

United States
Environmental Protection
Agency

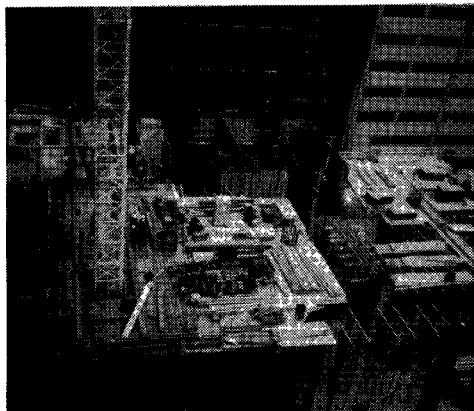
Region 5
230 South Dearborn Street
Chicago, Illinois 60604

EPA/905/9-91/021 ✓
November 1991



***Pollution Prevention:* Meeting the Environmental Challenges of the 1990s**

Region 5 FY91 Accomplishments



NOTE: Effective December 9, 1991
The new address for the
U.S. Environmental Protection Agency, Region 5:

77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Cover: Pollution prevention opportunities cut across five major sectors in society. *Clockwise from top right:* **Agriculture** - careful and alternative agricultural uses of pesticides represent a primary means of preventing non-point source pollution; **Consumers** - public outreach and involvement can increase consumers' environmentally responsible choices; **Industry** - safer alternatives to industrial processes prevent significant amounts of hazardous pollution; **Energy/Transportation** - opting for more energy-efficient modes of transportation reduces the amount of pollution generated from fossil fuels; **Federal Government** - the Federal government can be the model for implementing source reduction principles within its facilities, such as minimizing indoor air pollution in the newly-constructed Ralph H. Metcalfe Federal building in Chicago.

Acknowledgments

This document was prepared under the direction of U.S. EPA, Region 5, Planning and Management Division, in conjunction with the Waste Reduction Institute for Training and Applications Research (WRITAR). Major contributors include Dolly Tong, Rosalie Day, with the valued assistance of Linda Glass (U.S. EPA, Region 5); and Al Innes and Robert Style (WRITAR).

We are also grateful for the constructive input from the EPA Region 5 Pollution Prevention Workgroup, our State counterparts in the Midwest Pollution Prevention Roundtable, and all our colleagues throughout Region 5.

U.S. Environmental Protection Agency
Region 5, Library (PL-12J)
77 West Jackson Boulevard, 12th Floor
Chicago, IL 60604-3590

65584080 333

Table of Contents

Preface	i
Executive Summary	ii
Pollution Prevention Activities in the EPA	1
EPA Key Contacts	13
State Level Pollution Prevention Programs.....	15
Table of State Program Activities	16
Pollution Prevention in Illinois	17
Pollution Prevention in Indiana.....	26
Pollution Prevention in Michigan.....	34
Pollution Prevention in Minnesota	44
Pollution Prevention in Ohio	54
Pollution Prevention in Wisconsin	60

Preface

The passage of the Pollution Prevention Act of 1990 marked a dedication to protect the environment beyond the scope of EPA's traditional role of setting standards and enforcing actions against violators. Much improvement in the environment has been achieved through regulations governing individual environmental media; however, pollution can undergo cross-media transfers and stem from dispersed or non-point sources. Deposition of toxics from the air can pollute surface waters. Lakes and other drainage basins are being degraded from pollutants from stormwater, the atmosphere, and other non-point sources that are difficult to regulate. Preventing pollution at the source thus becomes the preferred way to minimize or remove threats to the environment.

The Act declares pollution prevention to be the national policy establishing a hierarchy for environmental management, whereby pollution should be prevented or reduced at the source whenever feasible. Pollution that cannot be prevented should be recycled in an environmentally sound manner. Where there are no feasible prevention or recycling opportunities, treatment/disposal should be used as a last resort. EPA is charged with promoting pollution prevention as the preferred approach to protecting the environment and reducing environmental risks.

Region 5 is integrating pollution prevention concepts into its base programs, incorporating them throughout its regulatory functions and non-regulatory activities. The Region has also established strong working relationships with agencies in the States of Illinois, Indiana, Ohio, Michigan, Minnesota, and Wisconsin—meshing an interactive web of Federal and State pollution prevention activities in the Region.

This report highlights the activities that the Region has initiated within the industrial, agricultural, energy/transportation, Federal government, and consumer sectors, each reflecting a component in the overall EPA Pollution Prevention Strategy. In addition, projects are featured under the Great Lakes Pollution Prevention Action Plan and specific integrating themes, including enforcement, training, technology transfer, and research and development.

This report also covers State-level activities in the six Region 5 States. It describes the roles, programs and accomplishments of State agencies that have established pollution prevention or related source reduction efforts within their respective offices. This compilation reflects a cooperative effort to pioneer a comprehensive pollution prevention movement in EPA and the States, and lays the foundation for greater integration of and reliance on pollution prevention in Regional actions in the future.

Executive Summary

Passage of the Pollution Prevention Act of 1990, mandating development of a nationwide pollution prevention strategy, occurred simultaneously with increased pollution prevention awareness across Region 5 program activities. The Act established a hierarchy for environmental management with source reduction as the preferred strategy, and with recycling, pollution control and treatment, and waste disposal, following in descending order. As pollution prevention is rapidly becoming an integral part of Agency programs, source reduction and recycling approaches are being utilized throughout the Region, within and across media. Increased awareness about pollution transfers from one environmental medium to another has caused prevention to emerge as the most effective tool for multi-media risk reduction.

EPA has adopted risk reduction as the overarching framework for protecting ecological systems and human health and, in turn, for targeting its pollution prevention and control efforts and resources. Last year, Region 5 conducted a comparative risk analysis of environmental problem areas. The relative risks were characterized and ranked, resulting in the identification of high risk areas that present the greatest opportunities for risk reduction. This information was used to target Regional activities for Fiscal Years (FY) 1991 and 1992, and refine budgeting plans for FY 1993. The Region is initiating four-year strategic planning, 1994 through 1997, integrating pollution prevention into all regulatory and non-regulatory functions and Great Lakes activities. Strategic planning allows the hierarchy of risk management approaches to guide comprehensive environmental management decision-making.

In implementation of pollution prevention concepts, the Region supports many projects in its six States, and maintains interactive relationships that promote technology transfer. The Great Lakes Pollution Prevention Action Plan complements and, in some cases, overlaps the Regional program efforts.

The Agency implementation strategy includes the integration of prevention concepts into specific economic sectors, including industry, agriculture, energy/transportation, consumers and the Federal government. This targeting by sector allows the Agency to focus on problems with high relative risks, good potential for risk reduction, and high probability of environmental improvement. Region 5 has initiated pollution prevention activities within each sector which complement the Agencywide initiatives. These sector activities include the following:

- **Industrial Sector.** Technology transfer activities that target specific industries or geographic areas, and assistance to States for similar efforts;
- **Agricultural Sector.** Programs in sustainable agricultural management and development of conscientious pesticides directives;
- **Energy/Transportation Sector.** Global Atmosphere Initiative, encouraging reductions in energy consumption through outreach, public-private partnerships and coordination with other agencies;
- **Federal Government Sector.** Technical assistance that identifies

alternatives to hazardous materials, a risk-based prioritization project for inspection and implementation of prevention measures, and establishment of environmentally sound practices for the new Federal building facility; and

- **Consumer Sector.** Outreach activities for water and energy conservation.

Pollution Prevention in EPA

Congress has charged EPA with developing and implementing a comprehensive pollution prevention strategy that includes individual strategies to address the full range of environmental problems. These strategies focus on areas with high relative risk, good risk reduction potential, and high probability for environmental improvement. The Great Lakes Basin is a unique ecosystem that requires a specialized approach to reduce pollutant loadings and preserve its diverse habitats. Complementary efforts integrate pollution prevention into enforcement, training, technology transfer, and research and development, as part of a coordinated effort with public and private agencies to improve the overall health of the environment.

Industrial Sector

Although existing regulations and industrial processes have not historically emphasized source reduction, significant opportunities exist to reduce or prevent pollution at the source through cost-effective changes in housekeeping practices, raw materials substitution, operation and production practices. EPA is committed to fostering changes which reduce risks to human health and the environment while offering industry substantial cost savings.

33/50 Program. Region 5 is implementing the 33/50 Program, a national EPA voluntary pollution prevention initiative aimed at reducing the emissions of 17 priority toxic chemicals from industrial sources. The goal is to reduce 33% of releases to all media from industrial facilities of the targeted chemicals by the end of 1992, and at least 50% by the end of 1995. Reductions will be measured using the 1988 Toxics Release Inventory (TRI) as a baseline. Approximately fifteen hundred of the top six thousand emitters of these chemicals are in Region 5. These companies received letters from the Regional Administrator inviting them to participate, underscoring the Regional priority to restore and protect the Great Lakes Basin (see Great Lakes Pollution Prevention Action Plan, p. 6). The Regional office is currently receiving responses and encouraging concrete commitments from the targeted companies.

Iron and Steel Industry Conference. Region 5 is hosting a pollution prevention conference for the iron and steel industry in the spring of 1992 in Chicago. The conference, focusing on the Great Lakes Basin, will be co-sponsored by the American Institute for Pollution Prevention (see p. 11), the American Iron and Steel Institute, and the Steel Manufacturers Association. The event will provide a forum for information exchange and education on industry-related technical and policy issues with respect to pollution prevention.

State and Local Government Assistance. EPA provides grants and forums for the exchange of ideas for launching pollution prevention initiatives at the State and local levels. An example of an EPA supported State activity is the development of Wisconsin's statewide initiative integrating pollution prevention across environmental programs. The initiative will include technology transfer, innovative approaches, and financial assistance for hazardous waste reduction for small and medium-sized businesses. The program will also

promote pollution prevention as the optimum way of complying with new air toxics and water quality regulations.

Region 5 is also supporting the Greater Milwaukee Area Toxic Minimization Task Force, a group composed of representatives of industry, business, universities, environmental groups, municipal government and the sewerage district. Programs for education and outreach are components of its effort to develop and implement an overall strategy to promote pollution prevention in the Milwaukee area.

RCRA Source Reduction and Recycling Plan. Region 5 is in the process of developing a long range Source Reduction and Recycling Plan to integrate pollution prevention concepts into the Resource Conservation and Recovery Act (RCRA) program activities. A workgroup was formed to review existing Agency guidance and create a checklist for evaluating pollution prevention proposals. The workgroup has developed model language for inclusion in agreed orders and consent decrees. The extent to which pollution prevention concepts can be applied in permits is another area of ongoing inquiry. Region 5 is also working with the States to employ source reduction principles in the States' Capacity Assurance Plans (CAPs).

Agricultural Sector

With many sources of agricultural stressors, it has been difficult and costly for EPA to adequately address the environmental impact of each one individually. The Regional pesticides program incorporates preventive measures into its regulatory directives. In addition, several programs have been established to educate farmers and their communities about pollution prevention measures specific to agricultural management. These practices prevent varied impacts, such as run-off from feed lots and groundwater contamination from fertilizers.

EPA/USDA Project. Region 5 is working cooperatively with the U.S. Department of Agriculture (USDA) to develop a program for environmentally responsible management of agricultural chemicals. Technical assistance and outreach materials will be provided to farmers for reduction of surface and groundwater contamination through conscientious agricultural practices.

Farm*A*Syst Program. Region 5, the EPA Great Lakes National Program Office (GLNPO), and the University of Wisconsin have developed the Farm*A*Syst (Farmstead Assessment System) program for farmers and rural communities to assess overall farm practices through self-help worksheets. Pilot programs were conducted in selected Wisconsin and Minnesota counties. Education modules, based on the worksheets, are being developed for use in high schools and youth organizations. A module on site vulnerability to groundwater contamination will be piloted in schools in Waupaca County, Wisconsin in Autumn, 1991.

Pollution Prevention and Pesticide Regulations. Pollution prevention concepts are being integrated throughout pesticide regulations. Region 5 has drafted a Pesticides and Groundwater Strategy for prevention of groundwater impacts using authorities in the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), to reduce or eliminate the use of leaching pesticides

in areas particularly vulnerable to groundwater contamination. The Region and the States are cooperatively developing new regulations fostering reduction of the use of disposal containers during bulk pesticide handling. Federal and State regulations for managing pesticide mixing loading sites are being developed by Region 5 and the States for accidental chemical release prevention.

Energy/Transportation Sector

Pollution prevention initiatives involving the energy/transportation sector present significant opportunities for reducing pollutants and their associated risks. Coupled with the new Clean Air Act Amendments, projects encouraging energy conservation and toxic emissions reductions have considerable potential to reduce pollutant loadings. These include sulfur dioxide emissions that contribute to acid deposition, carbon dioxide emissions that contribute to greenhouse gases accumulation, and carbon monoxide emissions that contribute to smog.

Global Atmosphere Initiative. Region 5's Global Atmosphere Initiative is a program to reduce the generation of greenhouse gases and prevent further depletion of stratospheric ozone, ultimately minimizing the extent of global climate change. Reductions in energy consumption and automobile trips are components of the pollution prevention strategy to reduce society's dependence on fossil fuels and prevent further alteration of the atmospheric composition. This program encompasses numerous regulatory, educational and outreach activities, as well as the specific projects described below.

- **Green Lights Program.** Region 5 actively participates in the Green Lights program, an EPA voluntary initiative that encourages firms to install energy-efficient light fixtures in their facilities. As lighting accounts for one quarter of national electricity use, a successful Green Lights initiative across the nation can reduce electricity demand by ten percent or more, thereby reducing air pollution from coal and other generation sources. While the national initiative targets Fortune 500 companies, Region 5 provides workshops to small and medium-sized businesses to encourage their participation in a Regional efficient lighting program. Also, the city of Naperville, Illinois has signed a Memorandum of Understanding with EPA to become the first city in the nation to retrofit its municipal facilities with energy-efficient lighting under the Green Lights Program.
- **Public-Private Partnerships.** Region 5 uses this initiative as a tool to encourage energy conservation through market incentives and creative financing opportunities. A demonstration project in St. Paul, Minnesota is supported by Region 5 for development of a utility rate policy rewarding energy efficiency and conservation. The policy will potentially be used as a model for utilities in communities with similar electricity needs.
- **Mass Transit Video.** Region 5 is working with the Center for Neighborhood Technology, a non-profit technical assistance corporation in Chicago that works with organizations serving low- and moderate-income urban communities, to produce a 15-minute

videotape about the benefits of mass transit and ridesharing. This video will be used for on-site presentations to corporations, chambers of commerce and other business-related groups to stimulate discussion of long-range transportation planning goals and strategies. The program will also be positioned for broadcast distribution on some public television and community access channels in local, regional, and national markets.

Federal Government Sector

EPA is providing leadership to other Federal agencies to become a role model for environmentally sound practices. Adoption of pollution prevention and waste reduction practices at Federal facilities alone will provide significant relief from adverse environmental impacts. The Federal government is a manufacturer and waste generator, as well as a consumer of goods and services on a scale large enough to substantially influence private sector practices through market pressures. As regulators, policy makers, and participants in the economic market, Federal agencies are able to influence or direct change across all sectors of society.

Federal Facilities. Region 5 is conducting projects with the Departments of Defense, Energy, Agriculture and Interior to jointly inspect and evaluate Federal facilities for environmentally sound practices. Through technical transfer, Region 5 assists these Federal facilities in determining safer alternatives to hazardous materials used in their respective operations. Demonstration projects with Federal facilities are also coordinated by EPA's Waste Reduction Evaluation at Federal Sites (WREAFS) Program (see p. 11).

Great Lakes Federal Facilities Initiative. Region 5 is coordinating an environmental risk prioritization of Federal facilities in the Great Lakes Basin. A database incorporating the same chemicals tracked for the Toxic Release Inventory (TRI) is being developed for Federal installments to produce a risk-based ranking of Basin facilities. Using this information, Region 5 will develop inspection strategies to identify opportunities for risk reduction. The Region will request voluntary implementation of pollution prevention measures to address these opportunities similar to the approach used for industries in the 33/50 Program (see p. 1). Once developed, the risk-based strategy will be adopted for all Federal facilities in the Region.

Project 1992. Beginning October 1991, Region 5 will be moving into a new Federal Building in Chicago, a construction plan referred to as "Project 1992." The Regional office is joining forces with other Federal agencies to purchase recycled or recyclable office supplies to reduce waste, and to establish a recycling program for the new building that will include all resident Agencies. These include the Social Security Administration, Housing and Urban Development, Department of Agriculture, and ACTION. Working with the General Services Administration (GSA), Region 5 conducted a waste stream analysis to determine the recycling needs of the building to allow development of an appropriate recycling program.

The Region is also coordinating with GSA on a Green Lights-type effort (see p. 3) for the new building. Plans are underway to retrofit the ceiling fixtures to a

level of efficiency in alignment with EPA Green Lights Program standards. Approved efficiency track lighting has also been ordered for the workstations.

Consumer Sector

Consumer decisions have a direct influence on the state of the environment. EPA recognizes that awareness and understanding of environmental impacts can enable consumers to alter their behaviors to reflect their personal environmental preferences.

Outreach Materials. Region 5's existing outreach efforts have stressed pollution prevention as the preferred approach to reduce environmental risks. Educational literature on urban non-point source pollution targets audiences from children to laymen/public officials to technical workers. Specific pollution prevention guides and manuals have been prepared for community planners, developers and homeowners. Conferences and other forms of outreach are also extended to Indian Tribes in the Region.

Office of Public Affairs. Region 5's Office of Public Affairs (OPA) provides outreach to the public through press conferences, press releases, fact sheets and other types of materials on current pollution prevention activities and grants. OPA participates in the National Pollution Prevention Environmental Education Taskforce, which is involved in activities to institutionalize environmental education through development of curriculum materials and teacher training.

National Pollution Prevention Center. EPA has awarded a grant to the University of Michigan to establish a National Pollution Prevention Center. The emphasis of the Center will be to incorporate pollution prevention principles into a variety of school curricula. Curriculum modules will be developed for the inclusion of pollution prevention concepts in undergraduate and graduate engineering, business, design, and natural resource classes.

Low-Income Communities. Region 5 is expanding its outreach efforts to low-income communities. Cooperative relationships are being established with neighborhood councils and specific community organizations for development of fact sheets for residents regarding their energy and transportation consumption. This outreach will be performed by a Regional taskforce.

Small Community Outreach and Education (SCORE). The SCORE program provides information and technical assistance on all prevention and control related aspects of small community wastewater management. Region 5's Water Compliance Branch offers information, technical assistance and referrals on water conservation, source reduction and innovative preventive management practices. It also develops new publications and manages a small incentive grant program.

Water Conservation. Water conservation, especially through use of efficient plumbing fixtures (toilets, showerheads, faucets, etc.), is one of the most cost-effective forms of wastewater source reduction. This technology can eliminate the need for new water supplies or sewerage treatment facilities. In addition, the avoided infrastructure construction not only results in cost

savings but avoids further energy consumption. Region 5's Water Compliance Branch offers information, technical assistance, referral and interactive software packages to help communities understand and manage conservation technology. The Branch represents the Region on the Agency's Water Use Efficiency Task Force and manages several research and field test projects.

Municipal Waste Combustor Pilot Project. Region 5 and the Olmsted County Waste-to-Energy facility in Rochester, Minnesota are piloting a household battery recycling project, in which batteries are removed from household wastes en route to municipal waste combustors. The battery-free incinerator air emissions and ash residues will be evaluated for reductions in heavy metals, such as lead, nickel, mercury and cadmium. Region 4 (in the southeastern U.S.) is working on a parallel project. After two years, the results from Regions 4 and 5 will be analyzed, culminating in a joint report. Community outreach and educational materials will be prepared summarizing the program and its results. Outreach will encourage battery recycling, providing awareness of the environmental and economic benefits realized and setting forth procedures for establishing similar programs.

Municipal Water Pollution Prevention Program. The Municipal Water Pollution Prevention (MWPP) Program aims to prevent the introduction of municipal wastes into the nation's waterways. Modeled after the Wisconsin Compliance Maintenance Program, in effect since 1987, the program was undertaken by Region 5 in 1989 to protect the compliance attainment achievements of the Agency's National Municipal Policy and to safeguard the existing wastewater management infrastructure. The program aims to prevent violations of effluent limits, maximize the useful life of municipal wastewater treatment facilities, and promote good working relations between treatment plant operators, municipal officials and State water pollution control agencies. A pilot program grant has been awarded to the State of Minnesota for development of source reduction applications for the Minneapolis metropolitan wastewater treatment facility.

Great Lakes Pollution Prevention Action Plan

In 1987, as part of the Great Lakes Water Quality Agreement, the United States and Canada committed to strengthening efforts to virtually eliminate the release of persistent toxic substances into the Great Lakes Basin. The EPA Great Lakes National Program Office has developed a Great Lakes Pollution Prevention Action Plan in partnership with the Basin States (including the six States in Region 5) to incorporate pollution prevention as a critical tool for achieving this goal. The Action Plan establishes new initiatives and redirects existing activities to promote innovative prevention practices throughout the Basin.

Major Initiatives. EPA is launching three major initiatives with Great Lakes States, addressing the broad spectrum of pollution prevention opportunities in the Basin. First, a public-private partnership of EPA, the Great Lakes States, and the automobile industry (including Chrysler, Ford, General Motors and the Motor Vehicle Manufacturers Association) is promoting voluntary pollution prevention of persistent toxics that have long-term detrimental impacts on the Basin. The automobile companies will identify the priority toxics within their

respective operations and develop and implement pollution prevention practices to reduce their use.

Second, EPA is working cooperatively with the States of Michigan, Minnesota, and Wisconsin, and our Canadian counterparts on a Lake Superior zero discharge demonstration program. This binational initiative includes providing special protection designations, using enhanced controls and regulations, and incorporating pollution prevention into daily activities. Under this program, EPA is also supporting Minnesota's Lake Superior Partnership, a cross-media inspection/compliance initiative emphasizing pollution prevention in a geographically focused industrial area along the Basin.

Third, EPA and the State of New York are launching educational pilot programs on urban non-point source pollution prevention. Discharges of household hazardous wastes will be the program's primary focus. EPA and New York will also develop guidance documents to help local officials develop comprehensive programs to deal with non-point source discharges in their communities.

To emphasize the importance of pollution prevention and the shared responsibility of the U.S. and Canada, EPA and Environment Canada co-sponsored the 1991 Bi-National Great Lakes/St. Lawrence River Pollution Prevention Symposium. The Symposium highlighted advances made in pollution prevention in the Great Lakes Basin and established the agenda for future pollution prevention efforts. The Symposium was held in conjunction with the International Joint Commission* Biennial meeting.

Lakewide Management Plans (LaMPs). LaMPs are lake-specific cross-media plans designed to restore beneficial uses of the Great Lakes by reducing loadings of critical pollutants. The development and implementation of a LaMP for each lake is required under the Great Lakes Water Quality Agreement. Regionally, specific pollutants and their sources will be targeted and evaluated for pollution prevention opportunities through the LaMP process. From these evaluations, the LaMPs will establish load reduction strategies and goals for each lake. EPA is currently developing LaMPs for Lake Michigan and Lake Ontario. Both have targeted specific pollutants for priority action and have identified persistent toxic substances for pollution prevention efforts. These toxics reduction efforts will be consistent with the 17 chemicals identified in the 33/50 Program (see p. 1). In addition, the Lake Michigan LaMP is targeting substances currently discharged that may impair beneficial uses in the future.

Remedial Action Plans (RAPs). EPA is working with the States on the development and implementation of RAPs. These Plans specify remedial strategies for the contamination in the designated Great Lakes Areas of Concern. Integrating pollution prevention activities into RAPs will protect current investments in the clean-ups by taking measures to prevent future releases.

* The International Joint Commission facilitates binational cooperation and activities between Canada and the United States in the use of waterways that cross the border between the two nations, including the Great Lakes.

EPA is developing specific guidance for the incorporation of pollution prevention concepts into RAPs. A pollution prevention training course will be provided to Regional RAP coordinators and RAP stakeholders. This training will use case studies and provide information on how States can incorporate pollution prevention into the RAPs.

Enforcement

Region 5 is instituting new procedures and refocusing established ones to ensure that Regional enforcement staff identify and incorporate pollution prevention measures into enforcement settlements. It is anticipated that, eventually, all consent decrees and administrative settlements will include appropriate pollution prevention measures. The Office of Regional Counsel (ORC) has designated pollution prevention contacts for each branch office. These attorneys are responsible for ensuring awareness of pollution prevention issues and for monitoring the interaction between national enforcement precedents and Regional policy.

Supplemental Environmental Projects (SEPs). ORC has established a repository of consent decrees and administrative orders which contain provisions requiring defendants/respondents to undertake SEPs. Mitigation of penalties through SEPs applied the hierarchy stated in the Pollution Prevention Act well before its enactment in October, 1990 (see p. ii). SEPs, formerly referred to as Environmentally Beneficial Expenditures, may be any of the following types of projects: pollution prevention, pollution reduction, environmental restoration, environmental auditing or public awareness. The extent to which a defendant/respondent may offset the gravity based portion* of an assessed penalty is currently under review. The Agency, however, will always insist on recovering the full economic benefit that the facility gained from its violations.

The 33/50 Program (see p. 1) may have ramifications for enforcement proceedings. No company or facility will be singled out for enforcement because of its participation or decision not to participate in the 33/50 Program. Vigorous enforcement will proceed where the Agency uncovers violations of environmental regulations, regardless of participation. However, projects being carried out pursuant to the 33/50 Program may qualify as SEPs and, therefore, may be basis for reduction in the gravity based penalty.

In 1988, the Enforcement Response Policy for the Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313, on TRI reporting, encouraged the use of SEPs in settling cases. Since TRI is a multi-media database, a variety of SEPs have been used in agreements consistently, reducing use or emissions of tons of chemicals. The Pollution Prevention Act requires industries subject to TRI reporting to also report on pollution prevention activities associated with the specified chemicals for the 1991 calendar year. Enforcement of this requirement will present additional opportunities for SEPs.

* The gravity based portion reflects the seriousness of the violation based on weighted factors enumerated in the statute, e.g., the duration or the frequency of the violation committed.

Geographic Enforcement Initiative. The Geographic Enforcement Initiative (GEI) presents opportunities for pollution prevention through its multi-media enforcement activities in a targeted geographic area. Northwest Indiana/Southeast Chicago is the area currently targeted. Facilities in the area are targeted for multi-media inspections based on their potentials for TRI chemical reductions and given rankings of their compliance records for single- and multi-media releases. Region 5 inspectors will provide brochures to facilities on appropriate pollution prevention methodologies.

A multi-media litigation screening committee provides routine review of the facility inspections for administrative and judicial enforcement. Any resulting actions are coordinated by a multi-media enforcement team. Review for potential inclusion of pollution prevention measures is a critical component of the case review process. The screening committee is able to identify the multi-media nature and the pollution prevention potential at the outset of the case development process.

One goal of the GEI is to achieve a fifty percent reduction in toxic chemical releases to the target area by 1996. Toxic reductions through pollution prevention measures will be strongly encouraged throughout the enforcement process. The concentration of inspection and enforcement actions should result in a significantly increased adoption of pollution prevention practices by industry in this area.

Beginning in fiscal year 1992 the next targeted area will be southeast Michigan, which includes the Detroit metropolitan area. Pollution prevention efforts in this area will be conducted predominantly through voluntary reductions in facilities.

Training

Training is essential for disseminating pollution prevention concepts. Region 5 offers to its staff a half-day general overview of pollution prevention concepts, philosophies and programs. Region 5 provides training on the use of the Pollution Prevention Information Clearinghouse (PPIC), an electronic database of pollution prevention information available to a wide user network of public and private organizations, nationally and internationally.

In addition to pollution prevention training for RAP coordinators (see Remedial Action Plans, p. 7), audience-specific training will be provided for other types of pollution problems. In the Basic Inspector Training course, required for all EPA inspectors, pollution prevention concepts are adapted to the role of the inspector. Training is being tailored for permit writers, emphasizing cross-media risk reduction. EPA Headquarters conducted a pilot National Pollution Discharge Elimination System (NPDES) Pollution Prevention training with Region 5 States. Pollution prevention training for enforcement staff in water compliance will be available in late October, 1991.

In general, training for enforcement and permitting staff allows pollution prevention to be incorporated into the primary regulatory programs and fosters an awareness of potential problems, such as cross-media transfers of pollutants.

Technology Transfer

Technology transfer is comprised of training, technical assistance and focused information sharing. It provides an effective means for EPA to cooperatively develop and improve pollution prevention methodologies with States, industry and other interest groups. The Region disseminates technical knowledge and information on various pollution prevention applications.

Purdue University Technology Transfer Center. Region 5 and Purdue University are organizing a center for technology transfer with an emphasis on pollution prevention. This center will receive both public and private funding, and will extend its expertise to many other universities and colleges. To promote pollution prevention in the U.S. and abroad the center will:

- (1) develop educational software packages and other materials;
- (2) conduct ongoing technical assistance programs through "environmental ambassadors;" and
- (3) assist or fund the exchange of personnel (students, scientists, teachers, and officials).

Environmentally Conscious Architecture Symposium. Region 5, the Department of Architecture at Ball State University, and the Council of Architectural Research are planning a symposium on Environmentally Conscious Architecture in April 1992. The symposium will explore the role and responsibilities of the architect with respect to creating environmentally conscious buildings and communities, and will identify the tools and guidelines available or needed to enhance the profession's ability to meet the design challenges of the future. This project will address two types of high environmental risk, indoor air quality and global climate change. Four primary areas will be addressed:

- (1) site — ecosystem maintenance and/or improvement, retention of site amenities, impact of infrastructure on the site;
- (2) energy — energy conservation, renewable resources and technologies, high efficiency systems and equipment;
- (3) resource management — water conservation, resource-conserving waste management, design for recycling; and
- (4) building materials — indoor air quality, toxic emissions, impact on threatened ecosystems, cradle-to-grave environmental costs.

Southeast Michigan Waste Minimization Conference. In conjunction with State and local governments, industry and civic groups, Region 5 and GLNPO are establishing a technical workgroup for process engineers from southeast Michigan industries that have been identified as major sources of pollution. The workgroup will encourage participants to commit to reducing emissions. A conference will be hosted in November, 1991 to address specific problems in five Areas of Concern in the Great Lakes and precise, state-of-the-art pollution prevention methodologies.

Research And Development

Research and development are critical to the advancement of pollution prevention methodologies. The Risk Reduction Engineering Laboratory (RREL) in Cincinnati, under EPA's Office of Research and Development, has a Pollution Prevention Branch responsible for supporting projects to develop and demonstrate clean production technologies, clean products and innovative approaches to source reduction in all media. Many of these projects are carried out cooperatively with State agencies, universities, and other environmental research organizations.

Research projects conducted in Region 5 focus on industries predominant in the Midwest including electroplating, metal finishing, pulp and paper, and printing and inking. Cooperative agreements between EPA and industries exist to support these projects. Two existing programs are the Waste Reduction Innovative Technology Evaluation (WRITE) and the Waste Reduction Evaluation at Federal Sites (WREAFS).

WRITE Program. The WRITE Program identifies specific pollution prevention technologies and jointly tests these innovations with participating companies in the appropriate industries. Currently there are WRITE projects in Illinois and Minnesota, targeting the printing and inking, and plating industries. EPA is working cooperatively with the Illinois Hazardous Waste Research and Information Center (HWRIC) and the Minnesota Technical Assistance Program (MnTAP) to identify/evaluate specific waste reduction technologies.

WREAFS Program. The WREAFS Program is a series of assessment and demonstration projects for pollution prevention and waste reduction conducted cooperatively by EPA and other Federal Agencies, such as the Departments of Agriculture, Defense, Energy, and Veterans Affairs. The objectives of the WREAFS Program include: (1) performing waste minimization opportunity assessments at Federal sites; (2) demonstrating pollution prevention techniques or technologies at Federal facilities; (3) conducting pollution prevention workshops within the Federal sector; and (4) enhancing pollution prevention benefits within the Federal community.

The WREAFS Program features two Interagency Agreement projects with the USDA Forest Products Laboratory (FPL) in Madison, Wisconsin and EPA. One project investigates the potential for reclaiming newsprint by means of dry fiberizing and bonding enhancement processes. It is part of a larger program at FPL that explores dry and/or semi-dry papermaking processes. The American Newsprint Publishing Association, FPL and EPA are co-funding the project. The second project is a three-year agreement to investigate and develop wood/plastic composites from recycled plastic and wood fiber.

The American Institute for Pollution Prevention. RREL sponsored the establishment of the American Institute for Pollution Prevention at the University of Cincinnati, Department of Civil and Environmental Engineering. Twenty individuals with distinguished records of accomplishment in pollution prevention were nominated by industrial trade associations and professional societies and appointed to the Institute. The Institute is organized into four Councils based on priority areas of interest, economics, education,

implementation and technology.

The role of the Institute is to:

- (1) interface between EPA and potential implementors of pollution prevention techniques, primarily in industry;
- (2) assist the EPA in improving the quality and cost-effectiveness of its programs with respect to pollution prevention; and
- (3) generate both private and public sector support for pollution prevention concepts.

Specific objectives of the Institute include assisting EPA on several pollution prevention demonstration projects, developing pollution prevention-oriented design problems for use in engineering curricula and executive education courses, and producing a "practical guide" to pollution prevention economics.

EPA Key Contacts

PROJECT	NAME	PHONE
33/50 Program	Dennis Wesolowski	312-353-5907
American Institute for Pollution Prevention	Thomas R. Hauser (University of Cincinnati)	513-556-7896
Basic Inspector Training Course	Willie Harris	312-886-5500
Binational Great Lakes/St. Lawrence River Pollution Prevention Symposium	Danielle Green	312-886-7594
Environmentally Conscious Architecture Symposium	Linda Glass	312 886-2910
Farm*A*Syst Program	Susan Boldt	312-353-3565
Federal Facilities	Elmer Shannon	312-886-7342
Federal Facilities, risk-based prioritization	Elmer Shannon	312-886-7342
Geographic Enforcement Initiative	Bert Frey	312-886-6771
Global Atmosphere Initiative	John Haugland	312-353-3433
Great Lakes Pollution Prevention Action Plan	Danielle Green	312-886-7594
Greater Milwaukee Area Toxic Minimization Task Force	Cathy Allen	312-886-0136
Green Lights Program	John Haugland Cheryl Newton	312-353-3433 312-886-6081
Iron and Steel Industry Conference	Jennifer Beese	312-886-6713
Lake Superior Initiative	Susan Boldt	312-353-3565
Lakewide Management Plans (LaMPs)	Susan Swales	312-353-4475
Low-income communities	John Haugland	312-353-3433
Mass Transit Video	John Haugland	312-353-3433
Municipal Waste Combustor Pilot Project	John Pavitt	312-886-6858
Municipal Water Pollution Prevention	Peter Smith	312-886-0212
National Pollution Prevention Center	Linda Glass	312-886-1019
National Pollution Prevention Environmental Taskforce	Margaret McCue	312-353-2072
Office of Public Affairs	Margaret McCue	312-353-2072
Office of Regional Counsel	Laura Day	312-353-4482
pollution prevention contacts	Steve Kaiser	312-353-6126
Outreach, low-income communities	John Haugland	312-353-3433
Outreach, non-point source pollution	Tom Davenport	312-886-0209
Outreach, pollution prevention guides/manuals	Tom Davenport	312-886-0209
Outreach, small communities	Al Krause	312-886-0146
Pesticides and Ground Water Strategy	Bruce Wilkinson	312-886-6002
Pollution Prevention Information Clearinghouse (PPIC)	Linda Glass	312-886-1019
Project 1992, Federal recycling program	Linda Glass	312-886-1019
Project 1992, Green Lights program	John Haugland	312-353-3433

Public-Private Partnerships	Linda Glass	312-886-1019
Purdue University Technology Transfer Center	Al Krause	312-886-0246
RCRA Source Reduction and Recycling Plan	Susan Swales	312-353-4775
Remedial Action Plans (RAPs)	Barry DeGraff	312-886-0147
Risk Reduction Engineering Laboratory (RREL)	Mary Ann Curran	513-569-7837
Small Community Outreach and Education (SCORE)	Al Krause	312-886-0146
Southeast Michigan Waste Minimization Conference	Marcia D'Amato	312-886-6297
Storage/Disposal of Pesticides	David Macarus	312-353-5814
Supplemental Environmental Projects (SEP)	Laura Day	312-353-4482
Training, NPDES permitting	Cathy Allen	312-886-0136
Training, enforcement	Laura Day	312-353-4482
Training, general pollution prevention	Linda Glass	312-886-1019
Training, PPIC	Linda Glass	312-886-1019
Training, RAP coordinators	Cathy Allen	312-886-0136
Training, water compliance	Jennifer Beese	312-886-6713
USDA Project	Tom Davenport	312-886-0209
Water Conservation	Al Krause	312-886-0146
WREAFS Program	James S. Bridges (RREL)	513-569-7683
WRITE Program	Teresa M. Harten (RREL)	513-569-7565

For more information contact: Linda Glass
Region 5 Pollution Prevention Coordinator
U.S. Environmental Protection Agency
230 S. Dearborn Street (5MA-14)
Chicago, IL 60604
312-886-1019
312-353-5374 (FAX)

State Level Pollution Prevention Programs

The movement toward pollution prevention as the preferred waste management methodology is well supported in Region 5 by a number of programs operating at the state and local level. Every state in the Region supports at least two different pollution prevention programs and in every instance at least one of those programs is based outside the state's regulatory structure. The services offered by these state level programs range from the most basic outreach and education activities to complex, process specific technical assistance.

A number of programs in the Region have as part of their mission a mandate to discover innovative methods for the promotion of the pollution prevention mindset. Often these innovations involve using financial incentives from the states to industry to support the implementation of pollution prevention technology and processes, or building flexibility into the permitting process so as to encourage pollution prevention.

Each state has at least one program designed to provide technical assistance to waste generators from a non-regulatory base. Services offered by these technical assistance programs vary widely. Those that are comprehensive have the resources to do everything from answer the most basic regulatory question over the phone to performing waste reduction audits and assisting clients with complicated manufacturing process changes.

Each state also supports a program that collects pollution prevention information, usually including both regulatory and technical, and makes that information available to interested parties. Some programs are fairly new and just beginning to gather this information while others have become so proficient at it that they have developed extensive computerized databases that they are able to make available to their clients.

EPA provides funding in varying degrees to every pollution prevention program in Region 5. This funding has proven vital in light of the fiscal cutbacks many states find themselves forced to make. States have also imposed disposal fees on waste generators and are using these monies to fund their pollution prevention programs. Even with the development of this new funding source, EPA funding has proven vital to the continued development of these programs.

An Overview of Region 5 Pollution Prevention Efforts

	Present Activities	Future Activities	Audience/ Clients	Legislation	Base	Budget	Sources of Budget
Illinois	<ul style="list-style-type: none"> •Technical assistance •Information clearinghouse •Research •Permit innovation •Waste exchange 	<ul style="list-style-type: none"> •Focused technical assistance •Curriculum development 	<ul style="list-style-type: none"> •All state business, industry, and government 	<ul style="list-style-type: none"> •1989 Toxic Pollution Prevention Act 	<ul style="list-style-type: none"> •Dept of Energy and Natural Resources •University of Illinois 	<ul style="list-style-type: none"> •\$2,000,000 	<ul style="list-style-type: none"> •Fees •General Revenue Funds •Federal Grants
Indiana	<ul style="list-style-type: none"> •Technical assistance •Education •Opportunity assessments •Information clearinghouse 	<ul style="list-style-type: none"> •Training •Newsletter •Outreach 	<ul style="list-style-type: none"> •All state business, industry and government •Special program focused on agricultural industries 	<ul style="list-style-type: none"> •1990 Amendment to Environment Code 	<ul style="list-style-type: none"> •Department of Env. Management •Purdue University 	<ul style="list-style-type: none"> •\$500,000 	<ul style="list-style-type: none"> •General Revenue Funds •Federal Grants •Purdue University
Michigan	<ul style="list-style-type: none"> •Targeted technical assistance •Seminars •Information clearinghouse •Generator survey •Outreach 	<ul style="list-style-type: none"> •Waste reduction grants program •Waste tracking software 	<ul style="list-style-type: none"> •State and local business •State government 	<ul style="list-style-type: none"> •None 	<ul style="list-style-type: none"> •Dept. of Natural Resources •Dept of Commerce •Grand Valley State University 	<ul style="list-style-type: none"> •\$1,434,000 	<ul style="list-style-type: none"> •General Revenue Funds •Private Industry Grant •Michigan Research Excellence Fund •Federal Grants
Minnesota	<ul style="list-style-type: none"> •Technical assistance •Information clearinghouse •Facility planning •Grants •Training •Publications 	<ul style="list-style-type: none"> •Increased outreach •Pollution prevention planning assistance •Investigate program effectiveness measures 	<ul style="list-style-type: none"> •State business and industry •State government 	<ul style="list-style-type: none"> •1990 Toxic Pollution Prevention Act 	<ul style="list-style-type: none"> •State Agency •University of Minnesota 	<ul style="list-style-type: none"> •\$2,178,000 	<ul style="list-style-type: none"> •General Revenue Funds •Fees •Federal Grants
Ohio	<ul style="list-style-type: none"> •Technical Assistance •Information Clearinghouse •Waste exchange •Outreach •Plan development 	<ul style="list-style-type: none"> •Training •Pollution prevention assessments •Pollution prevention demonstration project 	<ul style="list-style-type: none"> •State business and industry 	<ul style="list-style-type: none"> •None 	<ul style="list-style-type: none"> •Ohio EPA •Ohio Department of Development •28 Affiliated two-year colleges and 5 universities 	<ul style="list-style-type: none"> •\$1,700,000 	<ul style="list-style-type: none"> •General Revenue Funds •Federal grants
Wisconsin	<ul style="list-style-type: none"> •Technical assistance •Grants •Information clearinghouse •Training •Seminars and workshops 	<ul style="list-style-type: none"> •Expanded technical assistance •Pilot pollution prevention projects 	<ul style="list-style-type: none"> •State business and industry •State government 	<ul style="list-style-type: none"> •Act 325, Hazardous Pollution Prevention 	<ul style="list-style-type: none"> •Dept. of Natural Resources •University of Wisconsin Extension 	<ul style="list-style-type: none"> •\$208,000 	<ul style="list-style-type: none"> •General Revenue Funds •Fees •Federal grants

Pollution Prevention in the State of Illinois

The state of Illinois is considered by many to be one of the leading lights in pollution prevention efforts in the country. A network of cooperating state agencies, state universities and private not-for-profit organizations combine with an active and progressive private sector to reduce the amount and toxicity of waste generated in the state. Featuring an innovative research and information center and programs designed to encourage business and government cooperation, pollution prevention efforts in Illinois are well established.

According to the 1988 Toxics Release Inventory National Report, the state of Illinois ranks fifth in the country in terms of reported releases of toxic chemicals to the environment. The top five industry sectors responsible for such releases in descending order of magnitude are;

- 1) Chemical and allied products manufacturers
- 2) Primary metals industries
- 3) Fabricated metal products manufacturers
- 4) Printing, publishing and allied industries
- 5) Rubber and miscellaneous plastic products manufacturers

The 1986 National Survey of Hazardous Waste Generators (GENSUR) places Illinois eleventh on its ranking of states according to amount of hazardous waste generated. The relatively high ranking the state has on both these scales underscores the importance of an aggressive pollution prevention effort in Illinois.

The Illinois General Assembly has assisted the pollution prevention programs in the state by providing statutory support for their efforts. The Hazardous Waste Technology Exchange Act of 1984 (PA 83-1436) provided for the establishment of a technical transfer and information center in the Department of Energy and Natural Resources. The Toxic Pollution Prevention Act of 1989 (PA 86-914) established an office in the Illinois Environmental Protection Agency that was responsible for the promotion of pollution prevention in the state. This act was amended in 1990, extending the responsibilities of the information center.

Pollution prevention in Illinois is managed by two state offices. The Illinois Department of Energy and Natural Resources administers the Hazardous Waste Research and Information Center, an organization that provides technical assistance, pursues research issues and operates an information clearinghouse. The Illinois Environmental Protection Agency, the agency in charge of carrying out the regulatory requirements and assuring compliance, also coordinates the state's pollution prevention efforts through its Office of Pollution Prevention. This office administers a number of programs designed to promote pollution prevention within state government and the business community.

Illinois Department of Energy and Natural Resources Hazardous Waste Research and Information Center

The Hazardous Waste Research and Information Center (HWRIC) employs a multidisciplinary approach in its efforts to reduce the generation of hazardous waste in Illinois. Housed in the Hazardous Materials Laboratory on the campus of the University of Illinois (Urbana-Champaign), the HWRIC is a nonregulatory division of the Illinois Department of Energy and Natural Resources and is officially affiliated with the University. HWRIC serves a broad spectrum of Illinois citizens and organizations, applying advanced scientific techniques to the problems encountered in the handling of hazardous waste.

The HWRIC is regarded as one of the most integrated, active, and respected resources for pollution prevention information and solutions in the country. Operating with a full-time staff of 30 employees (which is occasionally supplemented by temporary employees and students) the Center researches issues and applies its knowledge to the problems facing hazardous waste generators. In addition, the Center's staff are also very active in promoting the goals of pollution prevention participating in workshops, seminars, and conferences nationwide.

The Illinois General Assembly provides the majority of the funding for the Center as a separate line item in the budget of the Department of Energy and Natural Resources. Most of these monies are appropriated from general revenue funds, although the state supplements these funds with approximately \$400,000 from a fee imposed by the state for the disposal of hazardous waste. The HWRIC also derives funding from a number of Federal Contracts including grants from the RCRA Integrated Technical Assistance (RITTA), Waste Reduction Innovative Technology Evaluation (WRITE), and PPIES/WRAS integration programs. The Center's total budget is in the neighborhood of \$2 million per year.

The HWRIC pursues its goals through six program areas:

- research on significant hazardous waste problems,
- information collection, analysis, and dissemination,
- industrial and technical assistance,
- training,
- data management,
- laboratory services.

Research. The HWRIC sponsors and/or performs various types of basic or applied research that directly impact pollution prevention issues. In addition to operating the Hazardous Materials Laboratory, the Center manages the "Recycling and Reduction Techniques" matching fund program as part of the Annual Governor's Pollution Prevention Award. The program is designed to encourage firms seeking practical solutions to hazardous waste handling problems by providing financial support for their ventures. Concerns interested in taking part in the RRT program are expected to provide funding or in-kind

services equal to or greater than the grant award. Upon completion of the project, grant recipients are to provide the HWRIC with a report suitable for publication under HWRIC cover. This program distributes approximately \$100,000 per year for pollution prevention research.

Information Collection, Analysis, and Dissemination. The HWRIC has developed and maintains an up-to-date clearinghouse of hazardous waste information. The library contains:

- hazardous waste reports, newsletters and books,
- a number of online information systems,
- materials for distribution including the Center's publications and research reports.

HWRIC personnel regularly conduct various kinds of outreach efforts, appearing before and participating in citizen group, trade and industrial association meetings and promoting the Center's belief in the value of waste reduction. The HWRIC also sponsors small-quantity generator compliance seminars statewide.

Industrial and Technical Assistance. The HWRIC provides direct technical assistance to industries, businesses, schools, governmental bodies and individual citizens on a case-by-case basis. HWRIC personnel provide the technical expertise needed to help solve waste management problems. Center personnel offer suggestions for better management of waste, process change options, regulatory compliance and referrals to other services and sources of help. Center personnel can also visit individual facilities, evaluate waste management procedures, and isolate opportunities for waste reduction.

Training. The HWRIC has implemented a pollution prevention training regimen in response to a mandate from the 1990 amendments to the 1989 Toxic Pollution Prevention Act. Under the guidance of the Center's director, Dr. David Thomas, the HWRIC worked as a subcontractor to the IEPA on the RITTA grant contract to develop a state training action plan and conduct demonstration projects designed to promote pollution prevention in the state. This contract was completed during December 1990.

Data Management. The HWRIC has devised and maintains the Waste Reduction Advisory System (WRAS), an interactive computerized waste management tool designed to increase a generator's knowledge of the wide range of options for reducing or recycling industrial waste. WRAS makes available to users the vast body of information collected by the HWRIC including summaries of technologies from the scientific literature and unpublished case studies.

Laboratory Services. This program became operational in April 1990. HWRIC operates the \$9 million Hazardous Materials Laboratory, a state of the art research facility that is used exclusively for the basic and applied research undertaken by the Center's staff.

The HWRIC has targeted the printing and chemical industry for cooperative pollution prevention activities. These groups were selected for special attention because they release the greatest amount of USEPA's 17 priority chemicals in the USEPA's 33/50 Project. Under the Center's WRITE program, two printing technologies (water-based inks in flexography and soy oil inks in lithography) are being evaluated. Pollution prevention assistance, including on-site assessments, is being conducted with printers in the Chicago area, paying particular attention to the release of ozone precursors. This assistance is funded through the PPIG grant. Also under PPIG, chemical facilities that are members of the Chemical Industry Council of Illinois have committed to participating in pollution prevention assessments.

In a related project, the HWRIC is evaluating methods for the reduction of waste during the manufacture, use and removal of paint. This project is a legislatively mandated study of technical and policy options.

Future activities of the HWRIC will focus the Center's staff on a number of specific pollution prevention goals. Included are plans to;

- put on six workshops addressing the pollution prevention opportunities in teaching and research laboratories,
- with a Waste Reduction Innovative Technology Evaluation grant, develop related pollution prevention projects with printers, electroplaters, and foundries,
- develop relevant curricula in engineering, chemistry, and business,
- survey the waste management needs of colleges and universities in Illinois.

Through its directed research activities, comprehensive technical assistance program, and well developed information gathering and dissemination capabilities, the HWRIC will remain a vital player in the pollution prevention efforts of Illinois and the nation.

Illinois Environmental Protection Agency Office of Pollution Prevention

In addition to its responsibilities for enforcing the environmental regulations and laws of the state of Illinois, the Illinois Environmental Protection Agency (IEPA) also serves the citizens of the state by providing active support to a number of pollution prevention programs. By sponsoring a number of non-regulatory programs, the IEPA intends to supplement the waste management efforts pursued by its enforcement wing with a focus on pollution prevention and the reduction in the amount and toxicity of waste generated in the state.

The coordination of these programs is the responsibility of the IEPA's Office of Pollution Prevention (OPP). The OPP is funded through a combination of solid waste disposal fees, air pollution permitting fees, and a pollution prevention grant from the USEPA. The budget for the OPP is approximately \$400,000.

The OPP assists Illinois business and industry in their pollution prevention efforts through its support of four programs; the Voluntary Toxic Pollution Prevention Innovation Plan Program, the IEPA Pollution Prevention Internship Program, the Industrial Materials Exchange, and the Partners in Prevention Program. In addition to supporting these programs, the OPP is also responsible for promoting the idea of pollution prevention in state agencies and coordinating the state's efforts with the efforts of other states and the federal government.

Voluntary Toxic Pollution Prevention Innovation Plan Program

The Illinois Toxic Pollution Prevention Act of 1989 charges the IEPA with encouraging Illinois industries to participate in pollution prevention activities by providing expedited review of permit applications, support of variance petitions or support of site specific rule or adjusted standard petition. Support is contingent upon the approval of an innovation plan which satisfies the criteria in the Toxic Pollution Prevention Act. The Voluntary Toxic Pollution Prevention Innovation Plan Program is designed to provide such support.

To date, there has been one company which has worked with this program in an effort to redefine its permit requirements as they relate to the disposition of the waste ash from an electric arc furnace it uses in a metal refining process. In refining zinc ore, the process used by the company produced a waste ash that contained unacceptable levels of zinc, lead, and cadmium. The company searched for and found technology available in Norway that might help them reduce the amount of metals waste produced. Once the technology was operational, the company found that they were able to recover all of the zinc and lead that had been present in the waste ash. The levels of cadmium found in the ash turned out to be below the level of cadmium present in normal unrefined zinc ore. The company maintains that its major motivation for installing this equipment was economic. The process allowed them to reuse raw materials that would otherwise have been wasted in addition to reducing their waste disposal costs. The company worked with the IEPA to adjust permitting procedures, allowing them to handle this ash which now contains only cadmium in a manner not covered in previous permits.

The program has also been contacted by a company that produces packaging materials for meat packaging industry. The company is seeking support for an alternate standard in their air emissions requirements as they recapture a certain particulate from these emissions. The IEPA is working with this company along the lines set out by this program.

The OPP intends to promote this program more aggressively in the future. As the program develops a track record of assisting business pursue their pollution prevention goals, it is anticipated that businesses will become more interested in participating in it.

IEPA Pollution Prevention Internship Program. The IEPA uses this program to target specific pollution prevention projects, establish pollution prevention goals with the industry and help the industry achieve those goals

by providing engineering students to work onsite as interns. The program selects major generators of hazardous waste for participation in this program based on reported releases under SARA Title III legislation.

Before work starts, program staff and company personnel get together with the intern to come up with pollution prevention goals and a workplan through which these goals will be pursued. The interns receive training and technical support from program staff. They report and work at the cooperating facility and operate under their supervision. The confidentiality of the companies involved is respected at all times.

The Pollution Prevention Internship Program plans to continue operations as they are for some time to come.

Illinois Industrial Materials Exchange Service. Operated by the OPP in cooperation with the Illinois State Chamber of Commerce, the Illinois Industrial Materials Exchange Service (IMES) acts as an information clearinghouse, directory and marketing facilitator for companies possessing hazardous and non-hazardous materials that might otherwise be wasted. Although the IMES is never involved in handling the actual exchange of the material, it does publish information about materials available or desired for exchange. This information is then distributed free of charge to over 10,000 subscribers to the service nationwide. Client confidentiality needs are respected at all times.

Although the IMES, as a waste exchange, usually would not be defined as a pollution prevention program, its extensive client list makes it a resource that bears mentioning in this context. The IMES has pursued the concept of a single national clearinghouse for this kind of information in cooperation with USEPA but this idea has run into a number of roadblocks and has been shelved for the time being.

Partners in Prevention Program. The newest program sponsored by the IEPA, the Partners in Prevention Program (PIP), is designed to promote a cooperative approach to pollution prevention by bringing businesses voluntarily into the process and allowing them to show the extent to which they are taking part in pollution prevention activities. With a startup date of April 1, 1991, the PIP program intends to use its cooperative structure to assist both business and government exchange information and continue dialogue in such a way as to develop cogent pollution prevention plans and implementation vehicles.

Companies eligible to participate in this program as a Partner in Prevention are classified within SIC codes 20-39 and either generate 100,000 gallons of hazardous waste per year or report the release of more than 100,000 pounds of toxic chemicals per year. Business or industry organizations will also be allowed to participate on behalf of their memberships. Small businesses are encouraged to cooperate with one another and take part in the program through these kinds of groups. A Partner in Prevention will take part in the following activities:

-
-
- the designation of one or more pollution prevention facilitators,
 - the execution of an opportunity assessment for pollution prevention,
 - participation in PIPNET (the Partners in Prevention Network, a system set up to facilitate information and technology transfer between member businesses),
 - the adoption of a suitable policy statement for pollution prevention,
 - the development of a process for pollution prevention planning, including a means for community outreach,
 - the submission of a semi-annual progress report to the IEPA,
 - the implementation of appropriate pollution prevention planning and action on the results including the establishment of meaningful community outreach.

Within this program there also exists provisions for special types of participation at something less than the full Partner level. A Sustaining Partner will have already made some strides in the way of pollution prevention, including the development of a planning process, and will provide information relating to their experience to other members. Smaller companies could keep informed as to PIP activities through an Associate Partnership, which will allow them to access PIPNET in search of pollution prevention opportunities that may be appropriate for their business.

A Pilot Project

The Hazardous Waste Research and Information Center has instituted a pilot project in cooperation with the Illinois EPA that seeks to provide technical assistance to fifteen target industries. These industries were chosen by the IEPA in consultation with the HWRIC's Industrial and Technical Assistance staff. This project, among other things, is looking at reducing the use of solvents for cleaning during paint packaging, experimenting with alternative solvents for use in cleaning printed circuit boards, and evaluating closed-loop water reuse in plating printed circuit boards through ion exchange treatment.

Summary

The state of Illinois has developed a sophisticated, technically adept, and proactive pollution prevention campaign. Its efforts have gained it a national reputation as one of the leading states in the development of pollution prevention activities. The solid background and technical assistance work provided by the Hazardous Waste Research and Information Center, in combination with the innovation and business outreach of the Office of Pollution Prevention, gives the state a comprehensive, vertically and horizontally integrated system to promote these types of solutions for environmental problems.

The Department of Energy and Natural Resources' Hazardous Waste Research and Information Center is regarded as one of the leading institutions of its kind in the country. The Center brings a multidisciplinary focus to all its activities, drawing on its rich resource base as it provides technical assistance, operates an information clearinghouse, pursues research issues, and conducts business and agency outreach. With the recent completion of the

Hazardous Materials Laboratory, the Center is able to provide a permanent home for their research projects which are the backbone of their technical assistance and data management pursuits.

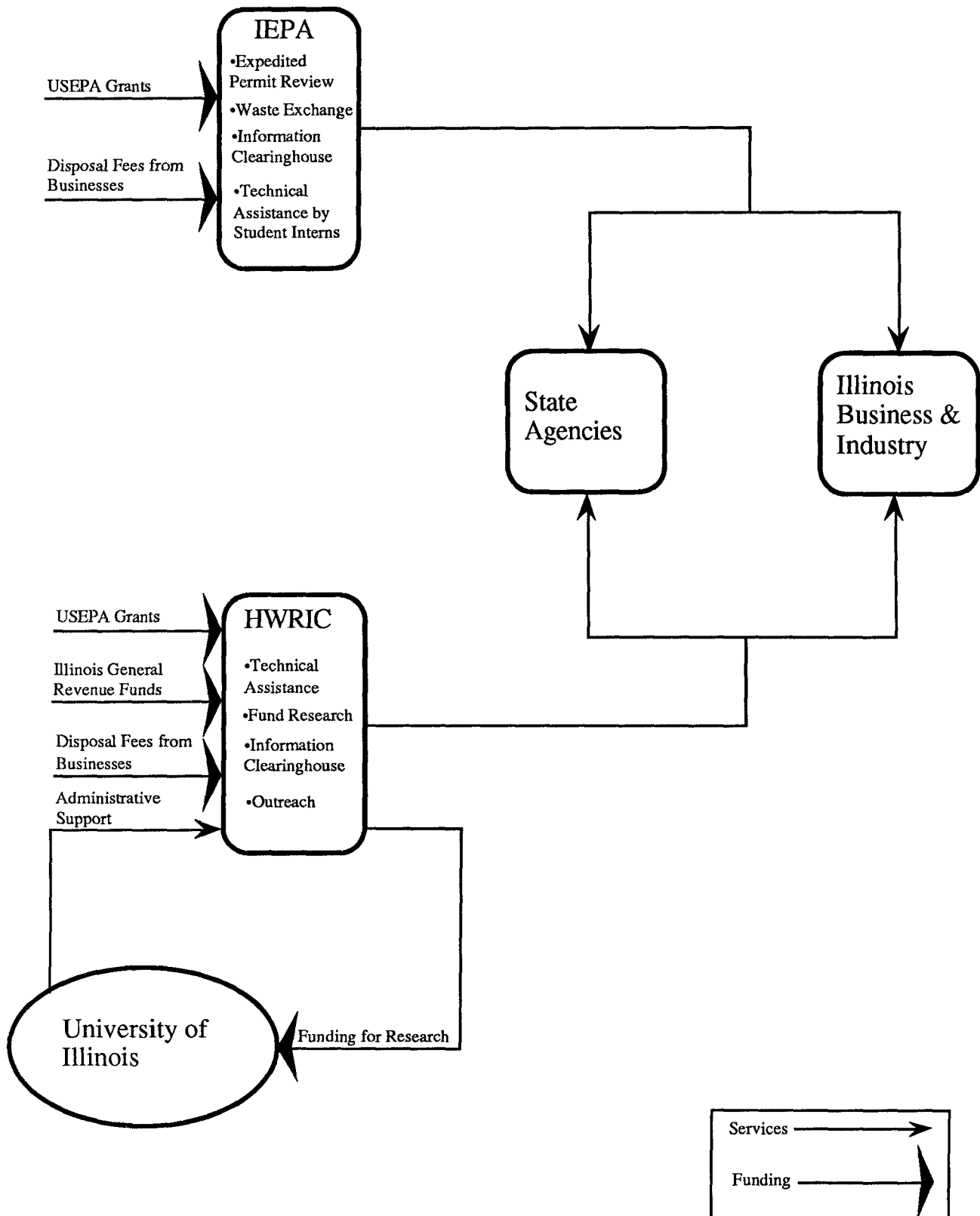
The Office of Pollution Prevention, the non-regulatory wing of the Illinois Environmental Protection Agency, attempts to bring the business community into the pollution prevention effort as partners with government through the four programs it manages. The OPP programs are designed to assist business as they pursue pollution prevention by providing resources and favoring innovation rather than dictating abstract goals. These programs, with the exception of the IMES waste exchange, are relatively new.

The combination of all these programs provides Illinois with unusual depth and breadth in the form of their pollution prevention efforts. The legislatively sanctioned offices use available federal grant money coupled with state funds to pursue prevention. In addition to technical assistance, information clearinghouse, training, and community outreach efforts, the Illinois programs offer the background services of providing basic and applied research as well as the permitting flexibility of the innovative plans approach. The solid infrastructure of reliable programs, coupled with the already institutionalized incentive for business to find innovative ways of dealing with their hazardous waste problems, bodes well for pollution prevention efforts in Illinois in the future.

For more information contact: David L. Thomas
Director
Hazardous Waste Research and Information Center
One East Hazelwood Drive
Champaign, IL 61820
(217) 333-8940
(217) 333-8944 Fax

Mike Hayes
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62796-9276
(217) 782-8700
(217) 524-4959 Fax

Pollution Prevention in Illinois



Pollution Prevention in the State of Indiana

The state of Indiana has been involved in pollution prevention issues since 1985. Recently, efforts in the state have expanded from simple regulatory technical assistance to information gathering, permit process review, and training for government and industry.

According to the 1988 Toxics Release Inventory National Report, the state of Indiana ranks fourth in the country in terms of reported releases of toxic chemicals to the environment. The top five industry sectors responsible for such releases in descending order of magnitude are;

- 1) Primary metal industries
- 2) Chemical and allied products manufacturers
- 3) Rubber and miscellaneous plastic products manufacturers
- 4) Electrical machinery, equipment and supplies
- 5) Transportation equipment manufacturers

The 1986 National Survey of Hazardous Waste Generators (GENSUR) places Indiana twelfth on its ranking of states according to amount of hazardous waste generated. Not usually thought of as an industrial center, these high rankings point out the importance a pollution prevention effort has for this state.

The Indiana Legislature has enacted two pieces of legislation that set the groundwork for the development of proactive pollution prevention activities. The 1990 Amendment to the Environment Code calls for the establishment of a Division of Pollution Prevention in the Department of Environmental Management. This Division will be responsible for promoting pollution prevention in state agencies and will coordinate outreach and educational efforts. The 1990 Comprehensive Solid Waste Planning Bill provided for the inclusion of pollution prevention activities as they relate to solid waste handling issues.

In Indiana, pollution prevention efforts spring from two sources. The Purdue University School of Civil Engineering administers two grant based programs; the Indiana Point-Source Pollution Prevention Program for Agricultural Industries and the Environmental Management and Education Program's Indiana Pollution Prevention Program. The Indiana Department of Environmental Management administers the state sponsored Indiana Pollution Prevention Project.

Purdue University School of Civil Engineering Environmental Management and Education Program Indiana Point-Source Pollution Prevention Program for Agricultural Industries

The Indiana Point-Source Pollution Prevention Program for Agricultural Industries was founded as a non-regulatory effort to protect land, air, surface and groundwater by promoting careful use of agrichemicals and farm

implement fluids. The Program also promotes the careful use, storage, and disposal of animal wastes in the farm environment. Targeting the entire range of agribusinesses, the program seeks pollution prevention opportunities among livestock and crop producers, fertilizer, chemical and implement dealers, feedlot operators, Extension agents, lawn care firms, and home pest control operators.

Purdue University's Environmental Management and Education Program initiated this program in December of 1990 as the result of a three year, \$300,000 agreement with the USEPA. The Purdue University School of Agriculture has added \$33,333 of in-kind support for the program.

The Point-Source Pollution Prevention Program pursues its mission through two avenues. The program attempts to sensitize its target audience to pollution prevention methodologies through various educational vehicles. The program will organize an advisory council (the Indiana Agricultural Industry Pollution Prevention Advisory Council), which will represent all segments of the industry to advise the Pollution Prevention Program and promote its objectives and activities among the Council members' constituencies. An inventory of pollution prevention practices, technologies, and programs that relate to point-source agriculture pollution will be compiled by program staff. A technical assistance manual will be prepared for Cooperative Extension Service agents using this information. Program staff will also provide training for Extension agents concerning the identification, analysis and resolution of potential pollution prevention situations. In addition, the program staff will develop a curriculum module on pollution prevention to be included in the pesticide applicator certification training program.

The program also uses technical assistance to promote the use of pollution prevention techniques. The program will provide on-site pollution prevention assessments, hold four workshops a year for members of the state's agricultural industries, and establish an information "hot-line" to respond to inquiries concerning the use, storage and disposal of potential pollutants. In addition, the program will publish a periodic newsletter to distribute to its target audiences.

Since the program is in its infancy, many of the above activities are in the earliest stages of development. As these basic activities take hold, program staff plan to become more involved in incorporating pollution prevention into some services provided to agribusiness. The program staff will investigate the possibility of setting up a network of implement fluid and battery recycling centers in targeted counties. These centers will be located at locations or businesses frequented by farmers. Staff will also look into establishing regularly scheduled farm chemical "clean-up" days which would encourage farmers to bring outdated, cancelled and suspended chemicals to a county location for analysis and transport to a treatment or disposal facility.

Purdue University School of Civil Engineering Environmental Management and Education Program The Indiana Pollution Prevention Program

In an effort to educate small and medium sized businesses regarding multi-media source reduction, the School of Civil Engineering at Purdue University has established the Indiana Pollution Prevention Program (IPPP). The Indiana Department of Environmental Management, in partnership with Purdue University, was awarded a three-year, \$300,000 Source Reduction and Recycling Technical Assistance Grant by the USEPA. Grant administration responsibilities were then turned over to the Environmental Management and Education Program at Purdue.

With an annual budget of \$100,000, the IPPP is staffed by a full time coordinator and a part time graduate assistant. The program targets smaller businesses in Indiana, including small quantity generators, for technical assistance and pollution prevention education. Using the Toxics Release Inventory Report to isolate hazardous waste generators, staff is attempting to concentrate its efforts on generators that produce the seventeen chemicals targeted by the EPA's 33/50 Project. The IPPP also operates the Indiana Waste Exchange Program.

Technical assistance is normally provided to industry by means of direct on-site pollution prevention assessments. The Project Coordinator performs these assessments as well as advising and providing guidance for graduate students as they participate in the assessment process. The IPPP also makes a toll-free telephone line available for businesses in Indiana to contact program personnel with their pollution prevention questions.

The educational component of the program's mission is pursued by providing information on pollution prevention to industry through toll free access to the national PIES system. The IPPP also conducts regular conferences and workshops for industry. These educational and outreach sessions are also somewhat targeted to industries that produce chemicals on the list of the EPA's 33/50 Project.

A Success Story

On April 9, 1991, the Purdue University Pollution Prevention Program hosted a conference called "Pollution Prevention in the Electroplating Industry." The conference was co-sponsored by the Indiana Department of Environmental Management, the Indianapolis and St. Joseph Valley Branches of the American Electroplaters and Surface Finishers Society, and the Indiana Association of Metal Finishers.

The conference concentrated on promoting pollution prevention as a cost effective management tool to increase process efficiency, thereby decreasing regulatory and management costs and liabilities. It was designed to show attendees that several companies have used pollution prevention methodologies to successfully deal with the myriad of environmental pitfalls faced by the industry. Speakers at the conference were drawn from industry, regulatory agencies and research institutes. Topics discussed included;

-
- an overview of waste reduction technology,
 - a discussion of the impacts on electroplating operations of the new Clean Air Act,
 - various discussions of waste reduction in specific electroplating processes,
 - a number of waste reduction case studies.

The sponsors of the conference attempted to bring as many industry personnel as possible to the conference by keeping the registration fee low (\$25.00 which included lunch). Their efforts along these lines were successful. The conference was attended by 168 people, the majority of whom work directly in the electroplating industry. The platers not only learned from the presentations, but also were able to make connections with sources of technical information, which they will be able to tap into in their efforts to incorporate pollution prevention in their processes.

Responses by attendees to this conference were overwhelmingly positive. Continuing contacts for technology transfer were established, which will lead to the reduction in the amount and toxicity of hazardous waste generated by electroplating shops in the state.

Indiana Department of Environmental Management Office of Pollution Prevention and Technical Assistance Indiana Pollution Prevention Program

Although it shares the name of the pollution prevention program administered by the Purdue School of Civil Engineering, this program is part of the Indiana Department of Environmental Management (DEM), Indiana's environmental regulatory arm. The 1990 Amendment to the Indiana Environmental Code called for the creation of an Office of Pollution Prevention which was to combine with the existing Office of Technical Assistance. The newly formed Office of Pollution Prevention and Technical Assistance (OPPTA) initiated the Indiana Pollution Prevention Program in order to promote the functional concepts of the philosophy to Indiana's citizens.

This Indiana Pollution Prevention Program draws its \$300,000 annual budget from general revenue funds and various federal grant programs. Program staff anticipate an increase in their budget for next fiscal year, but such an increase has not yet been approved by the Legislature.

The Pollution Prevention Program's goal is to encourage pollution prevention practices in business, industry and the general public. It will employ three strategies intended to accomplish this goal;

- develop ways to incorporate pollution prevention strategies into the regulatory process,
- advance pollution prevention initiatives in the regulated community through technology transfer and technical assistance,
- promote the pollution prevention philosophy to all citizens of Indiana through educational programs.

As the first attempt on the part of the state to put together a comprehensive pollution prevention program, a good deal of staff time has been taken in the review of current regulatory policy and the collection of comparative data from similar programs in other states. The majority of the program staff have experience in a regulatory environment and, as such, have the necessary experience to make real strides in incorporating pollution prevention goals and objectives into the state's regulatory framework. Staff is paying particular attention to working with the permitting process as a means of stimulating private sector interest in pollution prevention techniques.

In merging with the already existing Office of Technical Assistance (OTA), the Pollution Prevention Program was able to take advantage of the pre-existing technical assistance infrastructure and begin making pollution prevention technical assistance available almost immediately. In fact, the OTA has been providing compliance and waste minimization advice to industry under its previous mandate for about four years. Program personnel have, as part of the technical assistance aspect of their work, been visiting facilities to conduct on-site pollution prevention audits.

The program has also begun compiling technical information on various pollution prevention issues in an effort to build up a full-fledged information clearinghouse. The program has also made available a toll-free telephone line to provide access for industry to technical assistance.

The Indiana Pollution Prevention Program has been sponsoring a series of conferences and workshops to educate various sectors of the population on pollution prevention issues. Five of these workshops have been held since the January 1, 1991. The latest of these concentrated on practical solutions to pollution prevention problems in the electroplating industry.

Future activities for the Indiana Pollution Prevention Program include;

- expansion in the range of technical assistance and assembling case study information,
- development of a pollution prevention newsletter,
- development of a program for the training of inspectors, enforcement and permit personnel,
- development of a public education program.

Pending the legislative approval of the state budget, some or all of these activities will be implemented.

Governor's Award Program

The state of Indiana sponsors an awards program designed to recognize businesses that distinguish themselves in their efforts at waste minimization. The Annual Governor's Awards for Waste Minimization have been awarded to, among others, the Chrysler Corporation for waste water treatment reclamation and source substitution techniques, and Lilly Industrial Coatings Inc. of Indianapolis for their waste auditing, source substitution methods and recycling of waste stream byproducts.

Summary

The state of Indiana is developing its pollution prevention presence through a combination of state sponsored nonregulatory efforts and university based grant sponsored programs. The state programs emphasize technical assistance and workshop-style educational efforts. A special emphasis has been placed on addressing unique problems experienced by the agricultural community as they handle toxic substances and animal waste through the Point-Source Pollution Prevention Program for Agricultural Industries. General pollution prevention technical assistance is available from two different programs, one university based and the other based in the state regulatory agency.

The Indiana Point-Source Pollution Prevention Program for Agricultural Industries provides technical assistance, technical information and educational resources. Its intent is to protect the environment by reducing or eliminating the potential for pollution from point-source locations where agrichemicals, farm implement fluids and animal wastes are produced, used, stored and/or disposed. The program plans to expand to higher visibility activities such as opening up a hotline, targeting news releases to the appropriate periodicals and publishing a newsletter.

Purdue University's Indiana Pollution Prevention Program concentrates its efforts on promoting pollution prevention and recycling to small and medium sized businesses. In addition to providing on-site and telephone technical assistance and education, this program also operates the Indiana Waste Exchange.

The Indiana Department of Environmental Management's Pollution Prevention Program provides technical assistance to industry and government as well as training, education and regulatory innovation for state agency personnel on pollution prevention issues. Taking the infrastructure from an already existing technical assistance office, this program intends to be very proactive as it expands its range of responsibility and influence, creating pollution prevention opportunities in industry and using the permitting process to encourage participation in its efforts.

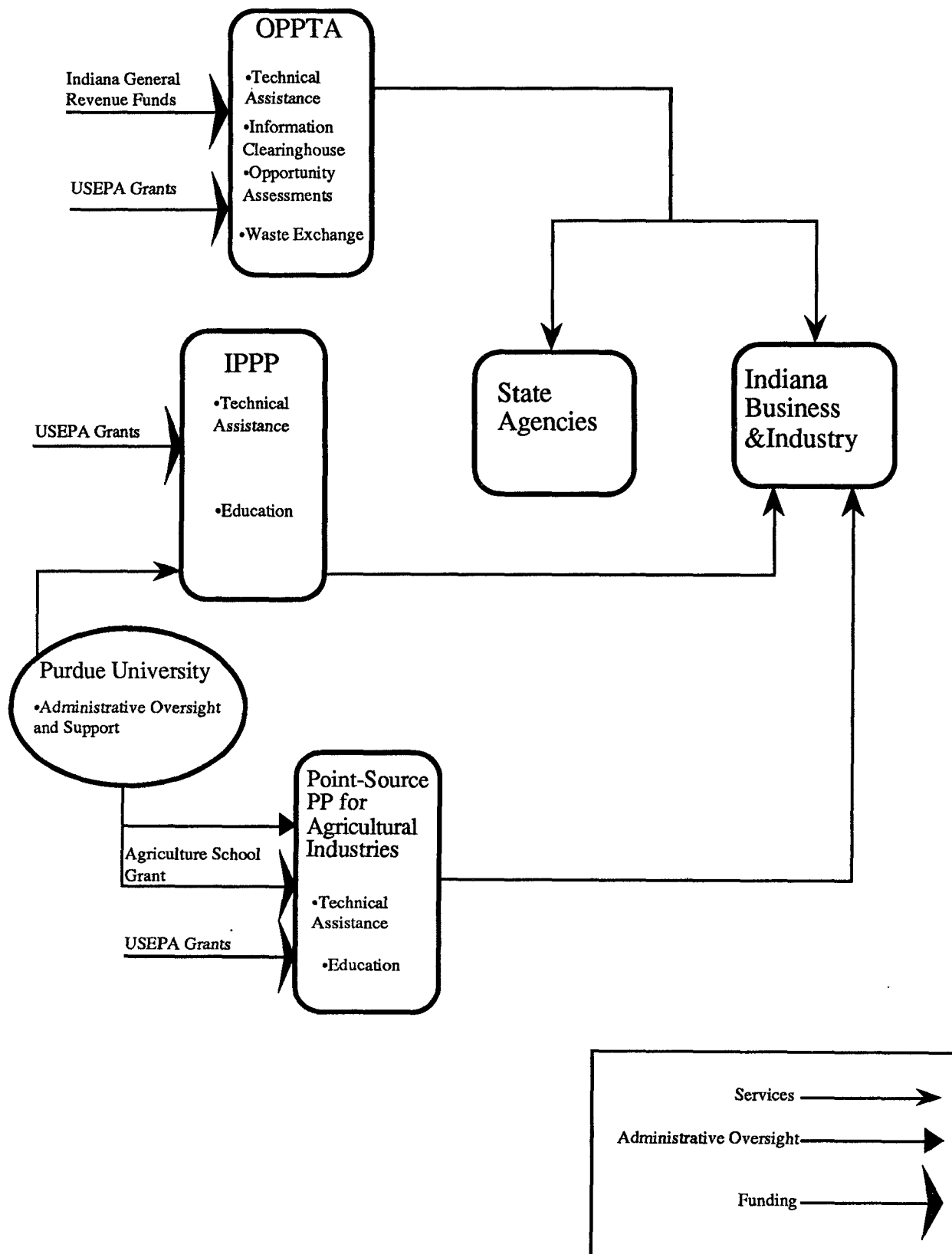
Although pollution prevention has been dealt with in one form or another in Indiana since around 1985, a solid base of operations has only recently developed. With the formation of the Indiana Office of Pollution Prevention and Technical Assistance, the cause of pollution prevention was given funding and a permanent home. The staff of this office is working hard on developing a comprehensive pollution prevention policy as well as continuing to expand the range of technical assistance available. Purdue University has also entered the pollution prevention effort in the state and has provided the necessary link between the basic and technical resources of the university community and the real problems in the private sector. If these programs are able to continue receiving funding, they will become much more successful in their efforts to reach business and help alter the industry practices that lead to pollution.

For more information contact: Jeff Burbrink
Coordinator
Indiana Point-Source Pollution Prevention
Program for Agricultural Industries
Environmental Management and Education Program
Civil Engineering Building
Purdue University
West Lafayette, IN 47907-1284
(317) 494-5036
(317) 494-6422 Fax

Rick Bossingham
Coordinator
Indiana Pollution Prevention Program
Purdue University
School of Civil Engineering
Environmental Management and Education Program
1284 Civil Engineering Building
West Lafayette, IN 47907-1284
(317) 494-5038
(317) 494-6422 Fax

Joanne Joyce
Indiana Pollution Prevention Program
Office of Pollution Prevention and Technical Assistance
Indiana Department of Environmental Management
105 South Meridian St.
P.O. Box 6015
Indianapolis, IN 46206-6015
(317) 232-8172
(317) 232-8564 Fax

Pollution Prevention in Indiana



Pollution Prevention in the State of Michigan

The state of Michigan has been using pollution prevention as a viable option in its dealings with industrial waste since 1987. The state has paid particular attention to the ways in which industry views pollution prevention. It will use this information to minimize industry's misconceptions about this issue and maximize generator participation.

According to the 1988 Toxics Release Inventory National Report, the state of Michigan ranks eighth in the country in terms of reported releases of toxic chemicals to the environment. The top five industry sectors responsible for such releases in descending order of magnitude are;

- 1) Primary metals industries
- 2) Chemical and allied products manufacturers
- 3) Transportation equipment manufacturers
- 4) Fabricated metal products manufacturers
- 5) Paper and allied products manufacturers

The 1986 National Survey of Hazardous Waste Generators (GENSUR) places Michigan third on its ranking of states according to amount of hazardous waste generated. The predominant industries in Michigan (automotive in the east and furniture manufacture in the west) and the processes allied with these industries are traditionally heavy users of toxic paints and chemicals. The environment of the state could clearly benefit from any reduction in the amount of waste generated in these industries.

The Michigan Legislature, through a number of statutes enacted in late 1987, created three entities intended to spearhead pollution prevention efforts in the state:

- The Environmental Technology Act (PA 222) created the Environmental Technology Board. The Board was charged with reporting to the Governor and the Legislature by June 1989 on ways in which the state could best support research on pollution prevention issues.
- The Waste Minimization Act (PA 245) created the Office of Waste Reduction in the Department of Natural Resources. The Office of Waste Reduction was intended to identify regulatory barriers to pollution prevention, analyze pollution prevention opportunities in various industrial sectors, and make recommendations as to the best way to encourage pollution prevention through the regulatory process.
- The Waste Reduction Assistance Act (PA 247) created the Waste Reduction Assistance Service in the Department of Commerce. The Waste Reduction Assistance Service was intended to provide educational and technical assistance to businesses seeking to

implement pollution prevention techniques.

Eventually these three entities were reorganized into the Office of Waste Reduction Services.

Grand Valley State University's Waste Reduction and Management Program, part of GVSU's Water Resources Institute, also provides information, education, and technical assistance for industries interested in preventing pollution in their manufacturing processes.

Departments of Commerce and Natural Resources Office of Waste Reduction Services

Enacted by the Michigan Legislature, Public Acts 245 and 247 created the Office of Waste Reduction Services (formerly the Waste Reduction Assistance Service) in the Department of Commerce and the Office of Waste Reduction in the Department of Natural Resources. In order to minimize any duplication of effort on the part of these organizations, the departments decided to implement their mandated pollution prevention effort through a jointly-managed Office of Waste Reduction Services. The two departments formalized this arrangement through a Memorandum of Understanding.

The Office of Waste Reduction Services (OWRS) is a non-regulatory state office whose mission is to assist Michigan businesses and institutions reduce the volume and toxicity of the waste they generate. OWRS takes as its central principle that the prevention of waste generation is key to the long term health of the environment and the economy.

Operating with a staff of 13, the OWRS conducts outreach and educational programs intended to show Michigan business the benefits of adopting pollution prevention practices. The OWRS attempts to develop pollution prevention expertise in the business, university and public communities through the program's active support of their efforts. The OWRS is also involved in a variety of projects designed to help them develop a greater understanding of their clientele and the environment in which they operate. The OWRS has undertaken such projects as a way to better direct their efforts and provide the most accurate and efficient information and assistance to their clientele.

The program is funded through both the Department of Commerce and the Department of Natural Resources. The program's budget of 1.4 million dollars is appropriated from the state's General Revenue Funds. The status of 1992 budget is uncertain to the extent that belt-tightening measures in the state may affect the status of this program.

The activities of the OWRS are divided into three categories:

- Administration
- Technical Assistance Services
- Information Services

Administration. In addition to managing the operations of the program, this section is responsible for developing program direction. Staff in this section interact on a continuing basis with the Departments of Commerce and Natural Resources, as well as with the Legislature and the Governor on matters relevant to pollution prevention.

Technical Assistance Services. The OWRS has a full-time technical assistance staff of six which provides two levels of technical assistance to industries or institutions on pollution prevention issues.

The program has targeted the electroplating, paint and allied products manufacturing, and paint and coatings industries for special attention. The OWRS is able to provide assistance to companies in these industrial sectors through site visits and telephone consultations. The technical assistance staff conducts research into waste generation, emissions release, pollution prevention potentials, and pollution prevention techniques that relate to these targeted industries. One technical assistance staff member's sole responsibility is the collection and integration of this data into the body of information available to the technical assistance staff.

The OWRS is also making a special effort to promote pollution prevention in the automotive industry. One staff person's time is dedicated to acting as liaison to that industry.

Technical assistance is available for industries outside the targeted sectors, but this assistance is limited to telephone consultations and educational materials. As part of their research effort, the staff is developing information on processes common to diverse industries for which pollution prevention potential exists. The technical assistance personnel could then use this information to help direct individuals from a variety of industries to tried and true methods of pollution prevention. Staff is also conducting a survey of Michigan manufacturers concerning attitudes and pollution prevention potential. These efforts are intended to broaden the base of pollution prevention assistance available from the OWRS.

Information Services. The educational aspect of the program's mission is seen as the key to spreading the use of pollution prevention methodologies throughout the state. The OWRS uses a variety of information dissemination techniques to promote the incorporation of pollution prevention methodologies into business and institutional operations.

OWRS sponsors a number of workshops and an annual statewide "Roundtable" that bring together interested parties to exchange information and discuss issues pertinent to pollution prevention. Other outreach activities include meetings with business and trade associations, the assessment of client training needs, an extensive list of publications, and a periodic newsletter.

The staff of this section is very active in monitoring client intake and service evaluation. The OWRS uses a computerized tracking system to monitor the

level of assistance provided to each client and the degree to which each client is satisfied with that assistance. This process helps the OWRS identify specific client and industry needs.

Future activities for the OWRS will focus on the program's outreach efforts. Staff has been instructed to design and implement a waste reduction awards program. They have also been working on setting up an information clearinghouse to help business and industry benefit from the pollution prevention experience of others. Of course any expansion in services is contingent upon the budgetary decisions of the Legislature.

A Success Story

The Michigan OWRS has published twenty documents directly related to pollution prevention and waste reduction issues. These publications are available free of charge to its clientele in Michigan. Titles include:

- Why Reduce Waste?
- Waste Reduction- Getting Started
- Reduce Waste: Increase Your Corporate and Product Image
- Waste Reduction Overview
- Waste Reduction Checklist
- Reducing Office Paper Waste
- Reducing Corrugated Cardboard Waste
- Waste Exchange: Everybody WINS
- Procuring Recycled Products
- Conservation Tips for Business
- Selecting a Supplier, Hauler, and Materials Broker
- Michigan's Solid Waste Reduction Strategy
- Glossary of Waste Reduction Terms
- Case Study/ United Technologies
- Michigan Recycled Materials Market Directory
- Managing Used Containers
- Reducing Machine Coolant Waste
- Solvent Reduction in Metal Parts Cleaning
- Considerations in Selecting a Still for On-Site Recycling
- Guide to Establishing a Successful Waste Reduction Program

Grand Valley State University Water Resources Institute Waste Reduction and Management Program

Formed in 1986, the Water Resources Institute (WRI) conducts educational programs and research related to the water resource needs of its constituency in western Michigan. WRI is the first full-fledged research organization located at Grand Valley State University. Operating with a permanent staff of nine people, WRI draws faculty research associates from several different

University departments. It defines its mission as being "dedicated to preserve, protect, and improve our water resources."

In an effort to assist small business and industry cope with environmental compliance, waste reduction and management issues, the Water Resources Institute established the Waste Reduction and Management Program (WRAMP) in 1990. Direction for WRAMP's activities is provided by the Industrial Advisory Board, a group of business and industry representatives interested in waste reduction. WRAMP draws on the resources of Grand Valley State University to provide interested businesses with the educational and technical tools they need in order to manage their waste streams and create pollution prevention strategies appropriate to their particular industry.

As part of this effort, WRAMP has conducted a waste assessment survey which was intended to help identify the extent to which businesses in Michigan have implemented pollution prevention efforts. Approximately 900 businesses were surveyed in an effort to get a realistic picture of how the private sector views the problems of hazardous and non-hazardous waste disposal. The questions asked on the survey have been designed to test a company's current waste generation and disposal patterns as well as its predisposition toward recycling and pollution prevention. WRAMP uses the survey data in directing its technical assistance and pollution prevention information collection efforts by helping them target industries where significant waste is generated and attitudes are conducive to incorporating pollution prevention methodologies. A report of the findings of this survey is available from WRAMP.

Businesses that appear to have successful pollution prevention strategies and processes as reflected in their responses to the survey will be invited to join the Industrial Advisory Board. The Industrial Advisory Board is intended to provide a forum through which business and industry are able to exchange ideas, information and solutions. The Board is currently composed of thirty members from a variety of industries including furniture, chemical, plastic and fabricated metal manufacturers, retail outlets, scrap iron dealers, and a resource recovery firm.

WRAMP draws its funding from a three year grant from private industry (\$33,000 per year) and a portion of Grand Valley State University's Research for Excellence Fund. The five person staff provides a variety of services including:

- information collection and dissemination,
- telephone and on-site technical assistance,
- educational outreach.

Information Collection and Dissemination. In order to make the most up to date information on pollution prevention issues available to Michigan industries, WRAMP has been assembling a library of fact sheets from other pollution prevention programs, current books on the subject, and relevant EPA documents. This includes information on the model firms selected from the

Advisory Board survey as good examples of pollution prevention in action. WRAMP is also working on assembling a library of regulatory compliance software.

Possibly the most important information dissemination tool for WRAMP is the periodic newsletter published by WRI. The Water Resources Review provides WRAMP with a vehicle for publicizing their activities, research findings, and information clearinghouse contacts.

Telephone and On-Site Technical Assistance. The program's access to the USEPA Pollution Prevention Information Clearinghouse in addition to the resources of Grand Valley State University provides WRAMP's staff with a formidable body of knowledge to draw on when they are providing technical assistance to business and industry. The program has one consulting engineer to provide assistance to users requesting information on the newest solutions to particular pollution prevention problems. WRAMP is also able to provide the most current information and assistance regarding new regulatory developments.

Educational Outreach. WRAMP has held a number of seminars and given presentations to a variety of groups in both the private and public sector. The program has conducted outreach presentations to engineers, local community groups and public officials, and furniture fabricators. The program is planning an industrial waste minimization conference to be held in October 1991.

WRAMP is developing computer software capable of tracking waste products. Such software will assist pollution prevention efforts by allowing companies to closely monitor the volume, toxicity, and paths taken by the various wastes they generate.

WRAMP will be working with the Industrial Advisory Board to identify more companies that have reduced the waste they generate by applying a variety of pollution prevention techniques. By publicizing the successes of these companies, WRAMP will promote the concept of pollution prevention as a means of reducing the difficulties of waste management.

In addition to the efforts of WRAMP, the Grand Valley State University School of Engineering is conducting a pollution prevention research and demonstration project intended to develop curricular materials and teaching methods that will sensitize engineers to the effect the products they design have on the environment. "Design for Recycling: Solving Tomorrow's Problems Today" has as its overall objective to reduce the amount of solid waste generated in the future by making undergraduate students aware of a concept of product design which takes into account the entire lifecycle of the product. This project is funded by the Padnos Foundation and the Michigan Department of Natural Resources.

The project is divided into four phases:

- 1) Product Survey — a survey of existing products will be conducted

to identify those that could be easily recycled if they had been designed differently.

- 2) Prioritization — ten products will be chosen from the survey and prioritized according to their potential for any change that would make them easier to recycle.
- 3) Engineering Design Seminars — a series of design seminars will focus engineers, manufacturers and engineering faculty on innovative ideas and technologies that can be used to promote recycling.
- 4) Curricular Materials — incorporating information from the product survey and the Design Seminars, curricular materials will be developed to assist engineering faculty in their efforts to indoctrinate students in design with end-stage product management in mind. Some of these curricular materials (projects, workbooks, readers) will be directed at freshman-level engineering students while others (collected design projects and criteria that aid students in their efforts to design for recycling) are directed at senior-level students.

“Design for Recycling” will also receive input from the Industrial Advisory Board, business leaders, and other professional educators. Drawing on the extensive experience of these individuals, the project team is hopeful that “Design for Recycling” will be able to positively impact future product design and reduce the overall volume of waste generated in this country.

WRAMP Success Stories

WRAMP recently co-sponsored with OWRS the first annual West Michigan Waste Exchange Expo in Holland, Michigan. This one day event brought together business owners, facility managers, government officials, and other concerned parties in an effort to promote the establishment of informal waste exchanges and educate participants as to the most current technology relating to solid waste management issues. In addition to more than 30 exhibits from companies and organizations involved in waste management issues, presentations on a variety of issues directly affecting the difficulties and advantages of participating in a waste exchange. Included were discussions of:

- the legal liabilities of waste management,
- the economic advantages of pollution prevention and recycling,
- the difficulties of handling waste materials,
- product design and materials use issues.

An interactive computer software program, Hazardous Waste Reduction Checklist for Automotive Repair Shops (1991), has been developed by WRAMP. The program is based on information provided by the California Department of Health Services. Other computer programs being developed include a module on household hazardous wastes and a waste reduction

program for the paint industry. Research is continuing on the development of a computer based waste tracking and cost analysis system.

Summary

Programs promoting pollution prevention have been active in the state of Michigan since late 1987. Although there is no legislation that deals directly with pollution prevention, the Michigan Legislature has passed a number of bills that established a base for the pollution prevention efforts in an office jointly managed by the Departments of Commerce and Natural Resources. Combined with the efforts of the pollution prevention program sponsored by the Water Resources Institute at Grand Valley State University, Michigan business and industry has an active, open, and cooperative base of support as they implement their pollution prevention plans.

The Office of Waste Reduction Services provides technical and educational assistance to businesses and institutions in the state. The program has conducted surveys and outreach sessions in order to accurately identify pollution prevention opportunities. This outreach effort helps program staff tailor research and assistance efforts to the needs of their clients. OWRS has restricted the availability of on-site technical assistance to targeted industries as a result of the desire on the part of program personnel to provide substantive assistance to their clientele. Program staff are presently developing an information clearinghouse and a waste reduction rewards program. These and other outreach and promotional efforts are designed to show the efficiency of pollution prevention waste management strategies to large and small generators in a variety of industrial sectors.

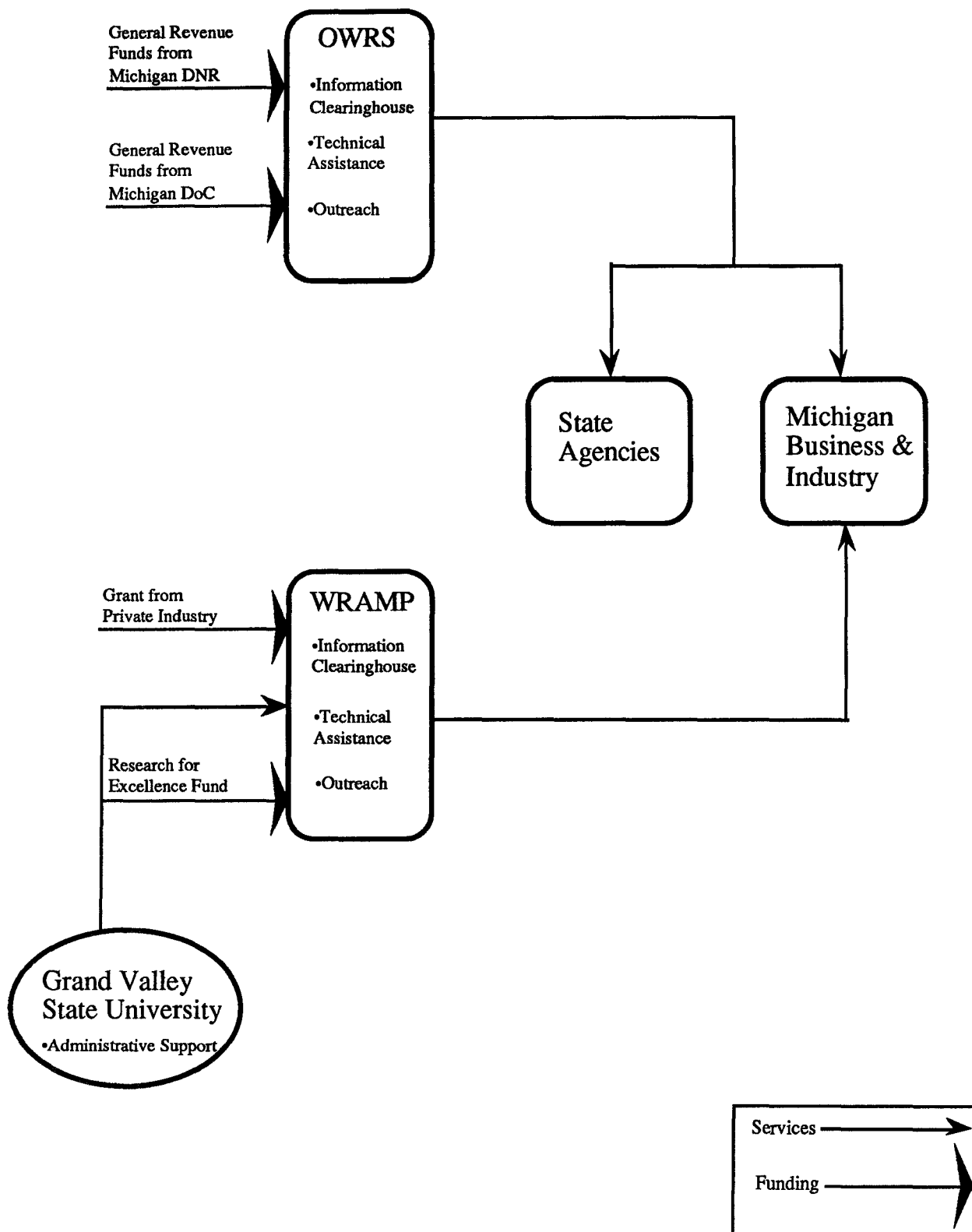
The Waste Reduction and Management Program at Grand Valley State University provides services similar to those provided by the OWRS. WRAMP is able to extend its research functions into somewhat more basic research as a result of its affiliation with the University. The program also has conducted an industry survey which it is using to direct its activities. As a result of the University's geographic location, the program tends to focus its efforts on the business community in western Michigan.

As it is in many states in 1991, budget concerns dominate the long term planning and program viability projections of state agencies in Michigan. The state is under a great deal of pressure to reduce its budget and the feeling at OWRS is that they, like all other state agencies, will have to absorb a cut in their funding. WRAMP's funding comes from a private industry and University grant which appears to be secure for the next year. The OWRS anticipates that they will lose some staffing capabilities and program funding next fiscal year which jeopardizes the expansion of the program's activities. This kind of uncertainty does not lend itself to progress in the incorporation of pollution prevention into the functioning business community. Michigan's programs have made special efforts to include the private sector in finding a direction for pollution prevention, but it is unlikely that this participation would continue without the state's contribution.

For more information contact: Office of Waste Reduction Services
Michigan Departments of Commerce and Natural Resources
P.O. Box 30004
Lansing, MI 48909
(517) 335-1178

Janet Vail, Coordinator
Waste Reduction and Management Program
Water Resources Institute
Grand Valley State University
One Campus Drive
Allendale, MI 49401
(616) 895-3749

Pollution Prevention in Michigan



Pollution Prevention in the State of Minnesota

The state of Minnesota has adopted pollution prevention as the preferred method of reducing the release of hazardous waste. The state's efforts combine an established technical assistance program with two state offices that have a legislative mandate to promote pollution prevention in both the public and private sector. In addition to on-site and telephone technical assistance, efforts in the state also include a number of different grant, training, education, and outreach programs intended to promote pollution prevention as an economically viable and technically efficient means of dealing with waste disposal problems.

According to the 1988 Toxics Release Inventory National Report, the state of Minnesota ranks twenty-seventh in the country in terms of reported releases of toxic chemicals to the environment. The top five industry sectors responsible for such releases according to this report are in descending order of magnitude;

- 1) Electrical machinery, equipment and supplies
- 2) Paper and allied product manufacturers
- 3) Fabricated metal products manufacturers
- 4) Transportation equipment manufacturers
- 5) Non-electric machinery manufacturers

The 1986 National Survey of Hazardous Waste Generators (GENSUR) places Minnesota thirty-fourth on its ranking of states according to amount of hazardous waste generated. Considering the state's exceptional growth in the business sector in the last ten years, it will be important to hold the line on hazardous and toxic waste concerns in order for the state to reap the benefits of such growth without paying unacceptable environmental costs.

The Minnesota Legislature has mandated the promotion of source reduction techniques as the preferred method of preventing toxic pollution with its passage of the 1990 Toxic Pollution Prevention Act (TPPA). The Act sets up a system that requires releasers of toxic pollutants to develop pollution prevention plans. Key elements of these plans and a three-tier schedule for filing the plans with the state are specifically laid out in the Act. All generators required to develop pollution prevention plans are also required to submit annual progress reports to the Minnesota Pollution Control Agency. These facility plans are not considered public data, but information developed through the pollution prevention process and the annual progress reports are considered part of the public domain.

The Act also sets up a pollution prevention program intended to catalog information, provide technical assistance and research, provide planning assistance and training, and award research and development grants. In addition, the Act provides for the establishment of an annual Governor's award for pollution prevention and a system for assessing fees to companies for the release of toxic chemicals.

The pollution prevention effort in Minnesota is led by three programs. The Minnesota Office of Waste Management heads up the state's efforts, coordinating between government and industry as well as promoting pollution prevention research and development. The Minnesota Technical Assistance Program, based in the University of Minnesota School of Public Health, provides technical assistance to businesses as they address their environmental concerns. The Minnesota Pollution Control Agency, in addition to enforcing the pollution prevention planning and progress report requirements, is exploring ways of integrating pollution prevention into traditional command and control programs.

Minnesota Office of Waste Management. The Minnesota Office of Waste Management (OWM) is the central player in the promotion of pollution prevention in the state. OWM, a nonregulatory agency, was established in 1989 by the Legislature to administer programs previously managed by the Waste Management Board.

The OWM's primary responsibilities are in planning and policy development for solid and hazardous waste. The OWM's Hazardous and Problem Waste Unit is responsible for implementing the 1990 Toxic Pollution Prevention Act (TPPA). OWM's efforts to prevent toxic pollution concentrate on using techniques and processes that are implemented at the source and that minimize the transfer of toxic pollutants from one environmental medium to another. By encouraging greater awareness of the need for and the benefits of toxic pollution prevention, OWM hopes to foster a greater degree of cooperation and coordination among all elements of government, industry, and the public in encouraging and carrying out pollution prevention activities.

The OWM defines its audience as persons or firms that use, generate or release toxic pollutants (SARA 313 chemicals), hazardous substances or hazardous and non-hazardous industrial wastes in Minnesota. TRI reporters and large quantity generators are given special attention due to the provisions of the TPPA.

The OWM operates the Pollution Prevention Program with a budget of \$1.5 million which is drawn from the state's general revenue fund, EPA grants, and a system of fees based on the amounts of chemicals reported released by industry on the Toxic Release Inventory (TRI). The OWM in turn distributes a percentage of these monies to the Minnesota Technical Assistance Program (MnTAP) to implement elements of its technical assistance responsibilities.

The Minnesota Legislature, through the TPPA, has charged the OWM with furthering the state's pollution prevention effort by:

- making pollution prevention grants available to those firms interested in pursuing innovative methods to reduce their hazardous and toxic waste releases,
- administering the Governor's Award for Excellence in Pollution Prevention program,

-
-
- reporting to the Legislature annually on the progress of pollution prevention in Minnesota,
 - hosting conferences and workshops on pollution prevention,
 - collecting fees from TRI reporters and large quantity generators of hazardous waste.

The fees specified in the TPPA are to be imposed using a two-tier system. All TRI reporters in the state are required to pay a pollution prevention fee of \$150 for each toxic pollutant reported released plus a fee based on the total pounds of toxic pollutants reported as released for each facility. Facilities reporting less than 25,000 pounds of toxic pollutant released annually are assessed a fee of \$500 per facility. Facilities reporting more than 25,000 pounds of toxic pollutants released are assessed a graduated fee at the rate of two cents per pound of toxic pollutants released, not to exceed \$30,000 per facility annually. Entities that are not TRI reporters but that generate more than 1,000 kilograms of hazardous waste per month are assessed \$500 per facility per year.

Pollution prevention plans are required by the TPPA for all facilities which report the release of toxic chemicals under SARA Title III, Section 313. These plans are required to be updated every two years and kept on file at the facility to which they pertain. The plans contain:

- a statement of management support,
- a detailed statement of the types of pollutants involved and the processes by which they are generated or released,
- a description and evaluation of current and past pollution prevention practices,
- a comprehensive assessment of the technically and economically feasible options available to reduce or eliminate the generation or release of these toxic wastes,
- a statement and schedule of pollution prevention objectives,
- an explanation of each of the above objectives,
- a listing of options not adopted and the reason for their exclusion,
- a certification that a plan has been prepared.

The OWM has, with the help of an independent subcontractor, developed a guide to assist companies with the formulation of their pollution prevention plans. The Minnesota Guide to Pollution Prevention Planning is available through the OWM. In cooperation with MnTAP, OWM held a series of 6 workshops in support of the training effort represented by this manual. Approximately 230 individuals attended the workshops.

Grants are made available through OWM to companies and other groups interested in researching or demonstrating the feasibility of specific innovative technologies or methods of production designed to prevent pollution. In reviewing applications for the grants, the OWM considers such factors as:

- the pollution prevention potential of the project,

-
-
- the likelihood of the project to minimize the transfer of pollution from one environmental medium to another,
 - the transferability of information generated to others with similar concerns,
 - the extent to which the grant applicant will be able to implement any valuable methods or technologies developed,
 - the willingness of the applicant to share any information gleaned from the project.

The grants available through OWM are for up to two-thirds of the total cost of the project. A commitment on the part of the applicant to make up the remainder of the project cost will be required.

The first round of pollution prevention grants received 19 applications, a response rate 50% higher than ever before received by the previous waste reduction grant program. After a review by OWM staff and advisory boards for eligibility and completeness, 9 of these applications were declared eligible. Thus far, 7 grants totalling almost \$200,000 have been awarded.

The OWM also administers the Annual Minnesota Conference on Pollution Prevention, special events for Chief Executive Officers, and the Governor's Award for Excellence in Pollution Prevention. Winners of the 1991 Awards were PDI, Inc. of Circle Pines, MN; FMC Corporation of Fridley, MN; and Aero Precision Machining Company, St. Paul Park, MN.

In the future, the OWM intends to expand its outreach to hazardous and toxic waste generators to include more training for pollution prevention planning, conferences and workshops. The OWM will also be submitting to the Minnesota Legislature an evaluation of the utility of requiring toxic pollutant reports and reduction plans on January 1, 1993. This report will be the result of the Office's experience in managing the pollution prevention plans effort. The OWM also intends to hold additional pollution prevention training sessions in 1991 and 1992.

OWM Success Stories—Business Buys Into Pollution Prevention

On January 31, 1991, the OWM held its First Annual Conference on Pollution Prevention for hazardous and toxic waste generators.

A total of 460 individuals attended the Conference. Participants were drawn from industries affected by the TPPA, consultants, and other interested parties. Evaluations returned by the Conference participants upon completion were overwhelmingly favorable.

Attendance at the Conference may have been spurred by the CEO Pollution Prevention Breakfast held the morning of the January 30, 1991. Of the approximately 400 chief executive officers invited to the breakfast, 150 attended. Allan Jacobson, CEO of the 3M Corporation gave a talk to the participants on the importance of taking part in some sort of pollution

prevention effort. Governor Arne Carlson then presented the Governor's Award for Excellence in Pollution Prevention.

Fallout from this breakfast was registered the next day as the Conference opened. Several Conference participants related anecdotal information to the organizers to the effect that the CEOs of various companies, such as a utility company and a pesticide manufacturer, came back from the breakfast enthused by the prospect of dealing with their waste management problems through a pollution prevention methodology. Conference participants were clear on one thing- top management is committed to pollution prevention.

Success Stories (Winners of the 1991 Minnesota Governor's Award for Excellence in Pollution Prevention)

PDI, Inc., a coatings manufacturer, began looking at its product lines in 1988 in an effort to reduce and, if possible, eliminate the use of volatile organic chemicals (VOCs) and other hazardous substances. Its first project of this type resulted in the elimination of the use of methylene chloride, a suspected carcinogen, from all product lines. The company then began an effort to reformulate its products into low VOC water-based or higher solid systems. Three out of the company's eighteen employees are assigned nearly full time to this effort. PDI's efforts resulted in the development of a flexible, water-based acrylic coating system for use on flexible foams. With the goal of increasing the sale of water-based coatings in the next five years to 500,000 annually, PDI has begun an aggressive marketing plan to urge their customers to convert to these kinds of systems. The company estimates that this change would prevent the annual environmental release of between 500,000 and 1,000,000 gallons of solvent from thinned solvent-based coatings.

The Naval Systems Division of the FMC Corporation is working to reduce its use and emissions of ozone depleting and hazardous solvent from various degreasing and cleaning operations throughout its facility. The company's efforts have resulted in the replacement of Freon TMC®, a blend of chlorofluorocarbons (CFC's) and methylene chloride, with 1,1,1-trichloroethane (TCA) in the parts cleaning operations of six production areas. TCA has one-sixth the ozone depletion potential and is significantly less volatile than Freon TMC®. This effort has resulted in an annual reduction of 1,400 gallons of spent or wasted solvent and an annual savings of approximately \$20,400 as a result of lower solvent and disposal costs and the on-site recycling of TCA. In May 1990, the Director of Operations called for the reduction in the average monthly use of TCA by 50% by year end. Through the institution of more efficient work practices, increased employee awareness and training, the elimination of unnecessary or obsolete equipment, and the substitution of alkaline cleaning for TCA in some operations, monthly usage of TCA has dropped 41.5% and loss to air emissions has dropped 56.8%. The company's annual usage of TCA is now estimated at 62,400 pounds compared to 216,000 pounds in 1988 and 180,500 in 1989. This program will prevent the annual emission of 90,000 pounds of TCA to the air and cost savings are estimated to be in the neighborhood of \$38,600 per year.

In 1989, Aero Precision Machining Company, working with an intern from the Minnesota Technical Assistance Program, eliminated the use of trichloroethylene in their cleaning processes. Aero modified their existing vapor degreaser, which used the solvent, to a detergent based system. This eliminated the need for 500 gallons of trichloroethylene per year and leaves the company with only one hazardous waste stream, mineral spirits, which is recycled by the supplier. Aero has openly shared information about their system with many visitors to the plant including government representatives and other companies.

University of Minnesota School of Public Health Minnesota Technical Assistance Program

The Minnesota Technical Assistance Program (MnTAP) has been providing pollution prevention and waste management technical assistance to Minnesota business and industry since 1984. Housed in the Division of Environmental and Occupational Health of the University of Minnesota's School of Public Health, this non-regulatory program seeks to improve industry's handling of its waste products by providing information that assists Minnesota businesses minimize releases to the environment. With the passage of the 1990 TPPA, MnTAP has been directed to refocus its efforts on promoting the prevention of pollution at its source. Funding increases provided by the Act will allow MnTAP to expand its activities, increasing the amount of state-sponsored assistance available to Minnesota industry as it deals with hazardous and toxic waste management and reduction concerns.

MnTAP makes its assistance available to all service and manufacturing concerns in the state with a particular emphasis on large- and small-quantity generators, toxic release inventory reporters, and generators of non-hazardous industrial waste. Program staff of eleven are drawn from a varied background with both technical training and hands-on experience in the private sector. The program is funded with state general revenue funds from the Minnesota Office of Waste Management and fees imposed on the release of chemicals included on the Toxics Release Inventory. The 1991 budget for MnTAP is \$678,000. MnTAP staff anticipate an increase in their budget for fiscal year 1992 to \$814,000.

MnTAP's primary focus in all its efforts is on reducing the release of waste and emissions at their source, with a secondary emphasis on encouraging environmentally sound recycling. The program provides telephone and on-site consultations to help industry manage and reduce the waste they generates. Part of this effort includes a student intern program designed as a low-cost method for industry to deal with specific waste reduction projects. Program staff use their experience acquired in the field to develop technical resources that are made available to interested parties through industry specific direct mail campaigning, workshops and seminars, and the program's newsletter. All of the program's technical assistance activities are supported by a substantial computerized library of resource materials developed by program staff and collected from other sources nationwide.

In addition to providing technical assistance to business and industry, MnTAP has also been developing a variety of training and educational programs with a pollution prevention focus. Program staff conduct seminars and workshops for companies interested in instilling in their employees a waste reduction mentality.

In the future, MnTAP intends to:

- expand its use of on-site consultations and demonstration projects,
- assist Toxic Release Inventory reporters with pollution prevention plan development and implementation,
- evaluate the possible use of a retired engineers program,
- measure the program's effectiveness and investigate ways of documenting pollution prevention,
- utilize new staff communication skills to further promote MnTAP services and pollution prevention opportunities,
- target common processes with high pollutant releases using data from TRI, RCRA and non-hazardous wastes,
- expand the use of training, workshops or seminars to reach a larger number of businesses for pollution prevention planning,
- use outreach efforts to identify process specific pollution prevention opportunities.

Minnesota Pollution Control Agency

The Minnesota Pollution Control Agency (MPCA) has also been given some responsibilities in the pursuit of the state's pollution prevention goals. The MPCA is the regulatory arm of Minnesota's waste management system.

The Agency's involvement with the pollution prevention effort began when it was awarded a RCRA Integrated Training and Technical Assistance (RITTA) grant in 1988. It now plans to expanded its role to include reviewing pollution prevention progress reports, producing fact sheets, and training state employees.

The support MPCA received from the RITTA grant was used to develop two specific programs; a State Training Action Plan (STAP), and a waste minimization technical assistance pilot project. The STAP has been submitted to the USEPA for review. The MPCA has held training sessions for RCRA inspectors on how to provide technical assistance to hazardous waste generators. The Agency intends to continue implementing other aspects of the STAP as funding and opportunity become available.

Also as part of the RITTA grant, the MPCA developed a technical assistance pilot project directed at reducing waste solvent generation. Included in this project is the Agency's sponsorship of a one-day solvent waste reduction conference. MPCA surveyed solvent users to determine the ways in which

they manage their waste solvent and their attitudes toward, and awareness of, waste reduction techniques. The survey was repeated three times in order to monitor the progress of the respondent's pollution prevention efforts. During the course of the pilot project, the MPCA attempted to determine the types of education and assistance that most effectively promoted pollution prevention as a means of waste management. The Agency contracted with MnTAP to perform some aspects of this pilot project.

Beginning in late 1991, the MPCA will begin to implement the "Lake Superior Partnership," a cooperative effort between state government and industries in the Duluth area to make pollution prevention a priority in the area's waste management efforts. The project will focus on outreach and training efforts in business, POTWs, and local government to encourage waste generators to adopt pollution prevention methodologies.

Under the provisions of the 1990 Toxic Pollution Prevention Act, the MPCA has the responsibility to review the annual progress reports submitted by toxic and hazardous waste generators as part of their pollution prevention planning obligations. The first progress report will be due on October 1, 1992.

Summary

The state of Minnesota's pollution prevention effort contains all the elements needed to make such an effort a success. Supported by significant legislation (1990 Toxic Pollution Prevention Act), the state's effort combines a committed, non-regulatory state agency, a seven-year-old technical assistance program, and a presence in the regulatory agency to positively affect the hazardous and toxic waste generating community.

The Minnesota Office of Waste Management is a non-regulatory state agency whose primary responsibility is planning and policy development for solid and hazardous waste. The OWM administers a grant program for pollution prevention initiatives in industry, hosts pollution prevention conferences and workshops, collects fees from TRI reporters and large-quantity generators, and administers the Governors Awards program. The OWM places special emphasis on its outreach efforts, hoping not only to convert the thinking of business and industry to the concept of pollution prevention, but also to lay the groundwork for cooperative efforts between business and industry as they pursue pollution prevention goals.

Established in 1984, the Minnesota Technical Assistance Program makes technical assistance available to parties interested in reducing the amount of industrial waste they generate. MnTAP provides telephone and on-site consultations as well as a student intern program to help industry adopt pollution prevention practices. Program staff make use of a substantial library of resources as they search for solutions for waste management problems. MnTAP also sponsors workshops, seminars and a newsletter as part of their pollution prevention outreach effort.

The Minnesota Pollution Control Agency also contributes to the pollution prevention efforts of the state. The MPCA provides training to RCRA inspectors and others in state government on pollution prevention issues. The

Agency also has been involved in some pilot technical assistance and training projects involving pollution prevention.

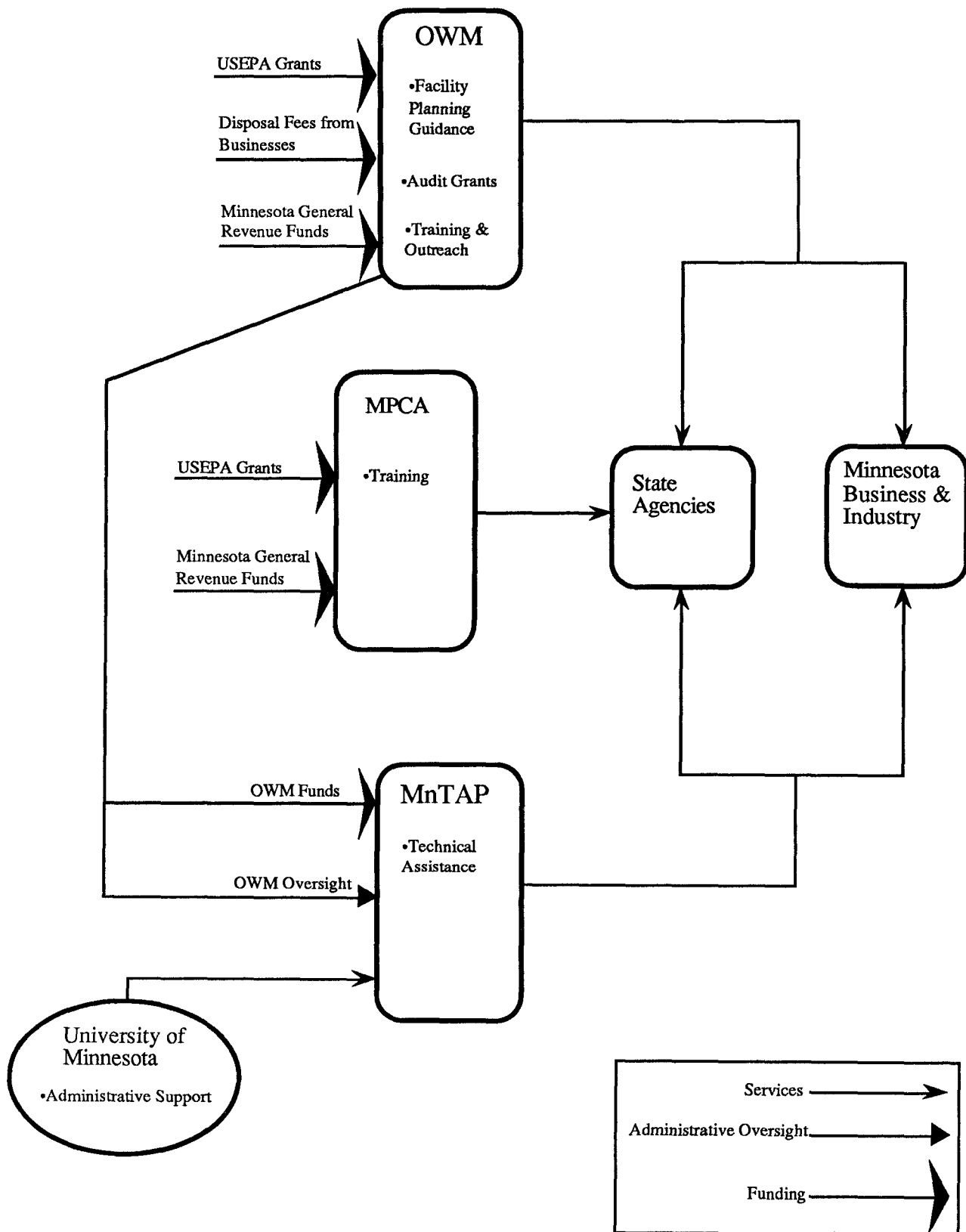
With strong legislative support, excellent technical assistance and outreach efforts, and a commitment to training industry and government in the most effective means to pursue pollution prevention goals, the pollution prevention movement in Minnesota is committed to having a real impact on the amount of toxic and hazardous waste released in the state. The effects of the work of these programs is already apparent in industry as shown by the performance of Governor's Award for Excellence in Pollution Prevention recipients. Should program funding continue in the state as anticipated, pollution prevention efforts will expand, fostering technical innovation in waste management and promoting cooperation between the public and private sectors as they strive to protect the environment.

For more information contact: Kevin McDonald
Minnesota Office of Waste Management
1350 Energy Lane
St. Paul, MN 55108
(612) 649-5750
(612) 649-5749 Fax

Cindy McComas
Director
Minnesota Technical Assistance Program
1313 5th St. SE Suite 207
Minneapolis, MN 55414
(612) 627-4646
(612) 627-4769 Fax

Eric Kilberg
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155
(612) 296-8643
(612) 297-1456

Pollution Prevention in Minnesota



Pollution Prevention in the State of Ohio

One of the top producers of hazardous waste in the United States, Ohio stands to benefit substantially from a concerted effort to incorporate pollution prevention efforts into its industrial practices. Through the efforts of two programs operated by different state departments, the state is raising the consciousness of business and industry regarding the advantages of a multimedia approach to pollution prevention activities.

According to the 1988 Toxics Release Inventory National Report, the state of Ohio ranks third in the country in terms of reported releases of toxic chemicals to the environment. The top five industry sectors responsible for such releases according to this report are in descending order of magnitude;

- 1) Chemical and allied products manufacturers
- 2) Primary metals industries
- 3) Fabricated metal products manufacturers
- 4) Paper and allied products manufacturers
- 5) Rubber and miscellaneous plastic products manufacturers

The 1986 National Survey of Hazardous Waste Generators (GENSUR) places Ohio tenth on its ranking of states according to amount of hazardous waste generated.

The state of Ohio has mandated some environmental action through legislation, but none that directly addresses pollution prevention. It has established a technical assistance program connected with the Ohio Department of Development (House Bill 111) and a litter prevention and recycling division of the Ohio Department of Natural Resources (the Litter Control Act of 1980). Pollution prevention legislation drafted by the Pollution Prevention Section of the Ohio EPA is currently being debated in the Legislature. The status of this bill is uncertain.

The pollution prevention effort in Ohio, basically made up of two programs, is still in the developmental stages. The Ohio Environmental Protection Agency (OEPA) established a Pollution Prevention Section in 1990 to coordinate pollution prevention efforts among the various OEPA departments and other state agencies involved in environmental issues. The Ohio Department of Natural Resources' Division of Litter Prevention and Recycling was established in 1980 as a vehicle to promote community based litter prevention and recycling efforts.

Ohio Environmental Protection Agency Pollution Prevention Section

Intended to be the coordinator of all pollution prevention activities in Ohio, this section of the Ohio EPA brings a multimedia focus to waste management concerns. While the Agency has been involved in several waste minimization efforts beginning in the early 1980s, the Pollution Prevention Section (PPS)

serves as a formal vehicle through which pollution prevention issues can be addressed within the Agency. It was also designed to deal with these issues as they arise in other state agencies, industry and federal entities. PPS has also been charged with helping to integrate the concept of pollution prevention into Agency policy and regulation, ultimately resulting in state pollution prevention legislation.

Funding for this program comes from a variety of sources. PPS derives its primary funding from the state's general RCRA budget which is supplemented by monies from capacity assurance and other grants. The budget for the program is estimated at approximately \$200,000 a year.

PPS is composed of three units which reflect the three functional aspects of its responsibilities:

- technical assistance
- program development and coordination
- technology assessment and information analysis

Since the program is still in the early stages of development, much of the effort thus far has involved defining its purview and gathering available pollution prevention information.

Technical Assistance. Currently, the Technical Assistance Unit is concentrating on training Agency personnel in the pollution prevention mindset, attempting to first establish, then implement the philosophy in the Agency's staff. It has also developed state pollution prevention legislation and is guiding it through the Ohio General Assembly. The Technical Assistance Unit also assists in the development of Agency's pollution prevention policy and appropriate manuals and guidance documentation. The Unit identifies regulatory impediments to pollution prevention (which includes a review of activities related to inspections and permitting), formulates a set of criteria for pollution prevention measurement. This unit is also responsible for targeting industries, processes and wastestreams for the application of pollution prevention principles.

In the past, the Ohio EPA's Division of Solid and Hazardous Waste Management has provided technical assistance and regulatory interpretation to generators on an "as requested" basis. The Technical Assistance Unit is now in the process of developing a clearinghouse of pollution prevention regulatory information and researching technical issues with an eye toward developing a full-blown technical assistance program. Ultimately, PPS will be able to provide assistance both through site visits and telephone consultations.

Program Development and Coordination. The Program Development and Coordination Unit is the Pollution Prevention Section's major coordinating wing. This unit is responsible for coordinating pollution prevention efforts among the various divisions in the Ohio EPA, other state agencies, interested trade associations, and the US EPA. The multimedia focus of Ohio's pollution prevention efforts is upheld by the oversight of this group.

Technology Assessment and Information Analysis. The Technology Assessment and Information Analysis Unit, the third component of the Pollution Prevention Section, is responsible for gathering and manipulating data as it relates to the pollution prevention goals of the Section. This unit acts as a pollution prevention regulatory clearinghouse and research center, conducting experiments and data analyses on pollution prevention issues when deemed appropriate. Included is a special assignment to analyze the economic aspects of pollution prevention activities.

The PPS is currently working with the Institute of Advanced Manufacturing Science through a RITTA grant to set up a waste reduction demonstration project. The PPS is trying to locate an industrial facility which is willing to become a prototype/show-piece/training tool for pollution prevention techniques. The PPS will study and overhaul the processes in this facility, using the data generated and the facility itself as a training tool for OEPA personnel.

The OEPA's Pollution Prevention Section plans to expand its activities in the future, becoming a more proactive participant in the state's pollution prevention efforts. Included in their plans are:

- to conduct visits to industrial facilities in an effort to target pollution prevention opportunities,
- to analyze the existing regulatory framework and coordinate changes to promote pollution prevention,
- to implement items identified in Ohio's pollution prevention bill when it is passed into law,
- to set up a retired engineer and student intern program.

Governor's Award Program

The Ohio Environmental Protection Agency sponsors a waste minimization awards program. The Governor's Awards for Outstanding Achievement in Waste Management and Pollution Control, although not exclusive to pollution prevention programs, does recognize pollution prevention and waste minimization candidates.

Ohio Department of Natural Resources Division of Litter Prevention and Recycling

The 1980 Ohio Litter Control Act mandated the establishment of an administrative body to oversee and promote the prevention of litter in the state. The Division of Litter Prevention and Recycling (DLPR), a division of the Ohio Department of Natural Resources, was given an annual budget of \$10 million to distribute in grant form to local governments and state agencies who, in turn, were to use this money to develop either litter prevention or recycling programs. The DLPR has developed a framework and set of guidelines which it uses to direct the grantee's efforts, allowing the local entity to tailor its program to specific community needs while maintaining the statewide structure and oversight capabilities necessary to maximize the effectiveness of each dollar spent.

The DLPR is funded by means of a two tier corporate franchise tax on companies doing business in Ohio. Every business in the state subject to more than the \$50 minimum contributes a percentage of their corporate franchise tax to the program. An additional tax is imposed on businesses that manufacture or sell litter stream products. There is a \$5,000 maximum tax limit per business per year. Businesses that make cash donations to grant recipients are eligible for a tax credit equal to one-half of the tax or one-half of the cash donation, whichever is lesser.

Grants are offered for a great variety of purposes:

- Comprehensive Litter Prevention Grants are available for clean up, containment, law enforcement and education awareness activities.
- Special Project Grants are available for the clean up of illegal dumping. These grants are targeted to small villages and townships.
- Recycling Operations Grants are available for non-profit organizations interested in pursuing recycling activities.
- Local Government Recycling Grants are available to assist localities in the development of community based recycling programs.

The DLPR is also implementing and maintaining a statewide litter awareness campaign as well as promoting recycling and the use of recycled products in state government. It also has a sizable catalog of publications that promote litter prevention and recycling available.

For the immediate future, the DLPR plans to continue current operations. The nature, substance and/or mission of the program may change if pending legislation is enacted by the Ohio General Assembly.

Thomas Edison Program

In an effort to promote innovation in the Ohio manufacturing sector, the Thomas Edison Development Fund offers matching grants of up to \$300,000 to partnerships between business and universities to research and develop commercially promising products for manufacture in Ohio. These grants are available to companies that are investigating environmental and pollution control technologies.

Summary

Ohio's pollution prevention efforts are, for the most part, in the developmental stages. The loss of the Ohio Technology Transfer Organization (OTTO), a program sponsored by the Ohio Department of Development, seriously damaged the state's efforts to promote the adoption of pollution prevention methodologies in the private sector. OTTO was able to provide a range of direct technical assistance services to business from a nonregulatory base, a very effective component in a state's pollution prevention efforts. The bulk of the state's efforts must now shift to the remaining two programs.

The Division of Litter Prevention and Recycling, mandated by state legislation

and funded by a specific corporate tax system, is not able to approach pollution prevention in the usual sense. The DLPR distributes monies to community organizations which promote litter awareness and recycling efforts, lending structure to those efforts in Ohio.

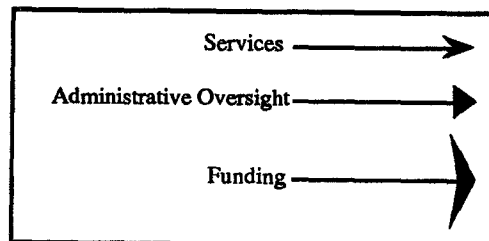
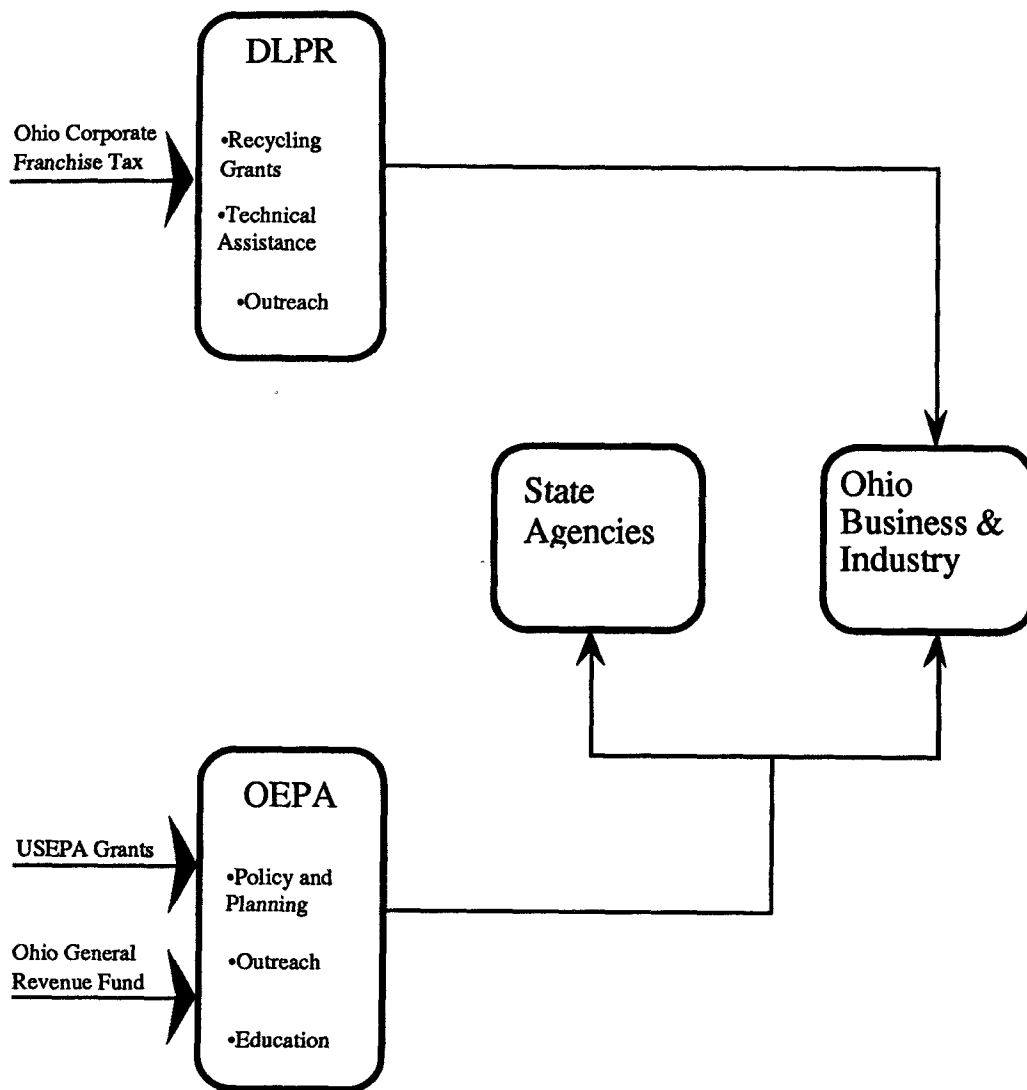
The Ohio Environmental Protection Agency's Pollution Prevention Section was formed in an effort to promote the concept of pollution prevention and coordinate these efforts among state agencies. Funded by RCRA Grants, the Pollution Prevention Section is still in its infancy, conducting outreach within the OEPA on pollution prevention issues and researching pollution prevention information and activities in the state. It has also developed a demonstration project through a US EPA RCRA Integrated Training and Technical Assistance grant.

For the state's efforts to become more effective, they seem to require a stronger, more consistent focus. Structurally, the Pollution Prevention Section as the main coordinating arm for these efforts in the state is still attempting to solidify formal bridges to the other programs. State pollution prevention legislation, which OEPA's Pollution Prevention Section is currently promoting in the State Legislature, would provide such a focus. Such legislation would provide a more reliable funding source for the Pollution Prevention Section and allow them to proceed with more long term projects.

For more information contact: Anthony Sasson
Ohio Environmental Protection Agency
Pollution Prevention Section
1800 WaterMark Drive
P.O. Box 1049
Columbus, OH 43266-0149
(614) 644-2917
(614) 644-2329 Fax

Mark Cole
Division of Litter Prevention and Recycling
Ohio Department of Natural Resources
1889 Fountain Square Court, Bldg F-2
Columbus, OH 43224
(614) 265-6333
(614) 262-9387 Fax

Pollution Prevention in Ohio



Pollution Prevention in the State of Wisconsin

The pollution prevention effort in the state of Wisconsin is in the earliest stages of development. Although there has been an effort in some state agencies to push for the reduction of solid waste produced in the state, a permanent home for the state's waste reduction efforts was established only recently. The programs formed by the state's pollution prevention legislation are small, education- and outreach-based programs housed in two different state departments.

According to the 1988 Toxics Release Inventory National Report, the state of Wisconsin ranks twenty-first in the country in terms of reported releases of toxic chemicals to the environment. The top five industry sectors responsible for such releases in descending order of magnitude are;

- 1) Primary metal industries
- 2) Paper and allied products manufacturers
- 3) Fabricated metal products manufacturers
- 4) Chemical and allied products manufacturers
- 5) Non-electric machinery manufacturers

The 1986 National Survey of Hazardous Waste Generators (GENSUR) places Wisconsin twenty-ninth on its ranking of states according to amount of hazardous waste generated. Although Wisconsin does not appear to have as severe a waste management problem as some of the other Great Lakes states, the foundry and paper manufacturing industries are responsible for nearly 40% of all the toxic pollutants released into the environment in the state. These established industries provide a good target for effective pollution prevention efforts.

The Wisconsin General Assembly has officially made pollution prevention the preferred method of managing hazardous waste by enacting the 1989 Hazardous Substances, Toxic Pollutants, Hazardous Waste Use and Release Reduction Act (1989 Wisconsin Act 325). The Act calls for the establishment of an independent hazardous waste management board composed of people from a variety of organizations both public and private. The Act also directs the Department of Development to establish a program to manage a system of audit grants the state will make available to businesses. The Department of Natural Resources is directed under the Act to establish the state's pollution prevention policy and coordinate efforts to implement that policy. The Act also mandates the establishment of a technical assistance program housed in the University of Wisconsin-Extension Office.

The pollution prevention effort in Wisconsin is managed by three entities; the Hazardous Pollution Prevention Board, the Hazardous Waste Minimization Program, and the Solid and Hazardous Waste Education Center. The Department of Development has also set up a program that administers the Hazardous Pollution Prevention Audit Grants.

Department of Development Hazardous Pollution Prevention Board

Established by the Wisconsin Assembly, the Hazardous Pollution Prevention Board is designed to oversee all the pollution prevention activities in the state. In pursuing the state's goal of reducing "the disposal and release of hazardous substances, toxic pollutants and hazardous wastes that may have serious, adverse effects on health and the environment," the Board has been directed to provide advice to various state departments and agencies, recommend educational priorities, and report to the interested branches of state government regarding pollution prevention efforts in the state. The Board and all other Department of Development involvement in pollution prevention is on a non-regulatory basis.

The Hazardous Pollution Prevention Board is made up of the following:

- the Department of Natural Resources Hazardous Pollution Prevention Coordinator,
- a representative of the Department of Industry, Labor and Human Relations appointed by the Secretary of that Department,
- a representative of the Department of Development appointed by the Secretary of that Department,
- a representative of the Department of Health and Social Services appointed by the Secretary of that Department,
- a representative of the University of Wisconsin appointed by the President of the University,
- a member representing small business appointed by the Speaker of the Assembly,
- two members representing large business, one appointed by the Governor, one appointed by the minority leader of the Senate,
- three members representing environmental groups, one appointed by the Governor, appointed by the president of the Senate,
- a representative of organized labor,
- a representative of a municipality with a publicly owned wastewater treatment facility.

Each of the members of the Board serves a three year term.

As the state's preeminent pollution prevention body, the Board monitors the progress of the state's initiatives in an attempt to minimize duplication of effort and help set standards for evaluating the state's progress. The Board provides guidance to state departments and agencies that handle or generate hazardous waste or are somehow provided with the opportunity to encourage hazardous pollution prevention. Drawing on the experience of its varied membership, the Board interprets the Assembly's hazardous pollution prevention directive and uses its position to promote pollution prevention as the waste management alternative of choice.

The Board has been directed to recommend educational priorities to the University of Wisconsin Extension Service as the Service goes about setting up a non-regulatory pollution prevention technical assistance program. Some of these priorities deal with the volume and toxicity of hazardous substances, the types of toxic pollutants and hazardous materials produced, questions of compliance, the potential for hazardous pollution prevention, and projected shortfalls in hazardous waste treatment or disposal facilities under the federal Capacity Assurance Plan.

The Board also acts on applications it receives for Hazardous Pollution Prevention Audit Grants. This grant program, administered by the Department of Development (DOD), is intended to encourage business and industry to analyze their hazardous waste generating processes in an effort to find pollution prevention opportunities. Grant applicants must put up 50% of the cost of the waste audit, identify the person who will be conducting the audit, and report back to the state with a summary of the audit findings within 60 days after the completion of the audit. Grant amounts are limited to \$2,500 or half the cost of the audit, whichever is less. Grant recipients are also responsible for developing and implementing a plan that uses the information from the audit to revise their waste management practices in such a way as to achieve a reduction in the amount of hazardous waste they generate.

The DOD has two full-time employees in charge of administering this grant program. DOD staff are responsible for providing the Board with a copy of each application, evaluating applications using pre-established criteria, making the actual grant application, and reviewing the audit and implementation summaries submitted by the recipients. In making its evaluation of individual grant applications, DOD considers the following:

- the likelihood that an applicant will be technically and financially able and willing to implement hazardous pollution prevention,
- the volume and toxicity of hazardous substances, toxic pollutants and hazardous waste used or produced by the applicant,
- the potential for others to use the information gained from an applicant's hazardous pollution prevention audit,
- the Assembly's directive to provide grants to a variety of industries.

The Board makes the final determination of grant awards.

In cooperation with the DOD and the Solid and Hazardous Waste Education Center established in the University of Wisconsin Extension Service, the Board makes a report to the Governor and the Assembly regarding the pollution prevention efforts of the state in every year that a revised Capacity Assurance Plan is not required by the federal government. This report contains all the pertinent information regarding the progress of these types of programs in the state.

As it is with most other state agencies in Wisconsin, the Department of Development is currently working under a hiring freeze. Like many states,

Wisconsin has found it necessary to cut back on state expenditures in order to balance its budget. These cutbacks have severely curtailed the actions of the DOD as it relates to its pollution prevention efforts and will continue to do so for the foreseeable future. No expansion in services is anticipated until the hiring freeze is lifted.

**Department of Natural Resources
Office of the Hazardous Waste Minimization Coordinator**

The Department of Natural Resources (DNR) makes its contributions to Wisconsin's pollution prevention efforts through the Office of the Hazardous Waste Minimization Coordinator.

The 1989 Hazardous Substances, Toxic Pollutants, Hazardous Waste Use and Release Reduction Act (Wisconsin Act 325) recognizes the fact that the predominantly regulatory focus of environmental efforts in the past has inhibited the adoption of pollution prevention methodologies in the regulated community. In order to redress this problem, the Assembly has directed the DNR to promote pollution prevention techniques as the most effective means of dealing with hazardous waste. The DNR has been directed to use its regulatory position to identify pollution prevention opportunities and make information available to hazardous waste generators that would allow them to take advantage of such opportunities.

The DNR pursues these goals through its Office of the Hazardous Waste Minimization Coordinator. The Coordinator is the DNR's lead person in the development and implementation of the department's pollution prevention strategy, setting policy for the department and coordinating the department's pollution prevention efforts with other state agencies, as well as conducting outreach to private industry. As the DNR proceeds with the formulation of a pollution prevention implementation plan, a formal mission statement for the Office will be developed. Until that time, the staff organizes its efforts around legislation enacted by the Assembly, the DNR's strategic plan for its Division of Environmental Quality, and the Secretary's Pollution Prevention Objective for 1991.

The Office is made up of three full-time staff members and operates with a budget of approximately \$208,000/year. The Office gets its funding from RITTA grants (\$112,000), general revenue funds (\$96,000), and an unspecified amount from waste disposal fees.

The Office has been directed to apply its educational efforts to DNR personnel as well as business and industry. The Hazardous Waste Minimization Coordinator has been promoting the state's multi-media approach to pollution prevention through a series of training programs held for DNR staff. The training is intended to help the regulatory staff understand pollution prevention methodology and investigate ways to use the regulatory structure to promote the adoption of pollution prevention. The Coordinator also holds workshops for industry to introduce pollution prevention as an alternative to traditional means of waste management.

In addition to managing the Office, the Hazardous Waste Minimization Coordinator also serves on the Hazardous Pollution Prevention Board.

In support of its educational efforts, the Office has set up an information clearinghouse and technical assistance program. The Pollution Prevention Information Clearinghouse makes a variety of information on both general and technical issues available to the regulated community. It is hoped that information made available through this office will assist both generators and regulators discover solutions to the technical problems that often stand in the way of effective pollution prevention implementation.

Limited technical assistance is available for those in the program's audience who have more specific questions regarding waste management and pollution prevention issues. The Office has been working with the University of Wisconsin Extension Service to establish a hazardous waste technical assistance program based in the Extension Service. This program is currently acquiring legislatively mandated staff and setting up operations.

The Office also publishes a periodic newsletter that deals with multi-media pollution prevention issues.

The Hazardous Waste Minimization Coordinator intends to finalize the DNR's Pollution Prevention Implementation Plan sometime in the near future. Included in this plan is a series of Pilot Pollution Prevention Projects in each Environmental Quality Program and DNR field office. Other than finalizing the DNR's plan, the Office has no immediate plans to expand its base of services. Any expansion in services is dependent upon an easing of the state's spending restrictions.

University of Wisconsin-Extension Solid and Hazardous Waste Education Center

Wisconsin Act 325 mandates the creation of a hazardous pollution prevention program in the University of Wisconsin-Extension. The Solid and Hazardous Waste Education Center (The Center) has become home to the Extension Service's pollution prevention program. The Center has only recently begun its pollution prevention involvement and as such is still working on developing a plan of action.

This program is to promote pollution prevention in cooperation with the DNR and the Hazardous Pollution Prevention Board by:

- conducting an educational and technical assistance program,
- assisting the Department of Development in establishing the requirements for the audit and implementations studies required by the Hazardous Pollution Prevention Audit Grants,
- contributing to the Board's formulation of its report to the Governor and the Assembly on the pollution prevention efforts in the state.

The Center's pollution prevention program is directed at a wide audience

which includes industry at all levels, the regulatory community, other governmental bodies (both state and local), as well as the citizens of Wisconsin. The Center has a budget of \$430,000 for fiscal year 1991 drawn from the Wisconsin Assembly's general revenue fund. Program staff anticipate similar funding for fiscal year 1992.

Operating with a full-time staff of seven people, the Center has begun concentrating its efforts on the technical assistance, training and educational aspects of its mission. The pollution prevention program makes on-site technical assistance available to industry. The program also sponsors a number of seminars and workshops designed to promote the idea of pollution prevention both inside and outside government. The Center also publishes newsletters intended to reinforce both the technical assistance and outreach efforts.

The Center plans to expand its activities in the future, broadening its general educational effort while it seeks to narrow the focus of some of its seminars to impart specific pollution prevention information to particular generators. Program staff hope to expand their educational efforts in such a way as to make the general public more aware of the benefits of pollution prevention, thereby providing the kind of grassroots support needed to make their efforts successful in the long term. The Center also hopes to make on-site pollution prevention audits available to help waste generators achieve a better understanding of their waste management issues. Seminars are also planned that target specific generators and deal directly with their waste management issues.

Summary

The state of Wisconsin has put in place a well-balanced pollution prevention effort. The state funds two programs designed to directly approach pollution prevention issues and has authorized the formation of an advisory board composed of various industry, government and interest group representatives. All these efforts are supported by substantial pollution prevention legislation. The combination of services offered by these programs cover the range usually offered by state programs facilitating the implementation of pollution prevention.

The Hazardous Pollution Prevention Board is the guiding force behind hazardous pollution prevention in the state. Made up of a variety of public and private sector specialists, the Board recommends educational priorities, provides advice to various state departments and groups, and reports to the Governor and the Assembly regarding the progress of the state's pollution prevention efforts. Also, with the help of the Wisconsin Department of Development, the Board awards Hazardous Pollution Prevention Audit Grants. These Grants are an attempt to assist interested businesses to discover pollution prevention opportunities on their production line.

The Department of Natural Resources also contributes to the state's pollution prevention effort through the Office of the Hazardous Waste Minimization Coordinator. As part of the state's regulatory structure, the Office is responsible for training state regulatory personnel regarding pollution

prevention issues. The Office operates an information clearinghouse and a limited technical assistance program. The Office also sponsors outreach workshops for industry and publishes a newsletter concerning pollution prevention issues.

The newest addition to the state's pollution prevention efforts is the Solid and Hazardous Waste Education Center. As part of the University of Wisconsin-Extension, the Center's staff are able to draw on the extensive resources available through the University in answering technical assistance questions. Administratively separate from the regulatory arm of the state, the program's positioning helps reassure industry that their waste management concerns will remain confidential. As the Center grows in reputation with state businesses, it is hoped it will make a positive impact on technological transfer and innovation as it relates to pollution prevention.

In Wisconsin, as in most other states, the success of pollution prevention efforts will hinge on the ability of the State Assembly to continue funding the programs in place. Although the various services available in the state seem to be distributed with a minimum amount of duplication, more of an effort must be made to bring these services in line with those of other states. It will take the DNR's Office of the Hazardous Waste Minimization Coordinator and the Center time to assemble the data available on pollution prevention in order to make it available to those concerned. The provision of effective technical assistance will also depend upon the Center's ability to access experienced pollution prevention personnel. Every state department in Wisconsin is currently operating under a hiring freeze which is having deleterious effects on the growth of both the expertise and the resources available to deal with waste management problems.

For more information contact:

Lynn Persson
Hazardous Waste Minimization Coordinator
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707
(608) 267-3763
(608) 267-2768 Fax

Ken Wiesner
Director
Office of Pollution Prevention
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707-7921
(608) 267-9700
(608) 267-2768 Fax

Patrick Walsh
Solid and Hazardous Waste Education Center
University of Wisconsin-Extension
610 Langdon St., Room 528
Madison, WI 53706
(608) 262-0385
(608) 262-6250 Fax

Phil Albert
Wisconsin Department of Development
123 West Washington Ave.
P.O. Box 7970
Madison, WI 53707
(608) 266-7099
(608) 267-2829 Fax

Pollution Prevention in Wisconsin

