

POLLUTION SOLUTIONS

Promoting Pollution Prevention in the Great Lakes Basin



A Report on the Pollution Prevention Grant Program in the Great Lakes Basin



**Great Lakes National Program Office
January 1998**

ACKNOWLEDGMENTS

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TABLE OF CONTENTS

Executive Summary.....	1
Background.....	2
Great Lakes as a Pollution Prevention Leader.....	3
The GLNPO Pollution Prevention Grant Assistance Program.....	3
Lessons Learned.....	5
Overview of Pollution Preventions Projects, Federal Fiscal Years 1992-1995	
Table 1: <i>Number of New Projects, Total Dollar Amounts and Dollars Leveraged for GLNPO Pollution Prevention Grant Assistance, Fiscal Years 1992-1995.....</i>	6
Table 2: <i>Agencies and Organizations Receiving Fiscal Years 1992-1995 Grant Assistance Dollars from GLNPO, and Basins Impacted by Projects.....</i>	6
Table 3: <i>GLNPO Funded Pollution Prevention and Dollars by Great Lakes Basin During Fiscal Years 1992-1995.....</i>	7
 APPENDIX A	
<i>Project Summaries FY 1995</i>	
Mercury Reduction through Treatment Chemical Selection..... <i>Minnesota Pollution Control Agency</i>	9
Rochester Embayment Watershed Mercury Pollution Prevention Program..... <i>Monroe County Department of Health (in coordination with the National Wildlife Federation and Western Lake Superior Sanitary District)</i>	10
Mercury Reduction and Pollution Prevention in Hospitals..... <i>National Wildlife Federation (in coordination with Monroe County, New York and Western Lake Superior Sanitary District)</i>	11
Zero Discharge Pilot Project..... <i>Western Lake Superior Sanitary District (in coordination with Monroe County, New York and the National Wildlife Federation)</i>	12
 <i>Project Summaries FY 1994</i>	
Great Lakes Alternative Cleaning Education Program..... <i>Center for Neighborhood Technology</i>	13
Campaign for a Sustainable Calumet Region..... <i>Center for Neighborhood Technology</i>	15
Creative Pollution Solutions for Southeast Chicago..... <i>Chicago Legal Clinic, Inc.</i>	16
Great Printers Project..... <i>Council of Great Lakes Governors</i>	17
Local Government Pollution Prevention Targeting Project..... <i>Erie County Department of Environment and Planning</i>	18

Erie County Clean Sweeps II.....	19
<i>Erie County Department of Environment & Planning</i>	
Auto Industry Pollution Prevention Project: Phase II.....	20
<i>Michigan Department of Environmental Quality (formerly Department of Natural Resources)</i>	
Pollution Prevention Education and Technical Assistance for the Lake Michigan and Lake Superior Basins in Wisconsin.....	22
<i>University of Wisconsin, Cooperative Extension, Solid and Hazardous Waste Education Center</i>	
<i>Project Summaries FY 1993</i>	
Erie County Regional Municipal Pollution Prevention Program.....	24
<i>Western New York Economic Development Corporation/Erie County</i>	
Household Hazardous Waste Collection Program and Pollution Prevention Assessments.....	26
<i>Michigan Department of Environmental Quality (formerly Department of Natural Resources)</i>	
Mercury/PCB Outreach and Collection Program and Technical Assistance.....	28
<i>Minnesota Pollution Control Agency</i>	
Ohio Great Lakes Basin Pretreatment Pollution Prevention.....	31
<i>Ohio Environmental Protection Agency</i>	
Toxics Pollution Prevention Mentoring.....	32
<i>Western Lake Superior Sanitary District</i>	
Pollution Prevention Assessments in Support of the Lake Superior Binational Program - Technical Assistance to Industries.....	34
<i>Wisconsin Department of Natural Resources</i>	
<i>Project Summaries FY 1992</i>	
Industrial Waste Water Operator Pollution Prevention Training.....	36
<i>Michigan Department of Environmental Quality (formerly the Michigan Department of Natural Resources)</i>	
Pollution Prevention and Public Awareness Campaign for Lakes Superior and Michigan Basin.....	37
<i>Minnesota Pollution Control Agency, in Partnership with Illinois, Indiana Michigan and Wisconsin State Environmental Agencies</i>	
APPENDIX B	
Projects Funded in FY 1997.....	39
APPENDIX C	
Funding Guidance and Grant Funding Process.....	40

EXECUTIVE SUMMARY

From 1992 through 1995, the Great Lakes National Program Office (GLNPO) of the U.S. Environmental Protection Agency (U.S. EPA) awarded over \$1,600,000 in grants for 20 on-the-ground pollution prevention activities. We have supported 11 organizations promoting pollution prevention as the preferred way of doing business in the Great Lakes basin from Duluth, Minnesota to Rochester, New York.

The Federal grant funds invested in pollution prevention projects in the basin have attracted over \$950,000 additional dollars to further advance the projects. Recipients of Federal grants are required to provide a 5% match to their grant awards (either money or in-kind services). Notably, GLNPO pollution prevention grantees have leveraged an impressive 61% cumulative match for the projects funded from 1992 through 1995.

The seed money invested by GLNPO spurred a number of innovative projects which have influenced activities across the nation. Examples of these projects include: the Auto Project which targeted reduction of persistent toxic substances; the Great Printers Project, which reached out to an industry composed of predominantly small businesses to turn pollution prevention into the preferred way of doing business; and Western Lake Superior Sanitary District's pollution prevention efforts to protect Lake Superior.

With the help of our grantees, a great deal has been learned about using pollution prevention as a tool to address current problems and avoid future ones in the Great Lakes basin. Lessons learned include the following:

- Pollution prevention is an important voluntary tool which companies can use to minimize their wastes and save money.
- Regulatory compliance is a strong motivator to initiate consideration of pollution prevention solutions.
- A recipe for project success includes strong public/private partnerships involving local entities.
- It is relatively easy to measure the programmatic success of pollution prevention activities, such as number of companies assessed or fact sheets distributed.
- Extrapolating the quantity of pollution prevented as a direct result of a specific project is much more difficult.

This report serves as a road map to the pollution prevention activities supported by GLNPO and will hopefully spur ideas for new projects. GLNPO summarized the most recent information about each project in a descriptive narrative and compiled the descriptions into a "catalog" (Appendix A). The project descriptions contain the phone numbers and/or E-mail addresses of the project contacts. These are the persons who served as the project directors

promoting pollution prevention in the Great Lakes basin. They are important and valuable resources for future activities. Appendix B contains a list of projects funded by GLNPO in Fiscal Year (FY) 1997. (Note that in FY 1996, since a budget was not passed until mid-year, the GLNPO pollution prevention grant process was suspended.) Appendix C explains GLNPO's grants process.

BACKGROUND

The Great Lakes Water Quality Agreement (GLWQA) calls for the "virtual elimination" of persistent toxic substances from the Great Lakes basin. The purpose of the 1978 Great Lakes Water Quality Agreement, as amended, is to "restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes basin ecosystem." Since the late 1980's, pollution prevention has been the cornerstone of the Great Lakes programs. GLNPO has supported many pollution prevention activities, specifically to advance the GLWQA's goal of virtually eliminating the discharge of persistent toxic substances into the Great Lakes basin.

The Great Lakes Binational Toxics Strategy, signed on April 7, 1997, by U.S. EPA Administrator Carol Browner and Canadian Minister of the Environment Sergio Marchi, addresses that commitment. The Strategy calls for percentage reductions in targeted substances within a ten-year time frame -- tangible steps along the path to virtual elimination. The Strategy sets reduction targets for an initial list of substances including mercury, PCBs, DDT, chlordane, and dioxins/furans. This is the first time that a common list of substances has been targeted jointly for reductions by both the U.S. and Canada. Although levels of these substances have been decreasing in recent years, these substances still exist in the Great Lakes at amounts harmful to human and wildlife health. They also are the cause of fish advisories. Pollution prevention is the preferred method to address the problem substances which are currently being manufactured or used.

The Great Lakes Binational Toxics Strategy builds upon a tradition of pollution prevention activities in the Great Lakes basin. In the Great Lakes, pollution prevention efforts coalesced in the U.S. EPA's Great Lakes Pollution Prevention Action Plan. Announced by then U.S. EPA Administrator William Reilly and the Great Lakes governors on April 12, 1991, the action plan served as a snapshot of ongoing activities and launched a number of new activities. These included the Great Lakes Auto Project and coordinated pollution prevention efforts to protect the Lake Superior ecosystem.

On September 30, 1991, the U.S. EPA, Environment Canada, the States of Michigan, Minnesota and Wisconsin, and the Province of Ontario announced the "Binational Program to Protect and Restore the Lake Superior Basin." The Binational Program zero discharge demonstration program is devoted to the goal of achieving zero discharge or emission of nine designated persistent toxic substances through pollution prevention, enhanced regulatory measures, and

remedial programs. Federal, State, Tribal and local government and non-profit partners use Lakewide Management Plans to help address the environmental problems for each specific lake basin. Remedial Action Plans help identify the solutions for the 42 toxic hotspot Areas of Concern.

On the national level, the Pollution Prevention Act of 1990 provided support for pollution prevention activities. Congress declared as national policy that pollution should be prevented or reduced at the source whenever feasible; pollution that cannot be prevented should be recycled. If pollution cannot be prevented or recycled, it should be treated in an environmentally safe manner. Disposal or other release into the environment should be used as a last resort. Pollution prevention and source reduction are terms used interchangeably. Source reduction is defined as any practice which reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment prior to recycling, treatment or disposal.

GREAT LAKES AS A POLLUTION PREVENTION LEADER

As pollution prevention was gaining acceptance and momentum across the nation, several pollution prevention practitioners in the Great Lakes basin were establishing themselves as leaders in the field. These practitioners meet twice each year at the Great Lakes Regional Pollution Prevention Roundtable (GLRPPR) to share information and learn from each other. This group started in 1990 with the U.S. EPA Region 5 States (Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin), meeting to share experiences. The GLRPPR has grown to an international organization with active participants from both U.S. and Canadian portions of the Great Lakes basin. Currently, membership includes about 160 organizations and 345 individuals from the Great Lakes States and Ontario. Organizations represented include State and local environmental agencies, business development agencies, industry and associations, labor unions, environmental advocacy groups, nonprofit research centers, academia, technical assistance providers and Federal agency programs with a Great Lakes and pollution prevention focus.

THE GLNPO POLLUTION PREVENTION GRANT ASSISTANCE PROGRAM

From 1992 through 1995, GLNPO awarded over \$1,600,000 in grants for 20 on-the-ground pollution prevention activities. We have supported 11 organizations promoting pollution prevention as the preferred way of doing business in the Great Lakes basin. Projects covered areas ranging from Duluth, Minnesota to Rochester, New York.

These Federal investments in pollution prevention projects in the basin have attracted over \$950,000 additional dollars to further advance the projects.

Recipients of Federal grants are required to provide a 5% match to their grant awards (either money or in-kind services). GLNPO's grantees have leveraged a cumulative 61% match from 1992 through 1995. This ability to attract matching funds reaffirms the quality of the projects supported in the basin.

The seed money invested by GLNPO spurred a number of innovative projects which have influenced activities across the nation. The Auto Project has expanded from a Great Lakes basin focus to targeting persistent toxic substances and other materials in the auto sector across the United States. Excluding zinc releases, the Auto Project achieved a 54.5% production normalized reduction of Great Lakes Persistent Toxics since 1991. The Great Printers Project is a unique project, working with an industry composed of predominantly small businesses to make pollution prevention the preferred way of doing business. The Great Printers Project has been endorsed by the governors of the Great Lakes States and the Administrator of U.S. EPA. Western Lake Superior Sanitary District's efforts to reduce mercury through pollution prevention have earned national recognition. Pollution prevention is becoming the approach of choice in the Great Lakes basin. It is being embraced by large and small industries, and households as well. It is an important tool for cleaning up heavily industrialized areas as well as protecting pristine areas such as the Lake Superior basin.

The GLNPO pollution prevention grant assistance program in the Great Lakes basin has evolved over the years from funding general pollution prevention technical assistance to supporting activities to reduce persistent toxic substances of concern, with a special emphasis on mercury. Initial efforts helped build the infrastructure for pollution prevention technical assistance in the basin. Many small and medium-sized companies were not aware of pollution prevention, and GLNPO invested its money to help "get the word out." In FY93 Congress allocated money to promote pollution prevention in the Lake Superior basin. In an innovative approach, grantees from Michigan, Minnesota and Wisconsin coordinated their efforts to ensure that individual projects positively affect the Lake Superior ecosystem in all three States. Projects funded in FY94 focused on promoting pollution prevention to specific businesses, such as the automotive industry and printers. Projects funded in FY95 all supported pollution prevention efforts aimed at reduction of mercury. Of these projects, three out of the four targeted reduction of mercury in hospitals. These complementary projects were implemented across the entire basin (Duluth, Minnesota; Southeast Michigan; and Rochester, New York), and the grantees shared information as the projects progressed.

By funding these and other projects, GLNPO furthered the march towards virtual elimination of persistent toxics in the Great Lakes basin. We helped build the network of environmental professionals promoting pollution prevention so that pollution prevention will be the preferred approach for environmental protection in the basin. Our strategic use of funds is helping to focus pollution prevention efforts to reduce persistent bioaccumulative toxic substances in the Great Lakes basin.

This report covers projects funded by GLNPO in Federal fiscal years 1992 - 1995. (The Federal fiscal year runs from October 1 through September 30 of the following year.) Summaries of these projects appear in Appendix A. In FY 1996, due to a mid-year budget agreement, the GLNPO pollution prevention grant process was suspended. Project funding resumed in Federal fiscal year 1997, with the latest round of projects funded in September 1997. See Appendix B for a list of projects funded in FY 1997 and Appendix C for information on GLNPO's funding guidance and grants process.

In addition to GLNPO, there are a number of other funding sources, from other government offices to private foundations, supporting pollution prevention projects in the Great Lakes basin. These organizations informally communicate about their programs to ensure coordination of the projects funded.

LESSONS LEARNED

With the help of our grantees, a great deal has been learned about using pollution prevention to address current problems and avoid future ones in the Great Lakes basin. These lessons include:

- Pollution prevention is an important voluntary tool which companies can use to minimize their wastes. However, regulatory compliance is a strong motivator for companies to become interested in pollution prevention technical assistance. In an effort to comply with regulations, companies will consider pollution prevention solutions.
- Generally, companies do not want to consider reducing only one or two targeted pollutants, but rather look at their business processes more holistically. As a result of this practice, projects targeting these specific pollutants may have unanticipated additional environmental benefits.
- Successful projects include strong public/private partnerships involving local entities. This component should be incorporated into future projects where appropriate.
- It is relatively easy to measure programmatic success of pollution prevention activities, such as the number of companies assessed, or fact sheets distributed. Extrapolating how much pollution was not created as a direct result of a specific pollution prevention project is much more difficult. We do know that companies can save money and reduce their impact on the environment by employing pollution prevention techniques.
- Prevention is a key part of the pollution solution.

OVERVIEW OF POLLUTION PREVENTION PROJECTS, FEDERAL FISCAL YEARS 1992 - 1995

Table 1: *Number of New Projects, Total Dollar Amounts and Dollars Leveraged for GLNPO Pollution Prevention Grant Assistance, Fiscal Years 1992 - 1995.*

Fiscal Year	Number of Grants	GLNPO Dollars	Dollars Leveraged
1992	2	\$200,000	\$10,105
1993	6	\$547,000	\$28,960
1994	8	\$628,365	\$360,402
1995	4	\$237,350	\$576,866
Total	20	\$1,612,715	\$976,333

Table 2: *Agencies and Organizations Receiving Fiscal Years 1992 - 1995 Grant Assistance Dollars from GLNPO, and Basins Impacted by Projects.*

Organization	Number of Projects	Basin
Center for Neighborhood Technology	2	Michigan
Chicago Legal Clinic	1	Michigan
Council of Great Lakes Governors	1	All
Erie County Dept. of Environment & Planning	3	Erie
Michigan Dept. of Environmental Quality	3	All, Superior
Minnesota Pollution Control Agency	3	Superior
Monroe County Dept. of Health	1	Ontario
National Wildlife Federation	1	Erie
Ohio Environmental Protection Agency	1	Erie
Western Lake Superior Sanitary District	2	Superior
University of Wisconsin, Cooperative Extension, Solid and Hazardous Waste Education Center	2	Michigan, Superior

Table 3: GLNPO Funded Pollution Prevention Projects and Dollars by Great Lakes Basin During Fiscal Years 1992 - 1995.

Basin	Number of Projects	GLNPO Dollars	Dollars Leveraged
Erie	8	\$323,927	\$104,574
Huron	2	\$27,577	\$10,348
Michigan	6	\$373,043	\$256,127
Ontario	3	\$88,577	\$44,448
Superior	11	\$799,591	\$560,837
<p><i>* Note that some projects funded during FY 1992 - 1995 impacted more than one lake basin and are counted multiple times. These multiple basin projects are represented in the Dollar columns by the estimated proportion of funds spent in each basin.</i></p>			

CONCLUSION

The Great Lakes basin has a network of informed and motivated businesses, non-profit organizations, universities and government agencies promoting and implementing pollution prevention in the basin. The best indication of the level of pollution prevention expertise is the caliber of projects which have been implemented around the basin. Summaries of the projects funded under GLNPO's grant program are contained in Appendix A of this report.

Along with these summaries are descriptions of products developed under the various grants and information on how to contact the individuals who worked directly on the projects. It is our hope that this information will further strengthen the network of individuals who are working to promote pollution prevention around the Great Lakes basin. These projects, and the persons who worked on them, should be viewed as resources for future activities.

Access our World Wide Web site at: <http://www.epa.gov/glnpo/> on the Internet for information on GLNPO's pollution prevention efforts in the Great Lakes basin. This report will be available on the Internet site in early 1998. We will provide hotlinks to the project contacts and applicable reports mentioned in the grant summaries. If you have any comments on GLNPO's pollution prevention grant program, or if you have ideas about additional areas we should explore for investing our funds, we would love to hear from you.

Please contact:

Danielle Green, Environmental Protection Specialist

Telephone: 312-886-7594

Fax: 312-353-2018

E-mail: *green.danielle@epamail.epa.gov*

Elizabeth LaPlante, Pollution Prevention Team Leader

Telephone: 312-353-2694

Fax: 312-353-2018

E-mail: *laplante.elizabeth@epamail.epa.gov*

or contact any of the grantees listed in the project summaries.

Appendix A: Project Summaries FY1992 - 1995

Appendix B: List of Projects Funded by the Great Lakes National
Program Office in FY 1997

Appendix C: The Great Lakes National Program Office's
Funding Guidance and Grant Process

U.S. EPA's Great Lakes National Program Office will make *Pollution Solutions* available on the Internet in early 1998. See the Pollution Prevention section of GLNPO's home page:

URL: *<http://www.epa.gov/glnpo/p2.html>*

For additional copies of this document, please contact:

Mr. Lawrence Brail, ADS [contractor]
U.S. Environmental Protection Agency
Great Lakes National Program Office
77 W. Jackson Boulevard (G-17J)
Chicago, IL 60604

Telephone: 312-886-7474
Fax: 312-353-2018

E-mail: *brail.lawrence@epamail.epa.gov*

**Title: MERCURY REDUCTION THROUGH TREATMENT CHEMICAL SELECTION
(FY95 - GL985131-01-0)**

Organization: *Minnesota Pollution Control Agency*

Contact

Carri Lohse-Hanson
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155
Telephone: 612-296-9134
Fax: 612-297-8683
E-mail: *carri.lohse-hanson@pca.state.mn.us*

Award Amount: \$35,000
Dollars Leverages: \$1,750
Project Timetable: 10/1/95 - 6/30/98

Summary: The purpose of this project is to reduce mercury that may be reaching Lake Superior through cooling water and effluents from power plants, boilers and other facilities. Cooling water is treated with pH-altering chemicals, such as acid and caustic soda. Certain feedstock chemicals used to alter the pH have been found to contain high levels of mercury. For example, sulfuric acid produced as a by-product from a lead smelter was found to have significantly higher levels of mercury than sulfuric acid from a copper smelter. The project strategy is to promote the switch from high mercury to low mercury chemical feedstocks.

Environmental Results/Products (Project Ongoing):

MPCA compiled a list of the boilers in the four Minnesota counties bordering Lake Superior.

A survey for boiler operators was distributed at a State-sponsored boiler workshop. Only 10 operators filled out the survey, but those that did indicated that they would be willing to switch to non-mercury caustic if the price was the same. A few operators indicated they would be willing to pay more.

MPCA collected information on mercury concentrations in various grades of caustic soda from, a chemical supplier and a chlor-alkali producer and the Western Lake Superior Sanitary District (WLSSD). Up-to-date cost information is needed.

MPCA will be working with boiler operators on solid waste management issues. Some boilers use high pressure steam gauges that contain large amounts of mercury. For example, one steam gauge collected during a WLSSD mercury amnesty project contained 30 pounds of mercury. Some boilers may also contain mercury switches.

GLNPO Project Officer: Elizabeth LaPlante 312-353-2694

**Title: ROCHESTER EMBAYMENT WATERSHED MERCURY POLLUTION PREVENTION PROGRAM
(FY95 - GL985142-01-0)**

Organization: *Monroe County Department of Health (in coordination with the National Wildlife Federation and Western Lake Superior Sanitary District)*

Contact

Margy Peet
Monroe County Department of Health
P.O. Box 92832
111 Westfall Road
Rochester, NY 14692-8932
Telephone: 716-274-8442
Fax: 716-274-6098
E-mail: mpeet@mcls.rochester.lib.ny.us

Award Amount: \$61,000
Dollars Leveraged: \$34,100
Project Timetable: 9/01/95 - 9/30/98

Summary: The Monroe County Pollution Prevention Team, Strong Memorial Hospital, and Eastman Dental Center are targeting mercury reduction in the Rochester Embayment Area of Concern.

Environmental Results/Products (Project Ongoing):

Monroe County staff documented findings on opportunities and barriers to implementing mercury pollution prevention activities in medical and dental settings. A Mercury Pollution Prevention Study for Medical and Dental Centers Findings Report was published in Spring 1997 and is available from Monroe County.

Monroe County staff is developing a hospital manual and a booklet and poster for dental offices to illustrate cost-effective practices to minimize or eliminate the release of mercury to the environment. Strong Memorial Hospital in Rochester and Eastman Dental Center are planning and implementing mercury pollution prevention projects in their respective facilities. Monroe County will seek voluntary commitments with 12 hospitals and 50 dental offices located in the Rochester Embayment watershed to advance pollution prevention.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: MERCURY REDUCTION AND POLLUTION PREVENTION IN HOSPITALS
(FY95 - GL985135-01-0)**

Organization: *National Wildlife Federation (in coordination with Monroe County, New York and Western Lake Superior Sanitary District)*

Contact

Guy Williams
National Wildlife Federation
Great Lakes Natural Resource Center
506 E. Liberty, 2nd Floor
Ann Arbor, MI 48104-2210
Telephone: 313-769-3351
Fax: 313-769-1449
E-mail: *guy@nwf.org*

Award Amount: \$41,350
Dollars Leveraged: \$22,016
Project Timetable: 9/25/95 - 6/30/97

Summary: The National Wildlife Federation (NWF) conducted a conference in October 1996 to promote the reduction/elimination of mercury use in hospitals. They developed a source reduction plan for hospitals, Mercury Pollution Prevention in Health Care: A Prescription for Success.

Environmental Results/Products:

The National Wildlife Federation, in cooperation with the Michigan Health and Hospital Association and other partners, developed a practical and economical plan for reduction of mercury use in the health care industry. This plan, as well as a summary of the proceedings from the October 1996 conference on reduction/elimination of mercury use in hospitals, is detailed in the report, Mercury Pollution Prevention in Health Care: A Prescription for Success. Among the NWF recommendations to eliminate mercury use, hospitals should adopt new procurement and training policies. This report is available at: *<http://www.greatlakes.nwf.org/pp/hosprpt.htm>* on the Internet, or from the NWF.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: ZERO DISCHARGE PILOT PROJECT
(FY95 - GL985121-01-0)**

Organization: *Western Lake Superior Sanitary District (in coordination with Monroe County, New York and the National Wildlife Federation)*

Contact

Tim Tuominen
Western Lake Superior Sanitary District
2626 Courtland Street
Duluth, MN 55806-1894
Telephone: 218-722-3336 x324
Fax: 218-727-7471
E-mail: p2team@cp.duluth.mn.us

Award Amount: \$100,000
Dollars Leveraged: \$519,000

Project Timetable: 9/01/95 - 8/31/98

Summary: The Western Lake Superior Sanitary District (WLSSD) is developing an integrated multi-media program to reduce the discharge of mercury using “front end” pollution prevention techniques with hospitals, clinics, educational institutions, laboratories, and dental practices.

Environmental Results/Products (Project Ongoing):

The Western Lake Superior Sanitary District staff is conducting on-site visits at hospitals, clinics, educational institutions, laboratories, and dental practices to evaluate prevention, recycling, or treatment opportunities to reduce or eliminate mercury discharges. In cooperation with each type of customer, WLSSD will assist in developing pollution prevention strategies and promoting implementation of these plans. In addition, staff is securing a commitment of zero discharge from WLSSD’s own facilities.

The WLSSD staff and local dentists have developed a process for recycling amalgam waste and strategies for recycling training. Staff is evaluating advanced treatment systems to reduce mercury discharges from dentists.

WLSSD staff identified many mercury-containing sources in hospitals from histopathology labs. Trap cleaning has demonstrated an abundance of historic mercury.

An investigation of the University of Minnesota-Duluth, showed widespread use of mercury-containing equipment and poor management of all potential mercury sources. An audit revealed mercury-free equipment replacement costs are approximately \$10,000. The University is now replacing all equipment and will be line cleaning to remove historic sources of mercury.

WLSSD developed the Blueprint for Mercury Elimination: a Guide for Wastewater Treatment Plants as part of the Zero Discharge Pilot Project. The blueprint, funded by the Great Lakes Protection Fund, is available from WLSSD.

GLNPO Project Officer: Danielle Green 312-886-7594

**Title: GREAT LAKES ALTERNATIVE CLEANING EDUCATION PROGRAM
(FY94 - GL995723-01-0)**

Organization: *Center for Neighborhood Technology*

Contact

Sylvia Ewing Hoover
The Center for Neighborhood Technology
2125 W. North Avenue
Chicago, Illinois 60647
Telephone: 773-278-4800 x129
Fax: 773-278-3840
E-mail: *sylvia@cnt.org*

Award Amount: \$76,407
Dollars Leveraged: \$229,304
*(includes subsequent funding to continue
work promoting wet cleaning)*
Project Timetable: 10/1/94 - 10/31/95

Summary: The Center for Neighborhood Technology (CNT) demonstrated the commercial viability of a water-based cleaning technique as an alternative to traditional dry cleaning that relies on chlorinated solvents. CNT worked with The Greener Cleaner, a private wet cleaning shop, for one year. CNT promoted an industry-wide shift to cleaning techniques that do not use toxic solvents and focused outreach efforts on the dry cleaning industry in Buffalo, Cleveland, Detroit, Milwaukee and Northwest Indiana.

Environmental Results/Products:

The Center for Neighborhood Technology created an Internet site at: http://www.cnt.org/sus_man/wet_cln.html and a Wet Cleaning Hotline: 773-278-4800 x299. Monitoring of the water discharges from the Greener Cleaner showed that no chemicals of concern were being released from the cleaning facility.

As a result of information gained through the wet cleaning project, some dry cleaners reduced their use of chlorinated solvents by increasing wet cleaning. At the start of the project, three cleaners had wet cleaning equipment. At the end of the project over 100 cleaners have this equipment. Specifically in the Great Lakes basin, CNT helped grow wet cleaning shops in Illinois (7), Wisconsin (3), Michigan (1), Ohio (3) and Buffalo (2).

The Greener Cleaner demonstration shop was the catalyst for the Professional Wet Cleaning Partnership between the Union of Needletrade, Industrial, Textile Employees (UNITE), Massachusetts Toxic Use Reduction Institute, Greenpeace, four major dry cleaning associations, and the Center for Neighborhood Technology. The partnership is working to get dry cleaners the resources they need to make wet cleaning an essential part of the garment care industry.

Over 45 groups toured the Greener Cleaner demonstration shop. 1,200 individuals requested information on wet cleaning and continue to receive regular updates. CNT developed the first wet cleaning newsletter, which attracted national interest. In addition, CNT targeted outreach to Korean dry cleaners including translating some materials into Korean and recruiting leadership from the Korean American Dry Cleaners Association to serve on the project's advisory committee.

CNT launched a week of intensive educational outreach activities, with local partners, in Buffalo, Cleveland, Milwaukee, Detroit, and Indianapolis. CNT developed profiles of the dry cleaning industry in Buffalo, Cleveland, Detroit, Milwaukee, and Northwest Indiana, and introduced dry cleaners in these areas to wet cleaning. CNT also crafted a report on various wet cleaning machines.

In Fall 1995, CNT held a wet cleaning conference in Chicago. Attendees included representatives from dry cleaners, trade association leaders, equipment manufacturers, suppliers, representatives from environmental organizations, and regulators. All Great Lakes States, except Minnesota, were represented at this conference. This major symposium allowed an opportunity for stakeholders and industry to start merging ideas on wet cleaning.

This project received extensive media coverage, including coverage in the three main dry cleaning trade publications.

GLNPO Project Officer: Danielle Green 312-886-7594

**Title: CAMPAIGN FOR A SUSTAINABLE CALUMET REGION
(FY94 - GL995704-01-0)**

Organization: *Center for Neighborhood Technology*

Contact

Ignacio Correa-Ortiz	Award Amount:	\$89,045
Center for Neighborhood Technology	Dollars Leveraged:	\$4,686
2125 W. North Avenue		
Chicago, Illinois 60647		
Telephone: 773-278-4800 x120	Project Timetable:	10/01/94 - 10/31/95
Fax: 773-278-3840		
E-mail: <i>ico@cnt.org</i>		

Summary: The Center for Neighborhood Technology (CNT) developed a model community participation process for the cleanup and responsible reuse of brownfield sites in Southeast Chicago.

Environmental Results/Products:

CNT developed a brownfield slide show, a “Bill of Rights” outlining general criteria for cleanup and reuse of brownfield sites in Southeast Chicago, and brownfield fact sheets: The Challenge of Brownfields: Recycling Old Industrial Property into Opportunities for Community Redevelopment and A Community Checklist for Identifying Potential Environmental Hazards at Old Commercial or Industrial Sites.

The report, “Recycling Contaminated Land: A Community Resource Guide” is available at: http://www.cnt.org/sus_man/bf3.htm on the Internet. There have been over 1200 visits to this site.

Through community group input, CNT identified priority brownfield sites in Southeast Chicago. These include USX South Works, Wisconsin Steel, Anderson/Schroud LTV property, West Pullman brownfields cluster near 119th/Halstead and a 25 acre parcel south of Altgeld Gardens.

A working group met periodically to discuss local brownfields issues. Regular participants included: Community Workshop on Economic Development, Mexican Community Committee, Southeast Environmental Task Force, Chicago State Neighborhood Assistance Center, People for Community Recovery, Citizens for a Better Environment and the Chicago Legal Clinic. Priorities for the working group members included establishing a training program at a local educational institution to provide residents with the capacity to access environmental technician and cleanup jobs, identifying methods to influence brownfields redevelopment decisions at the larger sites, and promoting sustainable redevelopment of brownfield sites.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: CREATIVE POLLUTION SOLUTIONS FOR SOUTHEAST CHICAGO
(FY94 - GL995677-01-0)**

Organization: *Chicago Legal Clinic, Inc.*

Contact

Keith Harley
Director, Environmental Law Program
Chicago Legal Clinic, Inc.
2938 E. 91st Street
Chicago, Illinois 60617
Telephone: 773-731-1762
Fax: 773-731-4264

Award Amount: \$60,000
Dollars Leveraged: \$5,571
Project Timetable: 10/1/94 - 9/30/97

Summary: The goal of this project was to build knowledge, consensus and action regarding pollution prevention in Southeast Chicago by marketing pollution prevention resources to community residents and area businesses, on a person-to-person basis. Activities included the development of a pollution prevention newsletter, the development of a pollution prevention electronic repository marketed to local users, and conducting a series of meetings with local business and community leaders to introduce the concept of pollution prevention.

Environmental Results/Products:

The Chicago Legal Clinic (Clinic) distributed pollution prevention information in a number of ways. The Clinic developed a partnership with Chicago law firm Gardner, Carton & Douglas and co-produced five issues of a pollution prevention newsletter distributed to over 500 readers, predominantly businesses, in Southeast Chicago.

The Clinic developed, in partnership with the Information Center at Chicago-Kent College of Law, a pollution prevention library consisting of over 500 pieces, including an annotated bibliography. These resources are available in Southeast Chicago. General pollution prevention information will be available on the Internet. The pollution prevention information gathered during this project will continue to be actively marketed to appropriate industries and businesses.

Clinic staff conducted a series of educational events to introduce basic pollution prevention concepts, including a February 1995 luncheon for key community leaders from business and community organizations. In April 1995, the Clinic co-sponsored a regional Toxic Release Inventory (TRI) workshop. The information presented included use of TRI data as a means to enable community-industry dialogue, with specific attention paid to good neighbor agreements, citizen electronic access to and use of TRI data, and community assistance panels. Recently, the Clinic conducted individual meetings with more than 15 community and business leaders about pollution prevention and locally available pollution prevention resources.

GLNPO Project Officer: Danielle Green 312-886-7594

**Title: GREAT PRINTERS PROJECT
(FY94 - GL995679-01-0)**

Organization: *Council of Great Lakes Governors*

Contact

Lois Morrison
Council of Great Lakes Governors
35 E. Wacker Drive - Suite 1850
Chicago, Illinois 60601
Telephone: 312-407-0177
Fax: 312-407-0038
E-Mail: *morrison@cglg.org*

Award Amount: \$61,205
Dollars Leveraged: \$3,220
Project Timetable: 10/1/94 - 9/30/95

Summary: The Council of Great Lakes Governors (Council), in partnership with the Environmental Defense Fund and the Printing Industries of America, Inc., successfully launched the Great Printers Project. Eighty percent of printing plants employ less than 20 people, and one-third of the national printing industry is concentrated in the eight Great Lakes States. The first phase of the project centered around developing precedent setting environmental policy recommendations for the printing industry in the Great Lakes basin. These recommendations were endorsed by the Administrator of the U.S. Environmental Protection Agency and the Governors from the eight Great Lakes States.

The goal of the Great Printers Project is to make pollution prevention the first choice of the lithographic printing industry in the Great Lakes States in meeting and exceeding its environmental and human health protection responsibilities. This was the first project in the nation to seek to create an entire business environment conducive to pollution prevention for an industry sector.

The second phase of the Great Printers Project, partially supported through this grant, focused on implementation of the policy recommendations through State pilots in Illinois, Michigan, Minnesota, and Wisconsin. The Council served on the steering committee for the Regional Great Printers Team to ensure coordination between the various pilot efforts.

Environmental Results/Products:

The Council of Great Lakes Governors worked with their project partners and with Illinois, Michigan, Minnesota and Wisconsin to establish the pilot projects and secure funding for them. The Council also conducted outreach to the non-pilot States. Indiana, Pennsylvania and Ohio were interested in working with printers in their States.

The Council worked with the environmental agencies in the pilot States to identify opportunities for the Great Printers Project to build upon existing State programs such as Illinois' "Clean Break" amnesty program and Minnesota's Beyond Compliance program.

The Great Printers Project has continued beyond the GLNPO grant period. Information on the Great Printers Project can be found on the Internet at: *<http://www.cglg.org>* under the 'Projects' heading.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: LOCAL GOVERNMENT POLLUTION PREVENTION TARGETING PROJECT
(FY94 - GL995674-01-0)**

Organization: *Erie County Department of Environment and Planning*

Contact

Bonnie Lange
Erie County
Department of Environment and Planning
95 Franklin Street
Buffalo, New York 14202
Telephone: 716-858-8560
Fax: 716-858-7713
E-mail: *bonnie@cdbg.co.erie.ny.us*

Award Amount: \$50,000
Dollars Leveraged: \$6,000
Project Timetable: 1/1/95 - 3/31/97

Summary: Using regulatory databases (e.g. SARA Title III), Erie County, New York identified businesses discharging persistent, bioaccumulative toxic substances into the Buffalo River and Niagara River Areas of Concern. Companies were invited to participate in a nonregulatory pollution prevention review to develop site-specific pollution prevention plans. An advisory group for this project included representatives from: the Buffalo Sewer Authority, Erie County Sewer District, the Local Emergency Planning Committee (LEPC) and three different divisions of the New York State Department of Environmental Conservation.

Environmental Results/Products:

Upon examination of the regulatory databases, regulators identified 25 companies, from a pool of 96, that could most benefit from pollution prevention assistance. These 25 facilities received a letter from Erie County describing the project and offering free, non-regulatory technical assistance. Ten companies participated in the project and received on-site technical assistance.

The technical assistance resulted in source reduction successes such as: manufacturing process modifications, recycling industrial byproducts and other waste-streams, identifying lead-free raw materials, recirculating water, switching paint operations from solvent to water-based, replacing clay absorbents with a "waste free" alternative, and energy conservation recommendations. The Erie County Office of Pollution Prevention will continue to work with the facilities.

GLNPO Project Officer: Danielle Green 312-886-7594

**Title: ERIE COUNTY CLEAN SWEEPS II
(FY94 - GL995675-01-0)**

Organization: *Erie County Department of Environment & Planning, Division of Environmental Compliance Services*

Contact

Tom Hersey	Award Amount:	\$75,000
Erie County Department of Environment & Planning	Dollars Leveraged:	\$56,000
Division of Environmental Compliance Services		
95 Franklin Street	Project Timetable:	10/01/94 - 1/1/96
Buffalo, New York 14202		
Telephone: 716-858-7674		
Fax: 716-858-7713		
E-mail: <i>hersey@cdbg.co.erie.ny.us</i>		

Summary: This project built upon a very successful 1993 collection of 8000 pounds of pesticides including arsenic, DDT and chlordane. Implementing recommendations from the initial clean sweeps, Erie County regionalized the collection of agricultural waste pesticides. The Clean Sweeps II pesticides collection program provided disposal opportunities for farmers and agribusiness in Niagara, Erie, Cattaraugus and Chautauqua counties. In addition, Clean Sweep II offered an opportunity for non-agricultural Erie County conditionally-exempt small quantity generators, such as schools, to surrender waste pesticides.

Environmental Results/Products:

In April 1995, Erie County staff collected 32,300 pounds of waste pesticides from 119 registrants at 2 events. The pesticides collected included banned products such as DDT and DDT mixtures, arsenic mixtures, dinoseb, chlordane and 700 pounds of dioxin-bearing pesticides.

Conditionally-exempt small quantity generators turned in 11,000 pounds of waste pesticides. Examples of these small quantity generators include school district building and grounds maintenance departments, nurseries, and county recreational facilities.

GLNPO Project Officer: Danielle Green 312-886-7594

**Title: AUTO INDUSTRY POLLUTION PREVENTION PROJECT: PHASE II
(FY94 - GL995696-01-0)**

Organization: *Michigan Department of Environmental Quality (formerly Department of Natural Resources)*

Contact

Marcia Horan	Award Amount:	\$76,680
Michigan Department of Environmental Quality	Dollars Leveraged:	\$48,520
Environmental Assistance Division		
P.O. Box 30457	Project Timetable:	10/1/94 - 12/31/95
Lansing, Michigan 48909-7957		
Telephone: 517-373-9122		
Fax: 517-335-4729		
E-mail: horanm@state.mi.us		

Summary: This project built upon previous voluntary efforts by Chrysler, Ford and General Motors (Auto Companies) to reduce the release of persistent toxic substances in the Great Lakes basin. Michigan staff focused the Auto Industry Pollution Prevention Project: Phase II efforts on establishing an Auto Project Advisory Group, enhancing coordination with the Canadian Auto Project, expanding outreach to suppliers, and evaluating the 1991 Auto Project agreement and list of targeted persistent toxics.

Environmental Results/Products:

Since 1991, the year the Auto Project began, releases of the targeted 65 listed Great Lakes persistent toxic (GLPT) substances from auto company facilities (as reported under in the Toxic Release Inventory) have declined every year except one. These reductions, mainly accomplished through the use of specific pollution prevention actions, process improvements, and recycling, are explained in detail in the Auto Project pollution prevention reports and case studies.

The Michigan Department of Environmental Quality (MDEQ), AAMA, Chrysler, Ford and General Motors published the Automotive Pollution Prevention Project: Progress Report II. MDEQ also published a bound document containing 33 pollution prevention case studies and an addendum with 20 case studies submitted by the auto companies. The June 1997 US Automotive Pollution Prevention Project: Progress Report III details efforts beyond this grant period, including data on reportable releases of U.S. EPA Toxics Release Inventory (TRI) chemicals and pollution prevention activities and accomplishments for each of the three participating companies. It is available from MDEQ. Information on the Auto Project, including 60 pollution prevention case studies, is available at: <http://www.deq.state.mi.us/ead/p2sect/auto/> on the Internet.

The project partners formed an Auto Project Advisory Group composed of representatives from trade associations, higher education, technology centers, public interest groups, a foundation and government. During the grant period, they met twice a year to review progress on the Auto Project. The Canadian Auto Project and U.S. Auto Project representatives met on a semi-annual basis to enhance binational pollution prevention efforts in the automotive industry and to exchange information regarding their respective projects.

The American Automobile Manufacturers Association (AAMA) trade association and the Auto Companies co-sponsored the Michigan Department of Environmental Quality (MDEQ) annual waste reduction conference in the Detroit metropolitan area in December 1994 and 1995. The U.S. and Canada Auto Project partners jointly sponsored the “North American Supplier Environmental Workshop” in October 1995. More than half the participants at the North American conference were auto suppliers. All 5,000 tier-one auto suppliers for Chrysler, Ford and General Motors received project progress reports, which included pollution prevention case studies.

Project Progress Beyond the Grant Period

In 1996 the auto companies decided to broaden the project from an exclusive focus on the Great Lakes to one including operations in the entire United States. This expansion reflects the fact that pollution prevention activities are implemented on a corporate-wide basis. Current industry efforts target all materials of concern rather than being limited to the 65 persistent toxic chemicals focused on for the Great Lakes basin. It is important to note that 74% of the auto companies’ U.S. facilities are located in the Great Lakes States. The Auto Project has matured from a government led and funded project to a nation-wide industry led project with support from State and Federal governments and the advisory group.

Combined pollution prevention achievements for Chrysler, Ford, and General Motors include a 56.9% reduction in U.S. EPA TRI reportable releases and a 63.9% reduction in U.S. EPA 33/50 Program releases since the 1988 base year. There has also been a 9.2% production normalized reduction in the Great Lakes Persistent Toxics, targeted since 1991 in the Great Lakes region. Excluding zinc releases, the Auto Project achieved a 54.5% production normalized reduction of Great Lakes Persistent Toxics since 1991.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: POLLUTION PREVENTION EDUCATION AND TECHNICAL ASSISTANCE FOR
THE LAKE MICHIGAN AND LAKE SUPERIOR BASINS IN WISCONSIN
(FY94 - GL995676-01-0)**

Organization: *University of Wisconsin, Cooperative Extension, Solid and Hazardous Waste Education Center*

Contact

Phillip (Jack) Annis
Pollution Prevention Specialist
University of Wisconsin, Cooperative Extension,
Solid and Hazardous Waste Education Center
161 W. Wisconsin Avenue, Suite 6000
Milwaukee, Wisconsin 53203
Telephone: 414-227-3371
Fax: 414-227-3165
E-mail: pannis@facstaff.wisc.edu

Award Amount: \$140,028
Dollars Leveraged: \$7,101
Project Timetable: 10/1/94 - 5/30/97

Summary: The Solid and Hazardous Waste Education Center (SHWEC) provided broad-based pollution prevention information, education and technical assistance to Wisconsin businesses in the Lake Michigan and Lake Superior basins. SHWEC worked with a broad spectrum of industries and businesses including manufacturers, marinas, dry cleaners, vehicle maintenance and auto body repair and medical facilities to target reduction of specific bioaccumulating substances, most frequently mercury. When working with companies, SHWEC addressed air emissions, wastewater discharges and hazardous waste. SHWEC conducted surveys at the beginning and the end of the project to gather pollution prevention trend information and to measure the project's effectiveness. SHWEC also helped establish local coalitions which are continuing to work on pollution prevention and waste reduction activities beyond the grant project period.

Environmental Results/Products:

Outreach Activity

SHWEC conducted 55 major outreach activities providing pollution prevention information, education and guidance to over 3,000 people. Attendees at outreach programs included many diverse industries that generate wastes and emissions of all types. Attendees also included consulting engineers, regulatory personnel, and local government employees. Numerous partners were involved in the outreach activities including the Wisconsin Department of Natural Resources, Wisconsin Department of Commerce, the Lake Michigan Federation, Citizens for a Better Environment, Publicly Owned Treatment Works and trades associations.

SHWEC used several methods to deliver pollution prevention information, such as; in-person training sessions, satellite downlink, an education telecommunication network and video tape. In general, the most successful outreach programs were face-to-face workshops, as measured by the number of attendees. The Industrial Cleaning and Paints & Coatings expositions, held in the Milwaukee area, were effective because they provided instant connections with vendors of equipment and materials who could help implement pollution prevention actions.

The outreach programs, while extremely effective for delivering the pollution prevention message, also served as a non-threatening method to supply regulatory compliance information. The highest rate of attendance for the programs occurred when there was an emphasis on regulatory compliance information, thus indicating that compliance issues motivate companies to investigate pollution prevention options.

Technical Assistance

SHWEC conducted 75 pollution prevention assessments for very large manufacturers with over 200 employees to very small vehicle maintenance, machine shops and marinas with only two or three employees. In addition, SHWEC responded to approximately 200 requests for detailed information packages containing regulatory guidance fact sheets, new and existing manufacturing technology information, materials substitution information and vendor information.

The largest amount of mercury recovered was from recycling of fluorescent lamps. Specific mercury reductions occurred in medical facilities and veterinary facilities. The Childrens Hospital of Milwaukee was a 1996 winner of the *Wisconsin Governors Award for Hazardous Waste Reduction*. Another hospital eliminated a mercury problem when SHWEC discovered that batteries containing mercury and containers with other toxics were being incinerated instead of separated from the waste streams. In addition, many companies assessed by SHWEC implemented pollution prevention projects.

Survey

SHWEC conducted surveys at the beginning and at the end of the project period to gather environmental trend information relating to pollution prevention. Over 78% of the companies responding to the surveys indicated that they have completed a project to eliminate a hazardous waste, air emission or wastewater discharge in the last two years. The companies surveyed represent a cross-section of hazardous waste-generating industries. The two main reasons cited in this survey as to why companies have implemented pollution projects are regulatory compliance and concern for the environment. Economics was not a significant motivator.

Partnerships

SHWEC introduced a “business to business” pollution prevention roundtable by establishing Partners for Business Environmental Quality in Waukesha County. This provides one-stop shopping for businesses looking for environmental information including pollution prevention, waste reduction and recycling. SHWEC also worked with coalitions such as the Southeast Wisconsin Waste Reduction Coalition and individual industrial groups in several Wisconsin counties.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: ERIE COUNTY REGIONAL MUNICIPAL POLLUTION PREVENTION
PROGRAM
(FY93 - GL995373-01-0)**

Organization: *Western New York Economic Development Corporation/Erie County*

Contact

Tom Hersey	Award Amount:	\$50,000
Erie County Department of Environment and Planning	Dollars Leveraged:	\$6,000
95 Franklin Street	Project Timetable:	10/01/93 - 9/30/96
Buffalo, New York 14202		
Telephone: 716-858-7674		
Fax: 716-858-7713		
E-mail: <i>hersey@cdbg.co.erie.ny.us</i>		

Summary: Erie County, New York established a pollution prevention partnership with the Regional Municipality of Hamilton-Wentworth, Ontario. The Erie County Office of Pollution Prevention also worked with other local governments within Erie County to adopt pollution prevention policies, practices, and procedures.

Environmental Results/Products:

Bilateral Partnership with Hamilton-Wentworth

The Regional Municipality of Hamilton-Wentworth and Erie County signed a Memorandum of Understanding on March 30, 1995 which formally launched training and information sharing networks linking the communities.

Erie County conducted two pollution prevention training sessions for Publicly Owned Treatment Works (POTW) employees. Over 100 POTW inspectors and managers from both New York and Ontario attended these sessions. The Regional Municipality of Hamilton-Wentworth hosted two Pollution Prevention Symposiums for municipal officials throughout Canada and the United States, with more than 150 officials attending these workshops.

The bilateral partnership has enhanced information sharing, allowing both governments to avoid duplicating efforts. Erie County and the Regional Municipality of Hamilton-Wentworth continue to share information about pollution prevention processes, policies and training.

Erie County/Town of Amherst Pollution Prevention Alliance

The Erie County Office of Pollution Prevention (ECOPP) established a \$20,000 grant program, soliciting proposals from the 44 municipalities within Erie County. Originally, ECOPP envisioned dividing the funds for local pollution prevention efforts between four municipalities. However, the Town of Amherst was the only municipality which demonstrated interest in carrying out the program. Thus the grant program focus shifted towards supporting incorporation of pollution prevention strategies into one local government's policies and procedures.

The Town of Amherst, with assistance from Erie County, developed a work plan to incorporate pollution prevention into its policies and procedures. A Town policy, adopted in April 1996, establishes pollution prevention as a priority in the use and management of hazardous materials. Key Town employees were trained and the project received a commitment from the Town's leadership before the project progressed. Pollution prevention has been included in the pretreatment inspection process, routine fire and safety inspections, the site plan review process, and the building inspection process. The Pretreatment Coordinator supplies pollution prevention information and assistance to Town of Amherst businesses.

Pollution prevention assessments were conducted at a hospital, a university facility management department, a university vehicle maintenance department, two large manufacturing companies, a restaurant, a hotel, two print shops, a research park, and a dental products manufacturer. The assessments were voluntary and confidential. Town and County staff identified opportunities for local businesses to both reduce the amount of waste they generate and to save money.

The Town and the County organized pollution prevention workshops for: Health Care Facilities; Hotels and Restaurants; and Vehicle Maintenance Facilities. These industry sectors were chosen because they are ubiquitous throughout the Town of Amherst.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: HOUSEHOLD HAZARDOUS WASTE COLLECTION PROGRAM AND
POLLUTION PREVENTION ASSESSMENTS
(FY93 - GL995415-01)**

Organization: *Michigan Department of Environmental Quality (formerly Department of Natural Resources)*

Contact

Julie Feldpausch, Program Analyst
Environmental Assistance Division
Michigan Department of Environmental Quality
P.O. Box 30457
Lansing, MI 48909-7957
Telephone: 517-335-0081
Fax: 517-335-4729
E-mail: *feldpauj@state.mi.us*

Award Amount: \$150,000
*(\$100,000 for waste collection,
and \$50,000 for technical assistance)*
Dollars Leveraged: \$5,000

Project Timetable: 10/1/93 - 9/30/96

Summary: This project focused on waste collection and technical assistance in the Michigan, Minnesota and Wisconsin portions of the Lake Superior Basin.

Collection

The purpose of this project was to provide Michigan, Minnesota, and Wisconsin Lake Superior basin homeowners and users of agricultural products a means to dispose of unwanted household hazardous waste and unusable agricultural pesticides. By providing this service at no cost to the participants, it assured that the materials collected would be recycled or disposed in an environmentally safe manner, thus avoiding the possible environmental consequences of improper disposal.

Environmental Results/Products:

Local contact agencies put out educational information on the need for the project, and the times, locations and types of materials eligible for collection. This included newspaper articles or advertisements, radio and television spots, and informational bulletins distributed by local recycling or environmental groups. The publicity and information distribution added greatly to the success of this project.

Staff collected over five semi-truck loads of hazardous wastes. The wastes collected at the five central collection/assembly areas (Duluth, Marquette, Houghton, Ironwood, and Escanaba) included 455 pounds (lbs.) of mercury (including lab pack solutions, lab pack solids and elemental), 8,999 lbs. loose pack pesticide liquids (dioxins <30%), and 1,017 lbs. of florescent bulbs.

Pollution Prevention Assessments

More than forty retired engineers, scientists, and other professionals were hired through the Retired Engineer Technical Assistance Program (RETAP) and trained to conduct on-site waste reduction assessments for local businesses and Publicly Owned Treatment Works (POTWs) whose discharges affect Lake Superior. RETAP staff provided specific guidance to industries and businesses to reduce the release of toxins. These retired professionals were located throughout the State and represented diverse industrial and occupational disciplines. Their extensive experience garnered respect and receptivity among Michigan businesses and institutions. All pollution prevention activities were closely coordinated with the local POTWs.

Environmental Results/Products:

After detailed on-site assessments, RETAP staff identified problems and opportunities to reduce waste and achieve cost savings for the facilities. The assessments were free, voluntary, nonregulatory, and confidential. RETAP conducted 26 preassessments and 14 full assessments at 10 industries and 16 institutions. The types of industries assessed included wastewater treatment, metals/machinery fabrication, wood products, corrugated medium, solid waste management, automotive, and pulp and paper. The types of institutions assessed included hospitals and schools—elementary, high school, community college, and university. Industrial and institutional organizations continue to request additional assessments beyond the scope of the funded project. Potential annual cost savings from RETAP recommendations ranged from \$10,000 to \$1.5 million per company.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: MERCURY/PCB OUTREACH AND COLLECTION PROGRAM AND TECHNICAL ASSISTANCE
(FY93 - GL995440-01-0)**

Organization: *Minnesota Pollution Control Agency*

Contacts

Mercury/PCB Project

Emily Moore
Minnesota Office of Environmental Assistance
Problem Materials Program
520 Lafayette Road N. (2nd Floor)
St. Paul, MN 55155-4100
Telephone: 612-215-0201
Fax: 612-215-0246
E-mail: *emily.moore@moea.state.mn.us*

Technical Assistance Project

Ned Brooks
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155
Telephone: 612-297-8680
Fax: 612-297-8676
E-mail: *ned.brooks@pca.state.mn.us*

Award Amount: \$115,000
Dollars Leveraged: \$5,750

Project Timetable: 10/01/93 - 9/30/95

Summary: Minnesota conducted an outreach program for mercury and PCB-containing products and delivered pollution prevention technical assistance to small and medium-sized businesses in the Lake Superior basin.

Environmental Results/Products:

Outreach

Staff identified mercury and PCB-containing wastes generated by service industries and conducted a series of meetings and interviews with stakeholders to discuss the needs of the affected community and suggestions for how to address the problem. Project stakeholders included contractors, businesses, trade associations, chambers of commerce, local and State governments, utilities, product manufacturers and suppliers, haulers, and recycling and disposal companies. Staff also participated in trade shows and monthly meetings of business organizations in order to educate attendees about mercury issues.

Slide Shows

Staff developed two slide presentations. The first slide show targets trade groups that generate mercury and PCB containing wastes and is designed for use with brochures (see below). It motivates contractors and service technicians to manage their wastes properly and to keep mercury and PCBs out of the waste stream. The second slide show, designed for the general public, is specifically about mercury. It encourages consumers to purchase alternative products, where appropriate, and informs consumers how to dispose of mercury-containing products.

Brochures

Staff developed brochures on mercury and PCBs. The mercury brochure contains fact card inserts describing common items which contain mercury. These brochures can be found at: <http://www.epa.gov/glnpo/p2/> on the Internet.

Display

Staff developed a display to show the types of products that contain mercury. The display titled, “WHO ME? Do I Contribute Mercury to the Environment?,” has two components. There is a three-panel display board with pictures and text about mercury’s effect on the environment. A collection of mercury-containing products assembled on the table in front of the display board shows items such as a thermostat, switches and fluorescent lights. This collection is accompanied by text about mercury contained in the products and non-mercury alternatives.

State specific copies of the display are housed at the Michigan and Wisconsin environmental regulatory agencies, and throughout Minnesota. Two generic copies are housed at the U.S. Environmental Protection Agency in Chicago.

Collection

Minnesota staff worked with the partners to identify collection needs, potential collection sponsors, regulatory and economic barriers to collection and proper management of mercury- containing wastes. There is a need to develop waste collection systems which are convenient and economically feasible for service industries and businesses.

Staff obtained the rights to use a logo for florescent bulb recycling projects. This logo, modeled after the chasing arrows recycling symbol, is in the public domain and thus can be used as part of a unified campaign around Lake Superior (and beyond) for lamp collection programs.

Technical Assistance

A team from the University of Minnesota-Duluth Department of Chemical Engineering generated a potential client list for pollution prevention assessments, cataloged and reviewed pollution prevention literature, and called potential clients. They used data from five Publicly Owned Treatment Works (POTWs) to scan for priority pollutants. They also conducted an information needs assessment and examined the way businesses used existing pollution prevention information.

Site Assessments

Nine pollution prevention assessment site visits were made to businesses (3 oil distributors, 2 printing companies, a furniture refinisher, a laboratory, a veterinary hospital, a printed circuit board assembler, and a large forest products facility). Based on the site visits, team members drafted a report which included recommendations for pollution prevention opportunities. Each assessment took approximately 50 staff-hours to complete and included four team members visiting the businesses, gathering pollution prevention information, and writing the report.

Lessons Learned

Focusing on one or two business types for visits would reduce amount of background pollution prevention information gathered and allow for development of generic reports which could be quickly modified for each business visited.

Having two rather than four team members per assessment could increase the number of site visits possible.

Soliciting clients via letters and phone calls yielded clients who were already practicing pollution prevention. These clients probably chose to participate to find out if there was any more they could do. The project did not reach the businesses that could have benefitted the most because these businesses probably would not voluntarily allow an assessment to be conducted. Other methods to locate clients might include: referral by regulatory agencies or other agencies involved in pollution prevention/hazardous waste minimization activities, referral by bank loan officers, or referral by POTW officials.

Pollution Prevention Database User Needs Assessment

A survey of businesses examined use of pollution prevention data bases. Findings for Minnesota's Lake Superior basin showed that while 73% of the businesses responding to the survey did own a computer, 51% indicated that they did not know what an electronic data base was nor how to use one. A majority, 52%, indicated that they would use a pollution prevention technical assistance center.

GLNPO Project Officer: Danielle Green 312-886-7594

**Title: OHIO GREAT LAKES BASIN PRETREATMENT POLLUTION PREVENTION
(FY93 - GL995374-01-0)**

Organization: *Ohio Environmental Protection Agency*

Contact

Mohammed Islam
Pretreatment Unit
Division of Surface Water
Ohio Environmental Protection Agency
P.O. Box 1049
1800 Watermark Drive
Columbus, OH 43216-1049
Telephone: 614-644-2018
Fax: 614-644-2329
E-mail: *mohammed.islam@epa.state.oh.us*

Award Amount: \$80,000
Dollars Leveraged: \$4,210
Project Timetable: 9/01/93 - 9/30/96

Summary: This was an education project which introduced pollution prevention into Publicly Owned Treatment Works (POTW) and industrial user operations and into Ohio pretreatment programs in the Lake Erie basin.

Environmental Results/Products:

Brochures with general pollution prevention information were distributed to approximately 20,000 industrial users of POTWs and 75,000 homeowners throughout the Ohio portion of the Lake Erie basin. A newsletter was distributed to the Lake Erie POTWs.

The Ohio Environmental Protection Agency (EPA) developed a Pollution Prevention Training Resource Guide for Publicly Owned Treatment Works.

In October 1994, Ohio EPA conducted training for POTWs in Archbold, Sandusky, and Akron, Ohio. Two hundred forty-seven individuals attended these training sessions. Approximately 50 copies of the training manuals were sent to representatives in each of the Great Lakes States and to several Indian Nations. Ninety-nine copies were distributed to Ohio Pretreatment Coordinators who did not attend the training and manuals were given to the Operator Training Committee of Ohio (OTCO) for the purpose of incorporating pollution prevention into OTCO training sessions.

As part 1994 pollution prevention training evaluation, several POTWs in the Lake Erie basin indicated that they were interested in additional pollution prevention assistance. Ohio EPA selected four of the facilities requesting additional pollution prevention assistance. The assistance included two waste reduction assessments for industrial users identified by the POTWs (ITT Automotive in Archbold POTW and Metokote in Lima POTW), POTW operations assessment and training for personnel at Archbold and Wauseon POTWs, workshops on pollution prevention for industrial users in Archbold and Freemont POTWs and working with Lima POTW on a public outreach campaign to reduce mercury discharges to the sewer. A final report was prepared summarizing this part of the project.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: TOXICS POLLUTION PREVENTION MENTORING
(FY93 - GRANT # GL995412-01-0)**

Organization: *Western Lake Superior Sanitary District*

Contact

Tim Tuominen
Western Lake Superior Sanitary District
2626 Courtland Street
Duluth, MN 55806-1894
Telephone: 218-722-3336 x324
Fax: 218-727-7471
E-mail: *p2team@cp.duluth.mn.us*

Award Amount: \$95,000
Dollars Leveraged: \$5,000
Project Timetable: 9/1/93 - 9/30/96

Summary: The purpose of this project was to help Lake Superior communities build pollution prevention capabilities. The Western Lake Superior Sanitary District (WLSSD) worked directly with Virginia, Minnesota; Marquette, Michigan; Ashland, Wisconsin; and Superior, Wisconsin to develop toxic reduction plans. Project activities included: pollution prevention awareness for wastewater treatment plant managers and operators; a toxic pollution prevention needs survey; facilitating local toxic reduction meetings; developing business-specific pollution prevention opportunities and waste management guidelines; and assisting local communities around Lake Superior to develop toxic reduction plans. The grant included funds for the pilot communities to develop and implement the plans.

Environmental Results/Products:

Pollution Prevention Awareness

WLSSD developed a short presentation for wastewater treatment plant managers and operators on the regulatory need to reduce toxics in Publicly Owned Treatment Works (POTW) discharge, an overview of pollution prevention and its advantages, and examples of successful pollution prevention projects in industry. WLSSD presented this information at local State operator meetings in Marquette, Michigan; Ashland, Wisconsin; and Aurora, Minnesota.

Needs Survey

WLSSD surveyed Lake Superior POTWs to determine what they believed would be most effective in reducing toxics at their source. There is a need for communication about toxics with industrial, business and residential POTW customers. There appears to be a need for POTWs to learn what can and cannot go down the drain and which materials contain toxics of concern for Lake Superior.

Specific Business Opportunities

WLSSD distributed pollution prevention information to pretreatment operators, hospitals, and dentists.

Community Toxic Reduction Plans

Virginia, Minnesota; Marquette, Michigan; Ashland, Wisconsin; and Superior, Wisconsin all took different tacks when developing toxic reduction plans. In Virginia, Minnesota the project was run by the POTW operator, a private consulting firm. In Marquette, Michigan, city employees ran the

program, with consultant support for the final reporting. In Ashland, Wisconsin a partnership was formed between the city, Northland College, businesses, and environmental groups. All of the pilot cities developed public information campaigns.

In **Virginia, Minnesota** on-site assessments were completed at a number of large facilities and other places known to discharge chemicals of concern for Lake Superior. These included a small electric cooperative, a municipally owned steam electric utility, a manufacturer, and a dental practice. The municipality placed information on mercury in the local paper and developed a zero discharge workbook listing businesses and possible toxics that they could likely discharge.

The **Marquette, Michigan** plan included a public awareness campaign which emphasized what residents and businesses could do to eliminate discharge of Lake Superior chemicals of concern. Outreach to a hospital and local businesses centered on reduction of toxic discharges. Marquette developed 11 educational handouts and 12 newspaper ads and a public service announcement which addressed the pollutants of concern for Lake Superior. These materials stress the use of non-polluting alternatives, and provided techniques and instructions for the appropriate disposal of household hazardous waste. Pollutant-specific fact sheets on mercury, lead, copper, silver, formaldehyde, and PCBs were published in local newspapers.

Ashland, Wisconsin produced two reports: Zero Discharge Model Project, Ashland, Wisconsin and Zero Discharge Campus Project, Northland College. With a community- based focus group, the municipality evaluated commercial, industrial and residential sources of the nine chemicals of concern for Lake Superior.

In the **Superior, Wisconsin** toxic reduction plan, data on effluent was examined to determine whether any additional compounds should be focused on. Industry-specific pollution prevention information was sent to targeted industries: photographic industries, dentists, clinics, nursing homes, a university and a technical school. Pollution prevention information was also published in the local newspaper.

Lessons Learned

It is important to educate the local pollution prevention champion at the POTW.

Support from management, the local governing body, and the community early in the process is crucial.

Each community needed to go through the process of deciding which chemicals of concern were a problem for them and thus should be the focus for their pollution prevention efforts.

A professional group or the general public, rather than a specific facility, may be the appropriate target for pollution prevention activities. It is important to develop a strategy with specific pollution prevention activities in cooperation with the targeted group or facility personnel.

GLNPO Project Officer: Danielle Green, 312-886-7594

Title: POLLUTION PREVENTION ASSESSMENTS IN SUPPORT OF THE LAKE SUPERIOR BINATIONAL PROGRAM - TECHNICAL ASSISTANCE TO INDUSTRIES (FY93 - GL995466-01)

Organization: *Wisconsin Department of Natural Resources*

Contact

Phillip (Jack) Annis
Pollution Prevention Specialist
University of Wisconsin, Cooperative Extension
Solid and Hazardous Waste Education Center
161 W. Wisconsin Avenue, Suite 6000
Milwaukee, Wisconsin 53203
Telephone: 414-227-3371
Fax: 414-227-3165
E-mail: pannis@facstaff.wisc.edu

Award Amount: \$57,000
Dollars Leveraged: \$3,000
Project Timetable: 10/01/93 - 09/30/95

Summary: The Solid and Hazardous Waste Education Center (SHWEC) provided pollution prevention information, education and technical assistance to waste generators in the four Wisconsin counties in the Lakes Superior basin. Building awareness among the waste generators about the resources available from SHWEC, the Wisconsin Department of Natural Resources and local resources, and building linkages with municipal operations, primarily Publicly Owned Treatment Works (POTWs) in the Lake Superior basin, were key project objectives. Though the project was designed to target reductions of specific bioaccumulating substances, primarily PCBs and mercury, facilities were approached with the opportunity to reduce all types of wastes.

Environmental Results/Products:

SHWEC inventoried and identified companies discharging directly to the Lake Superior watershed and to the POTWs. SHWEC provided training to POTW pretreatment coordinators on basic pollution prevention concepts with special emphasis on discharges from dentists, photo developers and medical laboratories.

SHWEC completed 15 technical assistance assessments. Many of the targeted businesses were reluctant to invite SHWEC to their facilities. This may have been due to a distrust of government. Local partnerships (e.g., "Green Star" programs in Ashland and Superior, Wisconsin) can help establish the trust that is needed among waste generators, the community, regulators, and technical assistance programs.

SHWEC conducted five workshops for marinas and boat repair facilities, small quantity generators, and the wood finishing industry.

Outreach materials included information on services offered by SHWEC and other resources (including county Community Resource Development Agents) for targeted businesses in the Lake Superior basin in Wisconsin.

Publications developed by SHWEC include:

- Small Business Pollution Prevention Guide
- Conducting an Internal Mercury Audit for Manufacturing Facilities, a 6-page fact sheet;
- The Great Lakes Water Quality Initiative (GLWQI), a 2-page fact sheet;
- Pollution Prevention/Waste Minimization Options for Metal Finishing Processes, Implementing a “Closed Loop” Process, a 5-page fact sheet;
- Lake Superior Business and Industry Assistance Quick Reference List, a 1-page fact sheet;
- Pollution Prevention for Wood Finishing and Manufacturing, an 85-page guidebook; and
- Pollution Prevention for Marinas and Boat Yards, a 35-page guidebook.

GLNPO Project Officer: Danielle Green, 312-886-7594

**Title: INDUSTRIAL WASTE WATER OPERATOR POLLUTION PREVENTION
TRAINING
(FY92 - X995882-01-0)**

Organization: *Michigan Department of Environmental Quality (formerly the Michigan Department of Natural Resources)*

Contact

Robert Jackson, Chief
Grants & Information (SARA Title III) Unit
Pollution Prevention Section
Environmental Assistance Division
Michigan Department of Environmental Quality
P.O. Box 30004
Lansing, Michigan 48909
Telephone: 517-373-2731
Fax: 517-373-3675
E-mail: *jacksorc@state.mi.us*

Award Amount: \$40,000
Dollars Leveraged: \$2,105
Project Timetable: 10/1/92 - 2/15/95

Summary: Michigan has eight major dischargers to Lake Superior: four industrial, and four municipal. This project focused on pollution prevention training for the Wastewater Treatment Plants (WWTP) which treat the waste from these dischargers. Michigan developed pollution prevention training materials specific to the operation of a WWTP and to the pollutants of concern for Lake Superior.

Environmental Results/Products:

Staff conducted training in Lansing and Marquette, Michigan in January 1995. Staff developed the Pollution Prevention Training Manual for Wastewater Treatment Plant Operators which is available on the Internet for downloading. The address is: *<http://www.deq.state.mi.us/ead/potw/>*.

GLNPO Project Officer: Danielle Green 312-886-7594

Title: POLLUTION PREVENTION AND PUBLIC AWARENESS CAMPAIGN FOR LAKES SUPERIOR AND MICHIGAN BASIN (FY92 - X995881-01-0)

Organization: *Minnesota Pollution Control Agency, in partnership with Illinois, Indiana Michigan and Wisconsin State environmental agencies.*

Contact

Ned Brooks
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155
Telephone: 612-297-8680
Fax: 612-297-8676
E-mail: ned.brooks@pca.state.mn.us

Award Amount: \$160,000
(Pollution Prevention Awareness Campaign - \$100,000, Minnesota, Wisconsin Household Hazardous Waste - \$20,000, Very Small Quantity Generator Program Development - \$40,000)
Dollars Leveraged: \$8,000
Project Timetable: 10/1/92 - 9/30/94

Summary: This grant supported a pollution prevention awareness campaign for Lakes Michigan and Superior, household hazardous waste collection between Minnesota and Wisconsin, and a program for management and reduction of waste from very small quantity generators.

Environmental Results/Products:

Pollution Prevention Awareness Campaign

Illinois, Indiana, Michigan, Minnesota, and Wisconsin conducted a unified public awareness campaign that addressed pollution prevention and toxics of concern in the Lake Superior and Lake Michigan drainage basins. Partners in this project included U.S. EPA, State Remedial Action Plan coordinators, the Lake Superior Bi-National Work Group Communication Team, and the Lake Michigan Lakewide Management Plan team.

The partners produced two outreach pieces: Protecting Our Great Lakes, a pollution prevention public awareness campaign for individuals in the Lake Superior and Michigan basins, and a Disposal Guide to Household Hazardous Wastes, detailing responsible ways to dispose of various products commonly found in homes and garages. The disposal guide can be found at: <http://www.epa.gov/glnpo/p2/Lkwatchc.html> on the Internet.

Minnesota- Wisconsin Household Hazardous Waste

Through funding under this grant, Wisconsin residents were able to deliver household hazardous waste to the permanent household hazardous waste education and collection center in Duluth, Minnesota.

Very Small Quantity Generator Program Development

There are approximately 2,000 conditionally exempt or very small quantity generators (VSQGs) of hazardous waste in the Minnesota portion of the Lake Superior basin. These generators have few options for properly disposing of their waste and need information and assistance to begin preventing pollution. With funds from this grant, the Western Lake Superior Sanitary District (WLSSD) developed a program for VSQGs in Minnesota and Wisconsin for management and reduction of waste. In addition

to collecting already generated hazardous wastes, Minnesota assisted participating VSQGs in identifying opportunities and resources for pollution prevention with an emphasis on toxics of concern for Lake Superior.

GLNPO Project Officer: Danielle Green 312-886-7594

**LIST OF PROJECTS FUNDED BY THE GREAT LAKES NATIONAL PROGRAM
OFFICE IN FY 1997**

Council of Great Lakes Industry <i>Mobilizing/Coordinating Industry Support of the Virtual Elimination Strategy</i>	\$70,000
Great Lakes United <i>Virtual Elimination Strategy Implementation Project</i>	\$70,000
Illinois Environmental Protection Agency <i>Reducing Mercury Releases Through Pollution Prevention in Healthcare Facilities</i>	\$82,800
Indiana Department of Agriculture <i>Clean Sweeps</i>	\$30,000
Menominee Indian Tribe of Wisconsin <i>Household Hazardous Waste Cleansweep</i>	\$12,000
Michigan Department of Agriculture <i>Clean Sweeps</i>	\$60,000
Michigan Department of Environmental Quality <i>Mercury Pollution Prevention Project</i>	\$100,000
National Wildlife Federation <i>Non-governmental Organization Involvement in Implementating Virtual Elimination</i>	\$70,000
Pennsylvania Department of Environmental Protection <i>A Partnership for Prevention (Mercury)</i>	\$75,000
Wisconsin Department of Natural Resources <i>Pollution Prevention Specialist</i>	\$18,400

THE GREAT LAKES NATIONAL PROGRAM OFFICE'S FUNDING GUIDANCE AND GRANT PROCESS

Each Fall, the Great Lakes National Program Office (GLNPO) issues its Great Lakes Funding Guidance which asks interested Applicants to submit short Preproposals for Great Lakes projects. Following internal screening, reviewers internal and external to U.S. EPA evaluate the remaining Preproposals based on criteria in the Great Lakes Funding Guidance. Evaluations are based on the Funding Guidance criteria and take into account recommendations on specific needs and priorities of geographic areas within the Great Lakes, particularly those of Lakewide Management Plans and their included geographic initiatives (such as the Remedial Action Plans for Areas of Concern). Each preproposal is generally evaluated by at least 3 GLNPO staff in addition to the external reviewers. GLNPO uses these evaluations to determine the projects for which full proposals will be requested. Applicants are then requested to submit full proposals. Following negotiations, full proposals are submitted, final decisions are made, and awards are tendered. Awards can be issued as early as April; however, most are issued in August and September.