughout the state to clarify grant application requirements and address questions from potential applicants. A second cycle is planned in early calendar year 2001 to allow other communities time to form regional partnerships to qualify for funding. At the end of fiscal year 2000, applications were being reviewed from the first cycle of funding. It is anticipated that grants will be announced in December of 2000 with the expectation that programs would begin by April 2001.

### **Regional Pollution Prevention Grant Programs**

The DEQ established a one million dollar program to provide matching funds to public and private sector organizations to fund regional pollution prevention projects that result in measurable reductions in the generation of waste. Michigan has been active in national and international agreements and programs that encourage voluntary commitments to reduce the use, generation, and release of toxic substances. Grants under this program were to be targeted to regions of the state with environmentally sensitive natural resources, and for critical waters such as Lake Superior and Lake St. Clair.

During fiscal year 2000, a stakeholder group assisted the DEQ in developing a request for grant proposals (RFP) that would meet the needs of the communities with sensitive natural resources. The RFP was released on June 1, 2000, and by the August 15, 2000 due date, 22 proposals had been submitted. It is anticipated that grants will be announced in December 2000 with the expectation that the projects will start by April 2000.

[www.deq.state.mi.us/ead/cmigrant/](http://www.deq.state.mi.us/ead/cmigrant/)





[www.deq.state.mi.us/ead/p2sect/agp2/](http://www.deq.state.mi.us/ead/p2sect/agp2/)

**The 2000 Saginaw Bay WIN, AgP2 projects selected for funding include:**

- **the Innovative Farmers of Huron County field test soy-based 2-cycle engine oil project**
- **the local provenance encouragement (native plants), Phase II**
- **the Saginaw Bay Watershed Initiative Chemical Collection (Clean Sweep facility)**
- **Michigan Agriculture Stewardship Association, Manure Management Demonstration Tour**
- **Filter Strip Education Program**

## **POLLUTION PREVENTION PARTNERSHIP PROGRAMS**

### **Agricultural Pollution Prevention (AgP2) Project**

The Agricultural Pollution Prevention (AgP2) Project is a partnership of the DEQ and the Michigan Department of Agriculture (MDA) to promote pollution prevention solutions to environmental issues associated with the agriculture industry.

The AgP2 activities are guided by the Michigan Agricultural Pollution Prevention Strategy, building on current programs and improving coordination among the public agencies that offer environmental services to farmers and suppliers. The DEQ works closely with agricultural P2 service providers including MDA, Michigan State University-Extension, Michigan Farm Bureau, Natural Resources Conservation Service, Michigan Agri-Business Association, and the Commodity organizations.

Some of EAD's AgP2 fiscal year 2000 achievements include the following:

- Developed and distributed the *Agricultural Pollution Prevention Directory*.
- Worked with farmers to write eight Agricultural Pollution Prevention Producer case studies.
- Partnered with MDA to implement the Mercury Manometer (vacuum gauges) reduction effort for Michigan Dairy farms.
- Funded the Innovative Farmers of South Central Michigan to demonstrate a Precision Farming Research Project, which examines the application of agricultural global positioning systems (GPS) and variable rate technologies.
- Funded eleven AgP2 field demonstrations through the Michigan Agricultural Stewardship Association.
- Partnered with MSU-Extension to aid in the formation of the new Custom Manure Applicators Association.
- Cochaired the Saginaw Bay Watershed Initiative Network (WIN), AgP2 Task Group.

The DEQ and MDA continue to provide support on the development of the Michigan Agricultural Environmental Assurance Program (MAEAP). This program recognizes and provides incentives for producers who are engaging in cost effective pollution prevention and are in compliance with environmental regulations. A Comprehensive Nutrient Management Plan (CNMP) was developed as the initial core component demonstrating P2 and best management practices. The MAEAP program is scheduled for implementation in winter 2001. The program will consist of a Producer Educational Session, Development of an Action Plan, and On-farm Verification.

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## Clean Corporate Citizen (C3) Program

The Clean Corporate Citizen (C3) program has grown significantly this past year. The new administrative rules package went into effect March 24, 2000, which strengthened and expanded the program. The environmental compliance criteria were tightened to ensure that only the most qualified applicants achieved C3 status. In addition, regulatory benefits were expanded to include the surface water and groundwater permitting programs. The growth and success of the C3 program demonstrates that a comprehensive environmental protection program benefits the community and makes good business sense. To obtain a C3 designation applicant facilities must demonstrate performance in three main areas:

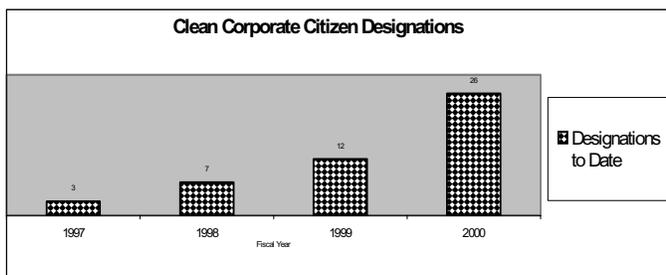
- a strong and effective Environmental Management System (EMS);
- a pollution prevention program that includes identification of pollution prevention opportunities, established goals, accomplishments, and participation in information exchange; and
- consistent compliance with applicable environmental requirements.

Companies, industries, institutions, and local units of government qualify to apply for a facility-specific C3 designation. There are currently 26 facilities that have achieved C3 designation and several more that have applications in the works.

During FY 2000, in conjunction with the C3 program, EAD has published a manual to assist small and medium-sized businesses and organizations in developing an Environmental Management System (EMS) for their facility. The manual is designed in a user-friendly workbook format. It is modeled from International Organization for Standardization (ISO) 14001 Environmental Standards and is consistent with the EMS requirements of the C3 program.

Environmental Management Systems are being developed worldwide to improve stewardship, foster cost savings, and improve environmental performance and compliance. The EMS is a key component of the facility-specific C3 program, but can also act as a stand-alone management tool independent from the C3 program.

To order the manual, use the order blank located on the Clean Corporate Citizen section of the EAD web site. A companion piece to the manual, *A Step By Step Guide*, is also available on the web site or by contacting the Environmental Assistance Center at 800-662-9278.



**CLEAN CORPORATE CITIZEN PROGRAM**

[www.deq.state.mi.us/ead/tasect/c3review.html](http://www.deq.state.mi.us/ead/tasect/c3review.html)

**“Working in cooperation with the Department of Environmental Quality to achieve our environmental goals is indeed gratifying. It is our hope that the environmental community will partner with industry and the DEQ to promote this positive program. We encourage other Michigan facilities to work on attaining this status.”**

**Ron Howard, Plant Manager  
Stone Container Corporation - Ontonagon Mill**



[www.deq.state.mi.us/ead/p2sect/dod/](http://www.deq.state.mi.us/ead/p2sect/dod/)

## **Department of Defense/State of Michigan Pollution Prevention Alliance**

The Department of Defense Pollution Prevention Alliance (DOD P2 Alliance), established in FY99, is one of EAD's newest P2 partnerships. The alliance consists of representatives from the Department of Defense (DOD) National Guard, Army, and Air Force reserve bases, armories, special divisions, Region 5 DOD and U.S. EPA representatives, and the Environmental Assistance Division. The purpose of the DOD P2 Alliance is to facilitate pollution prevention information and technology exchange in order to leverage resources among the military facilities located in Michigan. The alliance is modeled after similar partnerships in other states. It is the result of top DOD leadership seeking partnerships with states on environmental matters and targeting pollution prevention at military facilities.

### **Goals of the DOD/State of Michigan P2 Alliance**

- Integrate pollution prevention into all aspects of the mission and decision making process to maintain or surpass regulatory requirements.
- Share information and resources to provide cost-effective solutions and promote networking relationships.
- Promote open dialogue and the exchange of expertise between the regulatory community and military-related activities through a commitment to alliance participation.
- Join together in common initiatives to save resources and achieve common goals while eliminating duplication of efforts.
- Be a good neighbor by communicating results and lessons learned to other agencies and the community.

The DOD P2 Alliance holds quarterly meetings at various base sites throughout the state. Site tours are routinely conducted at these facilities, providing valuable insight for alliance contacts on waste management techniques. This process helps fulfill the "information sharing" goal of the alliance.

Topics for future DOD P2 Alliance meetings continue to expand, with efforts aimed at waste management, regulatory interface issues, and pollution prevention "idea sharing."

## Environmentally Preferred Purchasing

The Environmental Assistance Division in cooperation with the Department of Management and Budget have taken the initiative to work towards developing a statewide program to improve the environmental purchasing of our state governmental departments. Environmentally Preferred Purchasing (EPP) reduces the amount of toxic and undesirable chemicals purchased while increasing the use of recycled materials in purchased products. EPP builds on the P2 success of other statewide programs, such as Green Lights and recycling, and takes another step towards improved pollution prevention practices within our state system.

Goals of the Michigan EPP program are to:

- Integrate more P2 considerations into products purchased by the state;
- Eliminate barriers in procedure language to allow purchase of environmentally preferred products;
- Include in contract language EPP considerations for bidding purposes;
- Increase education to purchase green products;
- Safeguard health of product end users;
- Expand to provide information and assistance to the private sector; and
- Market our success in EPP.

### Green Lights Program

The DEQ has been the lead agency for the State of Michigan's Green Lights Program. Green Lights is a voluntary program developed by the U.S. EPA, aimed at reducing pollution from energy production caused by electrical lighting demands. All Green Lights participants sign a voluntary Memorandum of Understanding (MOU) with U.S. EPA, agreeing to survey their domestic facilities, upgrade their lighting (where profitable).

Michigan State Government has now completed its commitment under the Green Lights partnership with the U.S. EPA. Our final calculations show a total of 14,812,103<sup>1</sup> million square feet of state-maintained facilities upgraded. Dollars saved on state lighting upgrades amount to \$1,660,489 per year and upgrades have reduced the lighting load by 5,349 kilowatts, with an electricity reduction of 24,544,851-kilowatt hours. Michigan's lighting upgrades have also resulted in the reduction of the following pollutants due to less energy demand:

- Carbon dioxide 52,744,792 #/year
- Sulfur dioxide 568,089 #/year
- Nitrogen dioxide 191,185 #/year
- Mercury 2 #/year

<sup>1</sup> Note: Adjustments for the reported achievements were made to the square footage numbers to reflect U.S. EPA calculations. Changes in the emission calculations were made to coincide with the revised U.S. EPA calculation methods for the new ENERGY STAR program.

**“Environmentally preferable products” means products that have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product.**

[www.deq.state.mi.us/ead/p2sect/grlight.html](http://www.deq.state.mi.us/ead/p2sect/grlight.html)

**Michigan's environmental achievements in Green Lights are equivalent to the removal of 5,274 cars from US highways or the planting of 7,225 acres of trees in US forests. Each car removed is equivalent to preventing 10,000 pounds of carbon dioxide. Every acre of trees planted represents 7,300 pounds of carbon dioxide prevented.**



## Local Health Department Partnership

In April 1998, the Department of Environmental Quality (DEQ) and the Michigan Association for Local Public Health (MALPH) established a partnership that recognizes the important role local public health environmental departments (LHEDs) and environmental agencies play in promoting pollution prevention (P2). The mission of the partnership is to enhance and increase the practice of P2 in Michigan through cooperative and collaborative efforts that maximize the P2 services of all participating agencies.

A partnership work plan was developed as the result of recommendations made by a work group representing county environmental and public health departments, industry, environmental groups, MALPH, and the DEQ. In the two years that followed the work plan, most of the short-term and many of the long-term

objectives were completed. Partnership highlights for the year include:

- Environmental Assistance Division (EAD) field staff undertook a major outreach effort to provide LHEDs with information on P2 and the DEQ's environmental assistance programs. Staff distributed publications, regularly attended LHED staff meetings, made presentations on EAD services, and identified and responded to LHED information needs.
- Development and maintenance of a special Internet web site for all partnership activities and information (see above). The site contains news, training information, P2 resource information, and links to other environmental health-related Internet sites. In response to issues identified by the LHEDs, the EAD developed an Eco-Friendly Boating web site and a Food Industry P2 and Waste Reduction web site (see above)
- Field staff held DEQ-LHED coordination workshops for the Plainwell, Grand Rapids, and Cadillac districts. At the workshops, DEQ and LHED staff from within each district met for one day to discuss their programs, how to better communicate between the respective agencies, and common issues of importance to work on together. At the request of the public health departments, a follow-up workshop was held for the Plainwell office.
- The Macomb County Health Department completed a Marina P2 Program that targets the marinas and marine industries that affect the environment of Lake St.

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Clair. The program was funded with a grant from the DEQ. Thirty-five marinas and marine service facilities participated in the program, which culminated with an awards ceremony recognizing the accomplishments of seven of the participants.

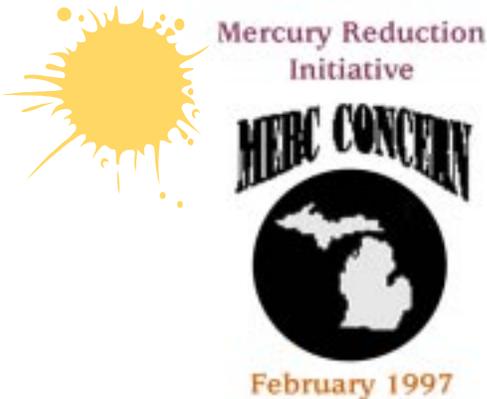
- The Southeast Michigan Environmental Health Directors attended a P2 regulatory integration training session held at General Motors Truck Assembly Plant in Pontiac. The training, which was well attended, included an overview of how to conduct a P2 opportunities assessment, and provided an opportunity to present information on the EAD's P2 programs.

In December 1999, the DEQ-LHED committee overseeing the partnership recommended developing a new two-year work plan that reflects the initial program achievements and the knowledge gained from the first two years of this effort. A revised work plan was developed by the DEQ and is under review by the DEQ-LHED partnership committee. The revised work plan provides guidance on continuing efforts to maximize P2 activities at the community level.

In fiscal year 2001, the EAD will focus on the implementation of the revised partnership work plan. Three field staff will be added, with the result that all nine DEQ district offices will have staff available to provide assistance in promoting P2 with local health departments.



[www.deq.state.mi.us/ead/p2sect/mercury/](http://www.deq.state.mi.us/ead/p2sect/mercury/)



**The year 2000 marked the successful completion of a three-year mercury P2 effort under an EPA grant, directed at fulfilling DEQ's obligations under the Michigan Mercury Pollution Prevention (M2P2) Task Force Report recommendations.**

## Mercury Reduction Initiative

The Year 2000 will most likely be remembered as the year of “Mercury Spills.” This past summer, several southeast Michigan school spill incidents occurred. These incidents resulted in expensive cleanups costing as much as \$250,000 and the closing of school facilities for days or in some cases weeks. EAD staff were asked to comment on proposed legislation which would phase out the use of mercury for teaching purposes in schools. As news about the dangers of mercury vapors continued to spread, the incidence of reporting and concerns relating to broken thermometers and other mercury spills occurring in homes, businesses, and industrial settings were also on the rise.

These events have created a wave of public interest in pollution prevention (P2) techniques, especially “safer” product substitutions. With heightened concern over mercury, the Mercury Reduction Initiative

(MRI) program set new records in responding to requests for mercury information. EAD responded by distributing a large variety of mercury brochures, pamphlets, and related (P2) information and by developing spill response guidance publications addressing both small and large mercury spills. A coordinating partnership was also established with the DEQ, Michigan Department of Community Health (MDCH), the United States Environmental Protection Agency (U.S. EPA), the Agency for Toxic Substance Control and Disease Registry (ATSDR), and Michigan Poison Control Centers, in order to ensure distribution of consistent, accurate, and reliable spill information.

In the fall, EAD hosted and cosponsored several significant mercury events. The first was a workshop for Detroit science teachers introducing a K-12 mercury curriculum package addressing the phasing out of mercury use in schools. Next, EAD sponsored a workshop for Michigan gas/electric utilities, steel mills, and large industrial complexes featuring the latest P2 techniques for mercury devices and alternatives, as well as successful partnerships and policies. The EAD also partnered with the Air Quality Division, Kalamazoo County, and the Automotive Recyclers of Michigan (ARM) to help establish and launch a voluntary statewide mercury switch removal campaign for auto salvage yards. By removing mercury from vehicles prior to shredding and scrap steel recycling, related mercury air discharges are subsequently eliminated.

EAD also worked closely in support of mercury fever thermometer exchanges in Ann Arbor, Oakland County, and within health departments located in the Upper Peninsula. Next year this role will expand.

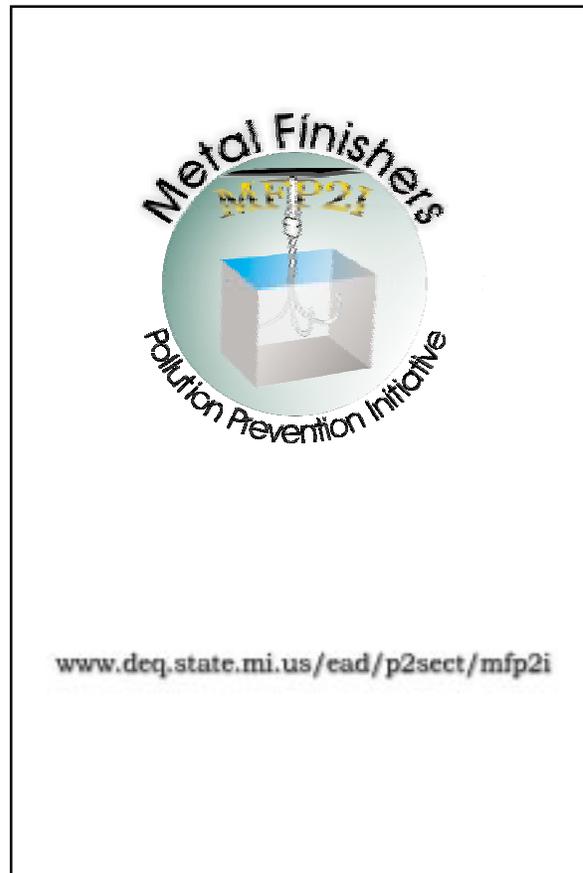
## **Metal Finishing Pollution Prevention Initiative (MFP2I)**

The Metal Finishers Pollution Prevention Initiative (MFP2I) is a voluntary stakeholder partnership that promotes pollution prevention through assistance, technology demonstration projects, and education outreach. Partners include the Michigan Association of Metal Finishers, the National Center for Manufacturing Sciences, the Michigan Manufacturing Technology Center, and the Michigan Water Environment Association.

Technical assistance is provided through a multi-tiered approach to technology transfer by publishing P2 case studies, preparing metal finishing P2 implementation tools, offering free RETAP assessments, as well as implementing demonstration projects. Demonstration projects link public institutions/nonprofit organizations and plating facilities to viable P2 technologies. Evaluation and performance data are used to encourage other facilities to implement the technology. MFP2I will be demonstrating several metal finishing P2 technologies during 2001. Financial assistance is provided through grants and the P2 Loan program.

In fiscal year 2000, the department, through a stakeholder process, accomplished the following MFP2I activities:

- Provided technical assistance to over 207 businesses.
- Through a stakeholder process, developed a P2 strategy document and implementation plan.
- Conducted quarterly stakeholder meetings to explore opportunities for technology demonstration projects.
- Conducted P2 training workshops for the metal finishing industry with support from the EPA and Michigan's metal finishing trade association.
- Developed P2 resources such as CD ROM software containing information on metal finishing technologies and practices, P2 fact sheets, an Internet web site, and an Internet-based searchable database, vendor information, and metal recycling.





[www.deq.state.mi.us/ead/p2sect/auto](http://www.deq.state.mi.us/ead/p2sect/auto)

**The mission of the Auto Project is to:**

- promote P2 throughout Michigan's auto manufacturing operations;
- concentrate on reduction in the use, generation, and release of persistent toxic substances and other materials of concern; and
- conduct these efforts in a manner that enhances environmental and competitive performance of the auto manufacturing industry.

**The Michigan Auto Project will release its first virtual Annual Progress Report in December 2000.**

## Michigan Automotive Project

The Michigan Automotive Pollution Prevention Project (Auto Project) is a voluntary pollution prevention and resource conservation partnership between DaimlerChrysler, Ford, General Motors (GM), and the Michigan Department of Environmental Quality. The partnership was formally announced with the signing of a project agreement on September 23, 1999.

The Michigan Auto Project builds on the success of the U.S. Auto Project, which concluded in 1998. The project is a commitment to reduce pollution during vehicle manufacturing and assembly. The focus of the partnership is the elimination of waste before it is created.

Pollution prevention is not a new concept for the auto companies. Since 1991, the auto companies have achieved a 50 percent reduction of EPA Toxic Release Inventory reportable releases on a vehicle-produced basis, and a 70 percent reduction in reportable releases of Great Lakes

Persistent Toxic Substances on a vehicle-produced basis. These reductions have been accomplished, in part, through process improvements, changes in material inputs, and recycling.

Each auto company has adopted management practices that elevate the importance and visibility of pollution prevention. For example, DaimlerChrysler released its corporate environmental report to share its objectives and accomplishments within the company and with the public. Ford has certified all its manufacturing facilities worldwide to ISO 14000 (an international standard for environmental management). GM has added environmental tools to its supplier development workshops to help cut costs by educating suppliers in pollution prevention.

The auto companies pledge to work together to advance pollution prevention within their organizations and with DEQ to promote pollution prevention to auto suppliers and to other industries in Michigan. Since the conclusion of the U.S. Auto Project the Auto Companies have developed 29 case studies that demonstrate the ongoing progress to integrate pollution prevention practices within the companies' operations and to transfer technology information to suppliers and others. The companies will continue to develop pollution prevention case studies and publish an annual report to include measurable results on reductions in the use, generation, and release of persistent toxic substances and other materials of concern.

## **The Michigan Business Pollution Prevention Partnership (MBP3)**

The Michigan Business Pollution Prevention Partnership (MBP3) is a voluntary, pollution prevention (P2) program open to all Michigan businesses. The program was created by Michigan businesses, trade associations, and the DEQ, as a means to publicly recognize Michigan businesses that commit to and undertake P2 activities at their facilities.

The MBP3 continues to attract a diverse range of businesses, associations, and municipal organizations as the third full year of registration comes to a close. By the end of the fiscal year there were 120 registered partners, which is a 19 percent increase over last year's membership. Seventy-eight partners submitted reports for calendar year 1999 as required by their MBP3 commitment. The companies have established impressive pollution prevention goals, which include reductions in air emissions, toxic substances and solid waste. According to the 1999 MBP3 Annual Report, 90 percent committed to reduce, 30 percent committed to reuse, and 75 percent committed to recycle at their business. Many partners committed to incorporate all three methods of pollution prevention into their operations.

Plans are underway to enhance program performance and encourage partners and perspective partners to utilize the Internet. The following represent some of the planned improvements to the program:

- Improve the MP3 partner web page, providing hotlinks to EAD publications and case studies, and to MBP3 partner home pages.
- Develop an on-line form section, to include both the registration form and the annual report form. This will allow current members as well as perspective members to simply log on to the MBP3 web site and fill out either form and submit with the click of a button. This will reduce the amount of paper being generated within the program and save the members time and money associated with filling out and mailing/faxing of these documents.
- Maintain and use an e-mail distribution list to update members about new publications, workshops, and other information related to pollution prevention.

**To participate in the MBP3, businesses must adopt a P2 policy, identify and commit to specific P2 goals, and provide an annual summary of their progress towards those goals. MBP3 partners are encouraged to share technological success stories on their P2 activities through developing case studies with the assistance of the DEQ. In addition, facilities that participate in the MBP3 meet the "P2 Program" criterion established under the Clean Corporate Citizen (C3) program.**



[www.deq.state.mi.us/ead/p2sect/mbp3](http://www.deq.state.mi.us/ead/p2sect/mbp3)



**During the past fiscal year the Project has accomplished the following:**

- **increased Great Printer membership by approximately 25 percent;**
- **began work on two case studies: the State of Michigan Printing and Graphics Services case study, “Preventing Pollution: A Conversion to Computer-to-Plate;” and “Cost Savings for a Small Printer: Target Information Management Implements Pollution Prevention Opportunities”;**
- **performed outreach to printers by visiting 12 print shops;**
- **provided outreach to Michigan printers on the Retired Engineers Technical Assistance Program (RETAP); 7 printers have participated in a free, confidential, nonregulatory pollution prevention assessment since March 1998.**

## **The Michigan Great Printers Project**

The Michigan Great Printers Project (MI-GPP) Project is a voluntary partnership between the Michigan Environmental Council, Michigan Department of Environmental Quality, and the Printing Industries of Michigan to promote pollution prevention as a standard practice for Michigan printers. Since the MI-GPP's formal announcement to printers in September 1996, over 140 Michigan printers have registered as Great Printers, and over 20 “customers” have committed to buying printed material from a Great Printer, whenever possible.

Printers select three goals from any of pre-press, press, or general P2 categories. Types of goals include converting to direct-to-plate technology, using low volatile organic compound inks, reducing or eliminating isopropyl alcohol, training employees on P2, increasing shop energy

efficiency, and implementing a comprehensive recycling program.

The following is a sample of Great Printers' P2 projects.

- Reduction or elimination of isopropyl alcohol use. This has been accomplished by changing the water system on their presses or fountain solution. New systems need very little water and therefore require no alcohol replacement. The investment cost \$3-4,000; however, the modification increases production and eliminates water use as well.
- Elimination of the need for film-processing units by installing direct-to-plate technology.
- Upgrades of silver recovery units to increase efficiency.
- Implementation of ink management techniques such as the use of anti-skinning sprays and minimum ink fountain fills. Recirculation chillers were installed on presses to minimize evaporation; computer controls used to minimize set-up and run spoilage.
- Participation in a recycling program for the plate process developer. The recycled developer is processed to recover the main ingredient and used to make a new product. It is estimated that 60-70 percent of the developer is reused.
- Conversion to low VOC ultraviolet curable inks and coatings for making product cartons and pressure sensitive labels. VOC content for these materials ranges from one percent to ten percent by weight.

[www.deq.state.mi.us/ead/p2sect/migpp](http://www.deq.state.mi.us/ead/p2sect/migpp)

## Michigan Pulp and Paper Pollution Prevention Program

The P5 is a partnership between the EAD and the Michigan Pulp and Paper Environmental Council (MPPEC), with participation open to all paper mills in the state. The overall goal of the P5 is environmental improvement in concert with continued economic growth and security. Each P5 member has an annual written commitment to pollution prevention and measurable P2 goals. Currently, fourteen member mills, representing 75 percent of the total paper production in the state, have committed to significant pollution reduction goals for 1997-2000 and beyond.

The P5 was the proud recipient of the National Pollution Prevention Roundtable's Most Valuable Pollution Prevention Award for 2000. The project was chosen for its innovation, measurable results, transferability, level of commitment from the parent organization, and the optimization of available resources. More information about this award can be found on the P5's web site.

The Fourth Annual Report of the P5 was published in November 2000 and is available on the P5 home page. The report summarizes the annual and long-term goals adopted collectively by the participating companies. It contains data on the pollution prevention accomplishments achieved in 1999 and commitments made for 2000.

[www.deq.state.mi.us/ead/p2sect/p5](http://www.deq.state.mi.us/ead/p2sect/p5)

Material	Goals	Achievement
Isopropanol Emissions	1 ton	1.3 tons
Water Use/Wastewater Discharge	600 Mgal	351 Mgal
Sewer Losses (TSS and Liquor)	1,879 Mgal	8,757 Mgal
Nutrient Discharge	7.4 tons	2.1 tons
Chlorine Use	1.5 tons	0 tons
Phosphoric Acid Use	0.75 tons	2.76 tons
Reduction of Aluminum in Sludge	0.5 units	0.85 units
Sludge Utilization	15,900 tons	18,168 tons

Material	Reduction Goals
Universal Waste Recycling	1 ton
Volatile Organic Compounds	9 tons
Water Use	125 Mgal
Solids (TSS) Loading	5,680 tons
Hazardous Materials	7.25 tons
PCB Transformers	5 units
Beneficial Paper Sludge Use	16,490 tons



**Pulp & Paper Pollution Prevention Program**

**Highlights from this past year include MPPEC developing and implementing a P2 study entitled "The Nonylphenol Ethoxylates (NPE) Pollution Prevention Project." MPPEC mills committed to reduce the use of NPE in the paper manufacturing process and to minimizing its discharge. The use of NPE became a focus as it biodegrades to nonylphenol (NP), a suspect endocrine disrupter. The study included wastewater sampling and substituting alternative materials to reduce NPE in their effluent.**



**An important part of the MTESP is to properly recognize golf courses for their environmental accomplishments, due to steady growth in the industry and the need to promote sound environmental practices. Michigan has more golf courses per capita than any other state and ranks first in the country in new course construction.**

[www.msue.msu.edu/stewardship/](http://www.msue.msu.edu/stewardship/)

## **The Michigan Turfgrass Environmental Stewardship Program (MTESP)**

Golf course interest and enthusiasm in the Michigan Turfgrass Environmental Stewardship Program (MTESP) continues to grow. Over 150 courses have joined the program and are actively increasing compliance and protection of Michigan's natural resources. The program is based on a partnership among Michigan State University, the turfgrass industry, environmental advocacy groups, the Michigan Department of Environmental Quality, and the Michigan Department of Agriculture. This year, the MTESP was selected to receive the Golf Course Superintendent's Association of America President's Environmental Leadership Award.

A sample of other accomplishments over the last year include:

- Four MTESP workshops were held across the state and several hundred golf course superintendents attended as a first step in the program. The MTESP workshops discuss specific laws, regulations, and best management practices for golf courses.
- Sixty of the 153 courses have completed the second and third steps in the program, including a self-assessment and site visit.
- Twenty-four of the 60 courses have met additional requirements including compliance with major rules and regulations and are completely certified in the program.
- A revised MTESP Highlights Video has been completed that provides an overview of the program and features program supporters, including Governor Engler and golf professional, Michelle McGann.
- The MTESP was selected to participate and set up a display in an Earth Day 2000 Celebration in Washington D.C.
- Educational tours were provided as an opportunity for golf courses to showcase some of the innovative ways they are managing their property to maximize environmental protection.

The scope of the program will be expanded in 2001 and will include management systems designed to maximize buffers along waterways and enhance wildlife habitat. The existing pollution prevention section will also be expanded to include information on waste management for shop areas, equipment washing stations and emergency response.

## **P2 Technical Assistance Providers Network (P2-TAPN)**

The P2-TAPN is a network of individuals and organizations that offer P2 information and technical assistance in the state of Michigan. The goal of the network is to strengthen the delivery of P2 services in the state by providing a communication link among members, and an easy to use access point for learning about and contacting member P2 providers for assistance.

Having made significant progress toward strengthening the delivery of pollution prevention services in Michigan, fiscal year 2000 was one of enhancing membership and sustaining an active customer base.

- The P2-TAPN membership increased to 100 registered P2 technical assistance providers. The searchable database, which describes in detail each member's services and where these services are provided, was maintained to accurately reflect the membership.
- The P2-TAPN web site, which includes the searchable database, hotlinks and information about the network, was heavily promoted (<http://www.mmtc.org/p2-tapn/>). The web site allows the business community to easily learn about the P2 services provided by the membership and serves as a tool for obtaining each member's contact information.
- An e-mail distribution list of over 200 P2 practitioners was used for assisting with technical assistance questions, distributing P2 resources, and highlighting upcoming P2 events and news of the membership.

In the upcoming year, the P2-TAPN will utilize the searchable database to identify and address gaps in the organization's services to better address the P2 needs of the Michigan business community. Efforts to expand the membership, enhance the searchable database, and improve marketing will be undertaken to ensure the network remains a valuable P2 resource to the business community for years to come.



APPENDIX A: Below is a table identifying the relationship of DEQ's Pollution Prevention Strategy to EAD fiscal year 2000 programs and initiatives. The table shows that many of DEQ's programs meet more than one of these objectives.

**Relationship of P2 Strategy Objectives to EAD P2 Program Initiatives**

<b>P2 Objectives</b>	<b>Build Awareness Through Education and Outreach</b>	<b>Develop Voluntary and Cooperative Approaches</b>	<b>Integrate P2 into Regulatory Programs</b>	<b>Remove Barriers and Create Incentives</b>	<b>Strengthen Delivery of Services</b>	<b>Facilitate P2 Practices and Technologies</b>	<b>Promote P2 in State and Local Govt. Agencies</b>	<b>Generate, Collect, and Analyze P2 Data</b>	<b>Identify, Obtain, and Use Grants and other Funding sources</b>	<b>Establish Communication and Feedback Mechanism for Strategy</b>
<b>P2 Programs</b>										
<b>Regulatory Integration</b>			*				*			
<b>P2 Week</b>	*						*			
<b>TRI Data</b>								*		
<b>Community Right to Know</b>	*							*		
<b>EAC</b>	*									
<b>Calendar &amp; Bulletin</b>	*									
<b>Presentations &amp; Events</b>	*					*				
<b>Field Staff</b>	*	*	*	*	*		*			
<b>Material Exchanges</b>						*				
<b>Recycling Initiatives</b>	*	*				*				
<b>RETAP</b>					*	*				
<b>Small Business Loan Program</b>	*	*		*		*			*	
<b>Technical Assistance</b>						*		*	*	
<b>Agricultural P2 Project</b>	*	*		*		*			*	*
<b>C3 Program</b>		*	*	*						

<b>DOD Alliance</b>	*	*			*	*				
<b>Green Lights</b>							*	*	*	
<b>Local Health Dept. Partnership</b>	*	*				*	*			*
<b>Mercury Reduction Initiative</b>	*	*			*	*	*			
<b>Metal Finishers P2 Initiative</b>	*	*		*		*				*
<b>Michigan Auto Project</b>	*	*		*	*	*				*
<b>MBP3</b>	*	*				*				*
<b>Michigan Great Printers Project</b>	*	*		*		*				*
<b>P5</b>		*		*		*				*
<b>Turf Grass P2 Program</b>	*	*				*				
<b>TAPN</b>	*				*	*			*	*

## **APPENDIX B: List of Partners and Stakeholders as of September 2000**

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**The Michigan Department of Environmental Quality, Environmental Assistance Division, would like to thank all the organizations and individuals who have assisted in the development and implementation of pollution prevention activities and initiatives during the fiscal year. Every attempt was made to include all participants. We apologize if we have inadvertently omitted any name.**

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### **Clean Corporate Citizen (C3) DESIGNEES:**



Baker Furniture, Holland (3<sup>rd</sup> year)  
Consumers Energy's J.R. Whiting Electric Generating Plant, Erie (3<sup>rd</sup> year)  
Consumers Energy's Parnell Road Complex, Jackson (2<sup>nd</sup> year)  
DaimlerChrysler Sterling Heights Assembly Plant (4<sup>th</sup> year)  
Delphi-E. Grand Rapids (4<sup>th</sup> year)  
Demmer Corporation Delta Plant, Delta Township (1<sup>st</sup> year)  
Denso Manufacturing, Battle Creek (2<sup>nd</sup> year)  
Detroit Edison/DTE Energy, Fermi 2 Power Plant, Newport (1<sup>st</sup> year)  
DeWitt Barrels, Inc., Grand Rapids (2<sup>nd</sup> year)  
Ford Motor Company, Automatic Transmission New Product Center, Livonia (1<sup>st</sup> year)  
Ford Motor Company, Romeo Engine Plant, Romeo (1<sup>st</sup> year)  
Ford Motor Company, Van Dyke Plant, Sterling Heights (4<sup>th</sup> year)  
General Motors Powertrain, Warren Transmission Plant, Warren (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Deward Metering Station, Frederic (1<sup>st</sup> year)  
Great Lakes Gas Transmission, St. Clair Metering Station, St. Clair (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Sault Ste Marie Metering Station, Sault Ste Marie (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Compressor Station #7, Wakefield (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Compressor Station #8, Crystal Falls (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Compressor Station #9, Rapid River (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Compressor Station #10, Naubinway (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Compressor Station #11, Boyne Falls (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Compressor Station #12, Farwell (1<sup>st</sup> year)  
Great Lakes Gas Transmission, Compressor Station # 13, Otisville (1<sup>st</sup> year)  
Knoll Incorporated, Grand Rapids (3<sup>rd</sup> year)  
Mark IV Automotive, Big Rapids (1<sup>st</sup> year)  
March Coatings Inc., Brighton (1<sup>st</sup> year)  
MichCon's Alpena Compressor Station, Harrison (1<sup>st</sup> year)  
NorthStar Print Group, Norway (1<sup>st</sup> year)  
SERMAcoat, L.L.C., Brighton (1<sup>st</sup> year)  
Smurfit-Stone Container, Ontonagon (2<sup>nd</sup> year)  
TAC Manufacturing, Jackson (2<sup>nd</sup> year)  
T.E.S. Filer City Station, Filer City (1<sup>st</sup> year)  
Visteon Automotive Systems, Chesterfield Trim Plant, Chesterfield (1<sup>st</sup> year)  
Visteon Automotive Systems, Sheldon Road Plant, Plymouth (2<sup>nd</sup> year)  
Visteon Automotive Systems, Utica Plant, Utica (1<sup>st</sup> year)  
Wisconsin Electric, Presque Isle Plant, Marquette (3<sup>rd</sup> year)

**Department of Defense Partners:**



Air Guard Base, Battle Creek  
Air Guard Base, Selfridge  
Air Guard Combat Readiness Training Center, Alpena  
Defense Logistics Information Services, Battle Creek  
Defense Reutilization and Marketing Operations, Selfridge  
Defense Reutilization and Marketing Services, Battle Creek  
Detroit Arsenal  
EPA Region 5  
Michigan Army National Guard (Department of Military Affairs)  
Tank Automotive Research Development and Engineering Center, Detroit  
U.S. Army Northern Regional Environmental Center  
U.S. Army Reserves

**Metal Finishers Pollution Prevention Initiative (MFP2I)  
Stakeholders:**



Allegan Metal Finishing Co.  
Allied Finishing, Inc.  
Apollo Plating, Inc.  
Benton Harbor-St. Joseph Wastewater Treatment Plant  
Curtis Metal Finishing  
Decc Co., Inc.  
Detroit Water and Sewer Department  
Diamond Chrome Plating, Inc.  
Electroplating Inc.  
Hi-Tech Coatings, Inc.  
Howard Plating Industries, Inc.  
K.C. Jones Plating Co.  
Lakeshore Electroplate, Inc.  
Lansing Plating Co.  
Lansing Water and Sewer Department  
Lorin Industries  
March Coatings  
Marsh Plating Corp.  
Masco Corporation  
Master Finish  
Meridian Automotive Systems  
Metal Finishing Consultant  
Michigan Association of Metal Finishers  
Michigan Manufactures Association  
Michigan United Conservation Club  
Midwest Plating Co.  
National Center for Manufacturing  
National Wildlife Federation  
Seyburn, Kahn, Ginn, Bess, Deitch & Serlin, P.C.  
Tawas Plating Co.

Valley Chrome Platers  
Wayne County Department of Public Services  
Wayne State University  
Wyoming Wastewater Treatment Plant  
Ypsilanti C.U.A

### **Michigan Automotive Project Participants:**



DaimlerChrysler Corporation  
Ford Motor Company  
General Motors Corporation

### **Michigan Business Pollution Prevention Program (MBP3) Partners:**



Aeroquip Corporation  
Alpha Plastics, Inc.  
American Electric Power-Nuclear Generation  
Amway Corporation  
ANR Pipeline Company  
Applied Environmental  
Associated Petroleum Industries of Michigan  
AutoAlliance International, Inc.  
Baker Furniture  
BASF Corporation, Wyandotte Site  
Bear Truss Company  
Behr Industries Corporation  
Belle Maer Harbor  
Betz Industries  
BLDI Environmental & Safety Management  
BP Amoco Company  
Brennan Marine Sales  
Brownrigg Companies, Ltd.  
Campbell & Company  
Capital City Associates  
Capitol Group Governmental Consultants  
Chemical Technologies, Inc.  
City of Wyoming - Clean Water Plant  
Coldwater Board of Public Utilities  
Colonial Press, Inc.  
Consumers Energy - Adrian Service Center  
Consumers Energy - BC Cobb Plant  
Consumers Energy - JH Campbell Complex  
Consumers Energy - JR Whiting Plant  
Consumers Energy - Parnall Rd. Office Complex  
Consumers Energy, J.C. Weadock Plant  
Crystal Flash  
Delphi Automotive Systems

***Pollution Prevention is the Best Solution***

Delta College  
Demmer Corporation - Delta Plant  
DENSO Manufacturing Michigan, Inc.  
Detroit Edison - Fermi 2 Plant  
Detroit Edison Company  
DeWitt Barrels  
Donnelly Corporation  
Douglas Cleaners  
Dow Corning Midland Plant  
DuPont Automotive, Mt. Clemens Site  
Eagle Ottawa - Rochester Hills, Ltd.  
Eagle Ottawa Leather Company (Grand Haven)  
East Jordan Iron Works  
Eco Waste Solutions, LLC  
Electrical Design and Control  
Elf Atochem North America, Inc.  
Envirologic Technologies, Inc.  
ESCO Company Limited Partnership  
Ford Motor Company - Automatic Transmission New Product Center  
Ford Motor Company - Livonia Transmission  
Foundry Association of Michigan  
Four Winns, Inc.  
General Motors - Pontiac East Assembly Plant  
General Motors Powertrain - Flint Components  
General Motors Powertrain - Saginaw Malleable Plant  
General Motors Powertrain - Warren Transmission  
General Oil Company, Inc.  
Genesys Health System  
Georgia-Pacific Corporation - Milan  
Grayling Generating Station  
Great Lakes Gas Transmission Company  
Harry Major Machine & Tool  
Haworth, Inc.  
Hazekamp Meats  
Hemlock Semiconductor  
Herman Miller, Inc.  
Huron, Inc.  
Inland Waters Pollution Control, Inc.  
International Foam and Trim  
Irwin Seating Company  
Jan's Professional Drycleaners  
Knoll Inc.  
Magni Industries, Inc.  
March Coatings, Inc.  
Marine Pollution Control Corporation  
Mark IV Automotive  
Mayco Plastics, Inc.  
McCormick Enterprises, Inc.  
Meridian Automotive Systems, Inc.

Michigan Boating Industries Association  
Michigan Chemical Council  
Michigan Consolidated Gas Company  
Michigan Institute of Laundering and Drycleaning  
Michigan Seat Company  
Mid-West Instrument  
MWP Inc. - Pleuco Technologies Division  
Parke-Davis  
Pharmacia & Upjohn, Inc.  
Pioneer Foundry Company, Inc.  
RMT  
Ronningen Research & Development Co.  
Sackner Products  
Saugatuck Yacht Service  
SERMAcoat, L.L.C.  
Siemens Automotive Corporation  
Solutia, Inc.  
Sorenson Paperboard Corporation  
Sparrow Health System  
SQS, Inc.  
Steelcase, Inc.  
Sunshine Prairie Farm  
T.E.S. Filer City Station  
TAC Manufacturing, Inc.  
Taplin Environmental Contracting Corporation  
Taylor Building Products  
The Traverse Group  
Tower Marine  
TriMedia Consultants  
United States Postal Service, Lansing Branch  
Universal Coating, Inc.  
Vico Products Company  
Visteon Automotive Systems - Sheldon Road Plant  
Wacker Silicones Corporation  
Wisconsin Electric Power - Presque Isle Plant  
Yamaha Musical Products

## **Michigan Great Printers Project:**



A & E Printers  
Action Printing  
Adair Printing  
Allegra Print & Imaging (5 locations)  
Alpha Graphics  
American Speedy Printing, Lake Orion  
Amerikal, Inc.  
Amway Corporation  
Aquila Printing

*Pollution Prevention is the Best Solution*

Arrow Swift  
ASAP Printing  
Book Concern Printers  
Braun-Brunfield, Inc.  
BRD Printing, Inc.  
Bryant Printing  
Business Cards Plus  
Business Imaging Group  
Champion Printing and Advertising  
Clarke American  
Classic Printing, Inc.  
Colonial Press, Inc.  
Copy Options, Inc.  
Copy Quick  
Corona Graphics, Inc.  
CPI Graphics  
Craft Press Printing  
Danielson Color Print  
Delta Printing Company, Inc.  
Dickinson Press  
Double Day Bros. & Company  
Eagle Printing  
Earle Press Printing  
Econo Print, Inc.  
Economy Printing Company  
Edwards Brothers, Inc.  
EPI Printers  
Etheridge Company, The  
Executive Printing Services  
Falcon Printing  
First Impression Printers  
Flashes Publishers, Inc.  
Flint Ink, Inc.  
F.P. Horak Company, The  
Fullserv, Inc.  
G-Graphics  
Gardner Printing  
Goetzcraft Printers  
Gonzalez Integrated Marketing, Inc.  
Grandville Printing  
Graphics 3, Inc.  
Graphic Enterprises, Inc.  
Hatteras Printing  
Holland Sentinel, The  
Howard Printing  
Huron Valley Printing & Imaging  
Ideal Printing Company  
Image Masters Precision Printing  
Impressions Printing Inc.  
Inco Graphics

Ingham County Printing Office  
International Minute Press, Farmington Hills  
International Minute Press, Ann Arbor  
International Minute Press, Portage  
IPC Communications Services  
JB Printing  
Jet Speed Printing Company  
JB Printing  
Jiffy Print, Inc.  
Jiffy Prints  
Job Shop Printers  
John Henry Company, The  
Keystone Printing, Inc.  
Kimcraft Printers  
Kinko's (4 locations)  
Lake Superior Press, Inc.  
Lansing Printing Company  
Lawson Printers, Inc.  
Litho-Tech Printing  
Logan Brothers  
LTI Printing  
Macomb Printing  
Malloy Lithography Inc.  
Mason Graphics  
McGrath-DeFoe Printing  
McKay Press  
McNaughton & Gunn, Inc.  
Michigan Education Data Network Association  
MICR Graphics/Billy the Printer  
Millbrook Printing  
Mitchell Graphics  
Myers Printing, Inc.  
Nelson Printing Enterprises  
North Star Print Group  
Paper Image Printing Center  
Parkman Printing, Inc.  
Petoskey News-Review  
Portage Printing  
Print Haus, Inc., The  
Print King, Inc.  
Print Shop, The  
Printery, The  
Printing Arts Company  
Printwell  
Progressive Graphics  
Reynolds & Reynolds  
Rosers Printing, Inc.  
Saginaw Bay Watershed Initiative  
Seeley's Printing Service  
Shelby Ink

Sir Speedy  
Sir Speedy Printing  
Spartan Printing  
Standard Printing & Office Supply  
State of Michigan, Print & Graphic Services  
Sterling Press  
Superior Business Solutions  
Superior Color Graphics  
T.C. Advertising - Printco Group  
Target Information Management  
TBF Graphics  
Thomson-Shore Inc.  
Townley Studio  
Tweddle Litho Company  
University Lithoprinters  
Utley Brothers, Inc.  
Valassis Comm., Inc.  
Webco Press - Mass Media  
West Colony Printing  
Wood Press Company

**Michigan Turfgrass Environmental Stewardship Program  
List of Golf Courses with Completed Site Visit:**



Alpena Golf Club  
Bay City C.C.  
Bedford Valley G.C.  
Birmingham C.C.  
Black Lake  
Canadian Lakes  
Crystal Downs C.C.  
Dearborn Hills G.C.  
Egypt Valley C.C.  
Elk Ridge G.C.  
Forest Akers G.C. - M.S.U.  
Forest Lake C.C.  
Fox Hills G.C.  
Franklin Hills C.C.  
Grand Traverse Resort  
Grosbeck G.C.  
Gull Lake C.C.  
Gull Lake View G.C.  
Gull Lake View Stonehedge  
Huron Meadows Metropark G.C.  
Hudson Mills Metropark G.C.  
Indian Springs Metropark G.C.  
Kalamazoo C.C.  
Kensington Metropark G.C.  
Lake Erie Metropark G.C.

Lockmoor Club  
Lost Lake Woods  
Lower Huron Metropark G.C.  
Maple Lane G.C.  
Marysville G.C.  
Metro Beach Metropark G.C.  
Milham Park  
Northbrook G.C.  
Oakland Hills C.C.  
Pierce Lake  
Railside G. C.  
Raisin River Golf Club  
Royal Scot  
Shanty Creek Resort  
Southgate G.C.  
Spring Lake C.C.  
St. Clair Shores C.C.  
St. Ives Golf Club  
Sylvan Glen G.C.  
The Garland Resort  
The Links at Whitmore Lake  
The Meadows Golf Club  
The Rock at Woodmoor  
Timber Ridge  
Traverse City C.C.  
Walnut Hills C.C.  
Warwick Hills C.C.  
Whispering Pines G.C.  
Whispering Willows G.C.  
Willow Metropark G.C.  
Wolverine Golf Club  
Wuskowhan Players Club

## **Pulp and Paper Pollution Prevention Program (P5):**



ABTco, Inc.  
Domtar  
Fletcher Paper  
Graphics Packaging, Inc.  
International Paper  
Manistique Papers  
Mead Corporation  
Menominee Paper Company  
Packaging Corporation of America  
Paperboard Division, Menasha Corporation  
Plainwell Papers  
Rock-Tenn Company  
SAPPI Fine Paper of North America  
Smurfit-Stone Container Corporation

## **APPENDIX C: List of Publications Related to P2 Revised or Created in Fiscal Year 2000**

### **1999 Pollution Prevention Annual Report**

[www.deq.state.mi.us/ead/pub/p2/99p2rept.pdf](http://www.deq.state.mi.us/ead/pub/p2/99p2rept.pdf)

### **1999 Pulp & Paper Pollution Prevention Program (P5) Annual Report**

[www.deq.state.mi.us/ead/p2sect/p5/99p5annrpt.pdf](http://www.deq.state.mi.us/ead/p2sect/p5/99p5annrpt.pdf)

### **Becoming A Great Printer (What, Who, Why, How, When)**

[www.deq.state.mi.us/ead/p2sect/migpp/gppbroc20.pdf](http://www.deq.state.mi.us/ead/p2sect/migpp/gppbroc20.pdf)

### **Building a Pond in Michigan**

[www.deq.state.mi.us/ead/pub/tas/pondlwmd.pdf](http://www.deq.state.mi.us/ead/pub/tas/pondlwmd.pdf)

### **Cherry Bay Orchards: Cherry Production in Michigan**

[www.deq.state.mi.us/ead/pub/casestudy/cherrybay.pdf](http://www.deq.state.mi.us/ead/pub/casestudy/cherrybay.pdf)

### **Clean Corporate Citizen Application Form**

[www.deq.state.mi.us/ead/tasect/c3/eqp3482.pdf](http://www.deq.state.mi.us/ead/tasect/c3/eqp3482.pdf)

### **Clean Corporate Citizen Renewal Form**

[www.deq.state.mi.us/ead/tasect/c3/eqp3471.pdf](http://www.deq.state.mi.us/ead/tasect/c3/eqp3471.pdf)

### **Cleaning up Small Mercury Spills**

[www.deq.state.mi.us/ead/pub/p2/mercspills.pdf](http://www.deq.state.mi.us/ead/pub/p2/mercspills.pdf)

### **Common Violations: Hazardous Waste & Used Oil**

[www.deq.state.mi.us/ead/tasect/wv](http://www.deq.state.mi.us/ead/tasect/wv)

### **Common Violations: Scrap Tires**

### **Dapco Industries: Small Town Company, Worldwide Quality**

[www.deq.state.mi.us/ead/pub/casestudy/dapco.pdf](http://www.deq.state.mi.us/ead/pub/casestudy/dapco.pdf)

### **Delta College: Small Scale Chemistry**

[www.deq.state.mi.us/ead/pub/casestudy/deltacoll.pdf](http://www.deq.state.mi.us/ead/pub/casestudy/deltacoll.pdf)

### **Eco-Friendly Boating**

[www.deq.state.mi.us/ead/pub/factsheet/boating.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/boating.pdf)

### **Environmental Management System - A Step-by-Step Guide**

[www.deq.state.mi.us/ead/pub/tas/emstepbystep.pdf](http://www.deq.state.mi.us/ead/pub/tas/emstepbystep.pdf)

### **Environmental Management System Guidance Manual**

[www.deq.state.mi.us/ead/pub/tas/eqp3473.pdf](http://www.deq.state.mi.us/ead/pub/tas/eqp3473.pdf) (order form only)

### **Environmental Permits**

[www.deq.state.mi.us/ead/pub/factsheet/envprmts.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/envprmts.pdf)

### **Handling Spent Electric Lamps**

[www.deq.state.mi.us/ead/pub/factsheet/spentlamp.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/spentlamp.pdf)

### **Managing Used Containers**

### **Marina Poster**

[www.deq.state.mi.us/ead/pub/p2/marinaposter.pdf](http://www.deq.state.mi.us/ead/pub/p2/marinaposter.pdf)

**Marine Industry Pollution Prevention & Waste Reduction**

[www.deq.state.mi.us/ead/pub/factsheet/marine.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/marine.pdf)

**Mercury Alert!! (Bilingual brochure)**

[www.deq.state.mi.us/ead/pub/p2/hispmmerc3.pdf](http://www.deq.state.mi.us/ead/pub/p2/hispmmerc3.pdf)

**Metal Recovery Technologies for the Metal Finishing Industry**

[www.deq.state.mi.us/ead/pub/factsheet/mtlrecvry.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/mtlrecvry.pdf)

**Michigan Clean Corporate Citizen Fact Sheet**

[www.deq.state.mi.us/ead/pub/factsheet/c3newfact.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/c3newfact.pdf)

**Michigan Manufacturers' Guide to Environmental & Safety & Health Regulations**

[www.deq.state.mi.us/ead/pub/caap/manufguide/](http://www.deq.state.mi.us/ead/pub/caap/manufguide/)

**P2 Week 2000 Brochure**

**Permit Coordination Information Form eqp3580**

[www.deq.state.mi.us/ead/permits/eqp3580.pdf](http://www.deq.state.mi.us/ead/permits/eqp3580.pdf)

**Re-Refined Oil**

[www.deq.state.mi.us/ead/pub/factsheet/rerefoil.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/rerefoil.pdf)

**Recycled Materials Market Directory, 2000 Edition**

[www.deq.state.mi.us/ead/recycle/rmmd/html](http://www.deq.state.mi.us/ead/recycle/rmmd/html)

**Reduce Waste & Increase Profits at Your Eating Establishment Poster**

[www.deq.state.mi.us/ead/pub/p2/restaurpstr.pdf](http://www.deq.state.mi.us/ead/pub/p2/restaurpstr.pdf)

**Restaurant Pollution Prevention & Waste Reduction Fact Sheet**

[www.deq.state.mi.us/ead/pub/factsheet/restp2wr.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/restp2wr.pdf)

**Rich-Ro Farms: Mercury Removal in Agriculture**

[www.deq.state.mi.us/ead/pub/casestudy/richro.pdf](http://www.deq.state.mi.us/ead/pub/casestudy/richro.pdf)

**Sklarczyk Seed Farms, Johannesburg, MI**

[www.deq.state.mi.us/ead/pub/casestudy/seedfarm.pdf](http://www.deq.state.mi.us/ead/pub/casestudy/seedfarm.pdf)

**Small Business Pollution Prevention Loan Program Company Brochure**

[www.deq.state.mi.us/ead/p2sect/p2loan/compbroch.pdf](http://www.deq.state.mi.us/ead/p2sect/p2loan/compbroch.pdf)

**Small Business Pollution Prevention Loan Program Lender Agreement**

[www.deq.state.mi.us/ead/p2sect/p2loan/](http://www.deq.state.mi.us/ead/p2sect/p2loan/)

**Small Business Pollution Prevention Loan Program Lender Brochure**

[www.deq.state.mi.us/ead/p2sect/p2loan/lndrbroch.pdf](http://www.deq.state.mi.us/ead/p2sect/p2loan/lndrbroch.pdf)

**Small Business Pollution Prevention Loan Program Potential Projects**

[www.deq.state.mi.us/ead/p2sect/p2loan/potentialp2.pdf](http://www.deq.state.mi.us/ead/p2sect/p2loan/potentialp2.pdf)

**Small Business Pollution Prevention Loan Program Project Application & Instructions**

[www.deq.state.mi.us/ead/p2sect/p2loan/](http://www.deq.state.mi.us/ead/p2sect/p2loan/)

**Small Business Pollution Prevention Loan Program Questions & Answers**

[www.deq.state.mi.us/ead/p2sect/p2loan/qanda.pdf](http://www.deq.state.mi.us/ead/p2sect/p2loan/qanda.pdf)

**Small Business Pollution Prevention Loan Program Supplemental Agreement**

[www.deq.state.mi.us/ead/p2sect/p2loan/](http://www.deq.state.mi.us/ead/p2sect/p2loan/)

**Starting and Expanding A Recycling Business in Michigan**

[www.deq.state.mi.us/ead/pub/factsheet/recybus.pdf](http://www.deq.state.mi.us/ead/pub/factsheet/recybus.pdf)

*Pollution Prevention is the Best Solution*

**Steps for Responding to a Large Elemental Mercury Spill**

*www.deq.state.mi.us/ead/pub/p2/lgmerc.pdf*

**Sunshine Prairie Farm: P2 Through Whole Farm Planning**

*www.deq.state.mi.us/ead/pub/casestudy/sunshine.pdf*

**The Business of Recycling**

**The Point Is . . . Needles Hurt (household medical waste)**

*www.deq.state.mi.us/ead/pub/tas/newsharps.pdf*

**Tips to Protect the Environment**

*www.deq.state.mi.us/ead/pub/p2/envtips.pdf*

**Toxic Chemical Release Inventory Summary Report 1998**

*www.deq.state.mi.us/ead/sara/98summaryrpt.pdf*

**Vehicle Service Industry Guidebook, Second Edition**

*www.deq.state.mi.us/ead/eosect/caap/eqp3464.pdf (order form only)*

## **APPENDIX D: Acronyms Used in This Report**

<b>AgP2</b>	Agricultural Pollution Prevention
<b>AHA</b>	American Hospital Association
<b>C3</b>	Clean Corporate Citizen
<b>CMI</b>	Clean Michigan Initiative
<b>CEAP</b>	Community Environmental Awareness Project
<b>DEQ</b>	Michigan Department of Environmental Quality
<b>DOD</b>	Department of Defense
<b>EAD</b>	Environmental Assistance Division
<b>EAC</b>	Environmental Assistance Center
<b>GM</b>	General Motors
<b>GPS</b>	Global Positioning Systems
<b>H2E</b>	Hospitals for a Healthy Environment
<b>LHED</b>	Local Public Health Environmental Department
<b>M2P2</b>	Michigan Mercury Pollution Prevention
<b>MAEAP</b>	Michigan Agricultural Environmental Assurance Program
<b>MALPH</b>	Michigan Association for Local Public Health
<b>MBP3</b>	Michigan Business Pollution Prevention Partnership
<b>MDA</b>	Michigan Department of Agriculture
<b>MFP2I</b>	Metal Finishing Pollution Prevention Initiative
<b>MHHA</b>	Michigan Health and Hospital Association
<b>MI-GPP</b>	Michigan Great Printers Project
<b>MOU</b>	Memorandum of Understanding
<b>MPPEC</b>	Michigan Pulp and Paper Environmental Council
<b>MTESP</b>	Michigan Turfgrass Environmental Stewardship Program
<b>NREPA</b>	Natural Resources and Environmental Protection Act
<b>OGL</b>	Office of the Great Lakes
<b>P2</b>	Pollution Prevention
<b>P2 TAPN</b>	Pollution Prevention Technical Assistance Providers Network
<b>P5</b>	Pulp and Paper Pollution Prevention Program
<b>PA</b>	Public Act
<b>PPA</b>	Pollution Prevention Act
<b>RPD</b>	Recycled Products Directory
<b>RETAP</b>	Retired Engineer Technical Assistance Program
<b>RMMD</b>	Recycled Materials Market Directory
<b>RY</b>	Reporting Year(s)
<b>SARA Title III</b>	Superfund Amendments and Reauthorization Act
<b>SEP</b>	Supplemental Environmental Project
<b>SHAP</b>	Chrysler Sterling Heights Assembly Plant
<b>TAPN</b>	Technical Assistance Providers Network
<b>TPRW</b>	Total Production Related Waste
<b>TRI</b>	Toxic Release Inventory
<b>U.S. EPA</b>	United States Environmental Protection Agency
<b>UV</b>	Ultraviolet
<b>VOC</b>	Volatile Organic Compounds
<b>WIN</b>	Saginaw Bay Watershed Initiative Network
<b>WREE</b>	Waste Reduction and Energy Efficiency

## **APPENDIX E: Pollution Prevention Contact List**

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE</b>	<b>E-MAIL</b>
Agricultural P2 Project	Terri Novak	517-625-4611	novaktl@state.mi.us
Bulletin	Cynthia Dimitrijevic	517-335-5952	dimitric@state.mi.us
Calendar	Ruth Hartwig	517-373-0347	hartwigr@state.mi.us
Community Right-to-Know	Robert Jackson Ruth Borgelt	517-373-8481 517-373-8481	jacksorc@state.mi.us borgeltr@state.mi.us
Clean Corporate Citizen Pgm.	Kelie Caudell Valerie Haan	517-241-7969 517-241-0231	caudellk@state.mi.us haanv@state.mi.us
Department of Defense Pgm.	Steve Kulesia	517-373-6565	kulesias@state.mi.us
Environmentally Preferred Purchasing	James Baker	517-373-2461	bakerjj1@state.mi.us
Environmental Assistance Center		800-662-9278	deq-ead-env-assist@state.mi.us
Environmental Management Systems	Kelie Caudell	517-241-7969	caudellk@state.mi.us
Events and Presentations	Barbara Spitzley	517-373-9283	spitzleb@state.mi.us
Field Staff Services	Rich Alexander	231-775-3960	alexandr@state.mi.us
Green Lights Program	James Baker	517-373-2461	bakerjj1@state.mi.us
Internet Sites	Darlene Harris	517-373-0318	harrisd@state.mi.us
Materials Exchange	Lucy Doroshko	517-373-1322	doroshkl@state.mi.us
Mercury Reduction Initiative	Steve Kratzer	517-373-0939	kratzers@state.mi.us
Michigan Auto Project	Anita Welch	517-335-2356	welcha@state.mi.us
Michigan Business P2 Partnership	Jeff Spencer	517-373-6565	spencejl@state.mi.us
Michigan Great Printers Project	Anita Welch	517-335-2356	welcha@state.mi.us
Michigan Metal Finishing P2 Initiative	Jenna Latt	517-241-8177	lattj@state.mi.us
Michigan Turfgrass Environmental Stewardship Program	Deb Spakoff-Swartz	517-353-3208	swartzd@pilot.msu.edu

<b>PROGRAM</b>	<b>CONTACT</b>	<b>PHONE</b>	<b>E-MAIL</b>
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Pollution Prevention Strategy	Wendy Fitzner	517-373-8798	fitznerw@state.mi.us
Pollution Prevention Technical Assistance	Robert Jackson Jenna Latt David Herb	517-373-2731 517-241-8177 517-241-8176	jacksorc@state.mi.us lattj@state.mi.us herbdw@state.mi.us
Pollution Prevention Week	Deb Swartz	517-353-3208	swartzd@pilot.msu.edu
Pulp and Paper P2 Program	Wendy Fitzner	517-373-8798	fitznerw@state.mi.us
Recycled Materials Market Directory, Michigan Recycled Products Directory, and Recycling Initiatives	Lucy Doroshko	517-373-1322	doroshkl@state.mi.us
Retired Engineer Technical Assistance Program	Elizabeth Sapio	517-335-0081	sapioe@state.mi.us
Small Business Loan Program	Sharon Goble	517-373-6565	gobles@state.mi.us
Speakers Bureau	Barb Spitzley	517-373-9283	spitzleb@state.mi.us
SARA Title III (Emergency Planning and Community Right-to-Know Act)	Robert Jackson Ruth Borgelt	517-373-8481 517-373-8481	jacksorc@state.mi.us borgeltr@state.mi.us
Technical Assistance Group (provider network)	Dave Herb	517-241-8176	herbdw@state.mi.us

## **-Back Page-**

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