

LINK



The Newsletter of the Great Lakes Regional Pollution Prevention Roundtable (GLRPPR)

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A Note from the Executive Director

GLRPPR Winter 2003 Meeting Recap

The Great Lakes Regional Pollution Prevention Roundtable (GLRPPR) conference was held September 23rd and 24th in Columbus, Ohio. The event was hosted at the Westin Hotel situated in the southern portion of the downtown business district of Columbus.

On September 22nd the Ohio State Environmental Network (OSEN) met to hold

their quarterly meeting. Immediately following the OSEN meeting, the GLRPPR steering committee met. The committee meets face to face one to two times a year in conjunction with the roundtable conferences and meetings. Following the meeting, friends and steering committee members joined together to enjoy dinner at a local restaurant called Schmidt's Restaurant und Sausage Haus in the historic German Village. The cream puffs were as big as a softball and delicious!

Approximately 65 people from the Great Lakes region gathered in Columbus for the event. The majority of individuals in attendance were from the state of Ohio; however Illinois, Indiana, Michigan, New York, Ontario, and Wisconsin were represented as well. A diverse group of organizations were also represented including federal, state, and local governments; NIST MEP's; universities; trade organizations; NGO's; manufacturers; and private consultants.

Ohio State Senator Teresa Fedor, named the 2002 Legislator of the year by the Ohio Environmental Council, welcomed guests to Columbus and the Roundtable conference. Ms. Fedor is a former Toledo Public Schools elementary teacher. She serves on the Energy and Environment Committee in the Ohio Senate and through this committee she was instrumental in drafting guidelines for the Clean Ohio Fund, a blueprint for local governments to restore brownfields for the development of greenspace, farmland preservation, trails and stream protection. In her comments to the audience, Ms. Fedor asked us all to "stretch" ourselves to achieve just a little bit more to benefit the environment.

Mr. Dane Espenschied, Vice President of Honda of America and plant manager of the Marysville Motorcycle Plant (a.k.a. "the big bike plant"), where the Honda

Gold Wing motorcycle is built, addressed the audience to explain Honda's lean manufacturing philosophies, which include the implementation of an environmental management plan, and "living" the philosophy of change. Mr. Espenschied provided real-life examples of how a large manufacturing plant has engaged front line to corporate employees to help improve the environmental and manufacturing performance of this plant. As an example, an assembly-line employee suggested that the bags that parts are shipped in should be recycled. A surplus compactor was re-located to the appropriate area of the motorcycling facility. As a result of this small change, the plant was able to save thousands of dollars in disposal costs and recycle thousands of pounds of plastic each month that would otherwise have been placed in a landfill.

Tom Tillman, Deputy Director of U.S. EPA's Pollution Prevention Division joined us to provide an update on the administration and goals within the division. Specifically, Tom addressed EPA's goal to collect P2 measurement data from the states who receive P2 grant funding. Jean Waters, the Pollution Prevention Resource Exchange (P2Rx) Program Manager, presented an update on the partnership that P2Rx has formed with U.S. EPA and National Pollution Prevention Roundtable (NPPR) to coordinate P2 measurement data from the states so that it can be agglomerated into a single report that EPA can then submit to Congress. Jean also talked about some of the national services provided through GLRPPR, such as the Topic Hubs and the regional contacts database.

Other sessions featured pollution prevention in the Department of Defense, such as alternative aircraft deicing processes and deicing chemicals, as well as aircraft construction and maintenance. Sessions on energy efficiency, and green buildings initiatives were also featured.

Several examples of how the assistance process has helped companies and the community were illustrated at this conference. Mr. Bill Wojcik from NuBlend Paints Company, talked about their comprehensive latex paint recycling and job training organization. Examples of P2 in water were presented including a study to reduce water usage at a turkey processing plant.

Steve Brachman from the Solid and Hazardous Waste Education Center (SHWEC) and Mark Stone from the Naval Dental Research Institute (NDRI) presented an excellent example of some of the benefits that GLRPPR provides. Steve presented a summary of the dental mercury reduction program that he has been involved in along with professionals from the Wisconsin DNR, the City of Milwaukee, and Mark Stone from NDRI. Mark and Steve connected by attending previous GLRPPR programs. As a result, Mark and Steve collaborated on their individual project work plans and found that there was significant overlap. Upon this discovery, they decided to redirect their projects. They re-wrote their individual

work plans for federal grant funding proposals so that they complimented one another's work. This collaboration helped both leverage the money to accomplish more research, conduct outreach to dental facilities, and create a short video DVD (shown at the conference) demonstrating a dental amalgam recycling program.

We finished the program by featuring presentations that focused on pollution prevention in transportation. Sam Spofforth from Clean Cities of Central Ohio explained some of the alternative fuel research taking place in Ohio and the expansion of renewable fuel sources. Jeff Gearhart spoke about a new program beginning in the Great Lakes Region that focuses on working with auto repair and tire retailers to replace lead wheel weights used for tire balancing with alternative products that do not bioaccumulate in the environment.

At the breaks, attendees were privileged to view the Honda Civic sedan, which is powered by natural gas and is now available for purchase in the general market. International Truck and Engine Company showcased a Ford F250 pickup equipped with International's clean burning diesel engine. In addition, various displays and student posters were presented.

The closing highlight of the conference was the unique opportunity to tour the Honda Gold Wing Motorcycle manufacturing plant in Marysville, Ohio. A small bus, powered by natural gas, transported GLRPPR members to the plant where members had the opportunity to see Honda's new water-based primer and base coat paint lines and to witness their environmental management system in action.

A special thank you goes out to the Ohio conference planning committee. This meeting would not have been so informative, with great topics and speakers, without their hard work and dedication.

Debra Jacobson, GLRPPR Executive Director

Ohio Conference Planning Committee

Co-Chair: Mary Beth Holley - Techsolve

Co-Chair: Tim McDaniel - International Truck & Engine Corporation

Larry Boyd - Energy Industries of Ohio

John Greenway - Ohio Dept. of Development

Roger Hannahs - OH EPA

Sherry Hubbard - OH Dept. of Development

Melanie Kintner - Cleveland Green Building Coalition

Dr. Ashok Kumar - University of Toledo

Bill LaFountain - WPAFB

Rick Mazur - EISC

Ellen Miller - OH EPA

Diane Shew - Assoc. of OH Recyclers

Howard Tibbs - Ohio Dept. of Development

Greg Vergamini - OH Manufacturers Assoc.

Featured Articles

Abbott Tests Hybrid Vehicles

Founded in 1888 by Dr. Wallace Calvin Abbott, a Chicago physician, Abbott Laboratories is a global, broad-based health care company devoted to discovery, development, manufacture, and marketing of pharmaceutical and medical products, including nutritionals, devices, and diagnostics. The north suburban Chicago-based company employs more than 55,000 people and markets its products in more than 130 countries.

“Driven” by advances in technology and increased choices for hybrid electric/gas powered cars, Abbott Laboratories is seriously evaluating how these vehicles perform under real world conditions. In mid-2004, the 2004 Toyota Prius, a hybrid electric-gas vehicle (HEV), was introduced to the commercial sales and service organization nationwide as a pilot study of HEVs. Commercial personnel located throughout the country that volunteered for this opportunity drive the 16 Toyota Prius vehicles included in the pilot program.

Throughout the course of the three-year lease period, the vehicles will be evaluated on numerous parameters including, gas mileage, routine and demand maintenance, overall handling, road noise, ventilation systems, safety, space/capacity, and comfort. The increased fuel efficiency of the Prius as compared to other vehicles in the Abbott fleet of company vehicles is estimated to be a savings of over 7,600 gallons of fuel per year for all 16 vehicles in the study, with a correlated reduction in greenhouse gas emissions. This fuel efficiency relates to an estimated cost savings of over \$13,500 per year. Pending acceptable findings from this study, the implementation of HEVs may be expanded.

The lease agreement for the 2004 Toyota Prius is an innovative project that provides commercial representatives with an environmentally friendly option with which to perform their job functions, a reduction in emissions of greenhouse gases into the environment, as well as in fuel used, and a substantial cost-savings to Abbott. The introduction of the Toyota Prius to Abbott’s commercial sales and service representatives has received national attention on the CBS Evening News with Dan Rather (March 30, 2004) and the CBS Early Show (March 31, 2004).

For more information on the Abbott Laboratories Toyota Prius pilot study, call (847) 938-5494 or go to www.abbott.com.

Unique Minnesota Program Launches Emission-Reduction Efforts

by Colleen Coyne

Diesel retrofits were practically unknown in Minnesota

just a few years ago. Businesses located in a state that’s been well within the margins of ozone attainment had little incentive to embrace voluntary air quality projects.

But recently things have changed. A regional trend toward rising ozone levels and growing concerns about the health effects of particulate matter prompted the creation of a new program called Clean Air Minnesota (CAM).

CAM is a voluntary partnership of businesses, environmental groups, government agencies, citizens and other organizations working together to achieve significant, measurable reductions in air pollution. CAM is a program of the nonprofit Minnesota Environmental Initiative and is co-chaired by the Minnesota Chamber of Commerce and the Minnesota Center for Environmental Advocacy. The program has more than 50 partners that have all agreed to implement emission-reduction strategies in their organizations.

CAM is, to our knowledge, the only program nationwide that has initiated broad-based air quality improvement efforts before the state faces federal non-attainment designation. The program has been exceedingly effective in its early work. In its first two years, the program and its partners achieved emission reductions, expanded its partnership base and established project teams working on sector-based emission reductions. Permanent emission reductions through improvements at partner’s facilities, public outreach, and lawnmower and gas can exchanges have achieved a significant reduction in air pollutants.

The program focuses on building partnerships with a wide base of public and private organizations to carry out projects with quantifiable emissions benefits. Since about 50 percent of the state’s air pollution comes from on- and off-road vehicles, these projects naturally include a focus on diesel retrofits, fleet evaluation and driver education.

In its first major mobile source project, CAM and its partners will demonstrate the use of diesel retrofit technology and fuels as a way to reduce emissions of ozone precursors, fine particulate matter and air toxics. The project is designed to garner maximum public and private sector attention, gain partners and generate interest in replicating this effort with diesel fleets - both on- and off-road. The retrofit projects are likely to involve the use of diesel oxidation catalysts and crankcase ventilation filters.

In the second mobile source project, CAM and its partners will obtain voluntary participation by major Twin Cities’ area private- or government-managed fleet operators to evaluate their current operations. We will then develop materials for a Fleet Emission Reductions Toolkit, which will outline strategies companies can implement based upon topics such as anti-idling and clean fuel/clean vehicles programs.

“We’ve seen an incredible amount of enthusiasm for diesel retrofits,” says Clean Air Minnesota Program Director Bill Droessler. “Companies want to be part of the solution to the pollution problem and help the region stay out of ozone non-attainment.”

As emission-reduction projects like these become more prevalent, CAM believes that other Minnesota companies will choose to participate.

Michigan Clean Marinas Program Begins

The Michigan Clean Marinas program officially began with the signing of a Memorandum of Understanding between the Michigan Boating Industries Association (MBIA), Michigan Sea Grant College, and the Department of Environmental Quality (DEQ). In support of the program, the Environmental Sciences and Services Division (ESSD) of DEQ has received a grant from Coastal Zone Management to complete a guidebook on marinas best management practices. This program was initiated to preserve and protect, through voluntary efforts, Michigan’s greatest resource, the Great Lakes and their connecting waterways. Michigan has more than 1,406 public access sites, 750 marinas, 680 marine dealers, 41 boat manufacturers, 85 Great Lakes recreational harbors, and 1.2 million registered boaters.

The purpose of this program is to form a partnership between the Michigan Boating Industry and the DEQ. The program seeks to educate and provide technical assistance to the marina industry and the recreational boating community regarding methods to minimize waste, enact best management practices, practice pollution prevention, and develop an outreach network for environmental education to the more than one million registered boaters.

The program consists of enlisting individual marinas and marine related businesses to join the partnership in order to receive the aforementioned information. The program also includes a certification component which would allow participants to achieve public recognition through environmental excellence. This would be achieved through a self-assessment process where the facility would successfully complete a minimum set of required components. The designation includes recognition on the Clean Marina Web site, official press releases, and a certificate of accomplishment. The designation will also allow facilities the use of the MI Clean Marina logo on their letterhead, flags, and signage. The partnership was officially kicked off at the 2003 MI Recreational Boating Conference in December. As of September 30, 2004, approximately 40 marinas have made commitments to the program either through a signed pledge statement or by attending a Clean Marina workshop which has formalized their commitment to practice environmental stewardship.

Ontario Marina Reaches Elusive Five Green Leaf Anchor Rating

The Ontario Marine Operators Association (OMOA) is excited to announce that LaSalle Park Marina, located in Burlington, Ontario, is the first facility to reach the highest possible Clean Marine Eco-Rating since the program officially began in January 2001.

The OMOA Clean Marine Eco-Rating is managed by Terra Choice Environmental Services, an independent environmental management company licensed by Environment Canada. Environmental audit results are tabulated and facilities are scored with from one to five Green Leaf Anchors. A report is issued, and along with the continuous quality improvement prescribed in the Clean Marine Operations Handbook, each subsequent audit will result in improved performance. Terra Choice also approves EcoLogo products, something all boaters and cottagers are encouraged to use around the water.

“This is absolutely wonderful!” said Manager for LaSalle Park Marina, John Hanson, “We are very proud of our environmental practices and policies being recognized with the Clean Marine Green Leaf leadership rating of Five Green Leaf Anchors.” “This is an honor in more ways than one,” said Mr. Hanson, “It acknowledges all the efforts made by our board of directors, members, and all of our boaters and we have the credibility of it being third party verified. It is so reassuring to know that we really are making a difference and doing our part to ensure that there are clean, safe waterways for the community and all to enjoy now and in the future.”

The OMOA Clean Marine flag proudly flies at the marina entrance as a visible symbol to members, visitors, and the public that the boaters at LaSalle Park Marina are committed to their appreciation and relationship to the waters, shoreline, and habitat along the protected north shore of Burlington Bay.

The elusive 5-anchor Eco-Rating Certificate was presented at the official opening of the boating season celebration of the Burlington Bay Sailing and Boating Club at LaSalle Park Marina on Saturday, June 5th, 2004. Bob Eaton, OMOA Director of Environmental Services and Dave Bugden of Terra Choice made the presentation.

“To put the enormity of this accomplishment into the proper perspective,” commented Eaton, “There are now 160 marinas and yacht clubs in Ontario in the Clean Marine Eco-Rating Program and LaSalle Park is the first and only one to date, to reach the highest rating. To reach this goal, the facility is 93% compliant with audit documentation,” he adds.

The program is financially supported by a grant from the Ontario Trillium Foundation, with additional funding coming from Environment Canada, Ontario Ministry of Environment, and the OMOA.

Thirty additional facilities are now scheduled to join the program in 2004, bringing the total to 190 and within reach of the target for 2004 of 200.

For further information contact:

Bob Eaton, Director, Environmental Services, 705-326-9359, Fax: 705-326-3827, robert.eaton@sympatico.ca or visit www.marinasontario.com

Or: John Hanson, Manager, LaSalle Park Marina, 905-633-9483, jhanson@allstream.net.

Truck Drivers Learn How to Prevent Pollution by Kady Cowan

The Truckers Idling Reduction Program, funded by Eco-Action, Environment Canada's Community Funding Program, targets truckers crossing the Canada-U.S. Border in Sarnia, Ontario. Due to the high volume of truck traffic in border communities, heavy-duty trucks are significant contributors to green house gas (GHG) and poor air quality in communities like Sarnia. Buy-in from the drivers themselves and trucking fleet operators is essential to begin to address the environmental issues.

Breaking habits is difficult. It is even more difficult to do when you don't have alternatives. The Truckers Idling Reduction Program is designed to promote idling alternatives to drivers who are ready to change their behavior.

The central component of the program is an outreach campaign.

This summer the project coordinator spent 30 days talking to drivers about fuel consumption, greenhouse gases, air quality, and technological fixes that reduce idling time.



Kady Cowan of C2P2 showing idling reduction literature for truckers

What most drivers are not aware of is that reducing idling time by even one hour a day for an entire year saves over \$1000 CND in fuel and prevents 5 tons of GHG, 1 kg of particulate matter, and 51 kg of nitrogen oxides (NOx) from being released to the atmosphere. It is estimated that the 3 million heavy-duty vehicles in the United States collectively idle away one billion gallons of diesel every year.

Many of the drivers who pay for their own fuel are well aware of their idling times and have made valiant efforts

to keep the engine off when not in motion. However this becomes difficult when drivers are in extreme temperature environments and need climate control in their sleeper to get a good night's rest. Some have found that a good sleeping bag does the trick through the winter. But just about every driver agrees that cab temperatures, which can be 5 to 10 degrees Celsius higher than the ambient air, drivers can not be endured without air conditioning when the temperatures start to climb in places like Florida, Texas, and even Ontario in the summer.

Various anti-idling devices can remedy climate control problems. The all-purpose heating, cooling, and electricity generating Auxiliary Power Unit (APU) is a top-of-the-line choice for drivers. The system is powered by a diesel engine of its own, but consumes only a fraction of the fuel necessary to power the main engine. The price is still prohibitive for many drivers and companies at \$7500 CND uninstalled. However, drivers that traditionally idle every night will find that the unit pays for itself in less than three years from diesel savings alone.

Alternatively there are bunk heaters. These products have been on the market for decades in Europe and are now making advances in North America. Although the heater clearly only provides heat, it is a great first step to reduce idling in cold weather. The heaters are priced between \$1000-\$3000 CND. The FleetSmart Program at Natural Resources Canada's Office of Energy Efficiency rebates drivers 19% of the purchase price on both heaters and APUs. This incentive makes these technological options much more attractive, and more importantly, attainable for independent owner/operators and company fleets. For more information, visit their Web site at: <http://oe.nrcan.gc.ca/fleetsmart/home.cfm>.

In the six-week outreach campaign, 1500 drivers have been approached, which is a small number considering that close to 3,000 trucks travel westward through Sarnia daily enroute to the United States. It is likely that those drivers will speak with other drivers and fleet managers, who will recognize the long-term fuel and emissions saving that can be easily achieved by idling reduction efforts. To help make this point even more clearly, the Truckers Idling Reduction Program case study will test the use of a Rigmaster APU and Webasto bunk heater in short-duration idling settings, such as waiting to cross the border or waiting to load or unload. This data will be extremely helpful in developing educational material for the trucking community on fuel savings and reduced pollutant loadings.

Although the outreach campaign ended in September 2004, fourteen permanent signs reminding drivers to turn off their engines have been put up at the Sarnia weigh scales and at the Blue Water Bridge. It is difficult to measure behavioral change, especially in the short term. It is difficult to know how many more drivers will install an anti-idling device as a result of the

outreach campaign. We do know that truck drivers, like everyone else, need to play their part in protecting the environment, and at least 1500 more now know how they can do that.

For more information contact the project coordinator, Kady Cowan, at kady@c2p2online.com or 519-337-3236.

OSU's Soy Biodiesel Pilot Program

The Ohio State University's Transportation and Parking Services unveiled the first soy biodiesel-fueled Campus Area Bus Service (CABS) transit coach this past autumn quarter. It was the beginning of a year-long pilot program to incorporate soy biodiesel into university transportation services.

CABS plans to use B20 (a blend of 80 percent diesel fuel and 20 percent soybean oil) in 20 percent of its fleet. Two other university service departments have also agreed to pilot the B20 fuel in their trucks and equipment. The decision to begin using soy biodiesel builds on Transportation and Parking Services' commitment to the university's Academic Plan by partnering university services with academics. For example, the use of the fuel on campus will facilitate learning and research opportunities in the College of Food, Agricultural, and Environmental Sciences and the Center for Automotive Research.

Soy biodiesel is a cleaner burning alternative to traditional petroleum diesel. It is made from renewable resources, such as soybean oil and animal fats, thus reducing the dependence on limited oil resources. The B20 blend doesn't require modifications to conventional diesel engines and provides the same payload capacity as traditional diesel. The B20 blend will reduce carbon dioxide vehicle emissions by 15 percent, and will also reduce carbon monoxide, particulate and sulfur dioxide emissions. CABS buses are expected to use about 42,000 gallons of B20 during the pilot project.

For more information, contact Robert Summerfield at summerfield.3@osu.edu or 614-292 7420.

Cincinnati's School Bus Clean Diesel Retrofit Program

The Hamilton County Department of Environmental Services Air Quality Management Division recently received a \$95,000 grant from the U.S. Environmental Protection Agency to retrofit 20 school buses with clean exhaust technology and to fuel 74 buses with biodiesel, a cleaner burning alternative fuel. Local matching funds bring the project total to \$120,000.

The overall objectives for this project are to:

- Reduce school children's exposure to diesel

exhaust emissions created by diesel-powered school buses;

- Retrofit 20 school buses with oxidation catalysts operating in the urban Cincinnati Area, including two environmental justice areas;
- Showcase the school bus retrofit program to the public and other school districts;
- Incorporate an anti-idling policy for the entire fleet of school buses operating under contract with the Cincinnati Public School system encompassing 300 school buses, 120 mini buses, and 110 Metro buses;
- Demonstrate the viability of using biodiesel (B20) as an alternative clean burning fuel in school buses with no trade-offs in performance or maintenance; and
- Demonstrate to industrial representatives that school bus retrofit programs are viable options for Supplemental Environmental Project (SEP) funds from enforcement settlements.

For more information about this program, visit the Hamilton County Department of Environmental Services Web site at

www.hcdoes.org/airquality/vehicles/Grant.htm.

For more information regarding U.S. Environmental Protection Agency's Clean School Bus USA program, visit www.epa.gov/cleanschoolbus/.

Coming Soon...Winter 2005 Edition

The Winter 2005 Edition of the LINK newsletter will focus on sustainable design. The LINK Fall 2005 article solicitation will be sent to GLRPPR members via e-mail on or about December 1, 2004; articles will be due January 3. Send article ideas or questions to Wayne Duke at wduke@wmrc.uiuc.edu.

Items of Interest

Equipment Gives Students an Environmental Lesson

Students at Mahomet-Seymour High School (MSHS) in Illinois are learning an environmental lesson that should reap benefits for years to come.

The Illinois Waste Management and Research Center (WMRC), a division of the Illinois Department of Natural Resources, has developed a water-based parts washer called the "Grease Gator" in its Champaign, Illinois labs. MSHS shop classes are using the "Grease Gator" to clean parts in its shop classes. Use of the parts washer is being donated by Solvent Systems, Inc. of Lake Bluff, IL.

The "Grease Gator" is more efficient and environmentally friendly than the washer that it replaced. It is equipped

with a special separator device that diverts the oil that is cleaned off the parts into a collection reservoir. The collected oil is easily removed and taken to a local farmer who uses it for heating purposes.



Sean Bruce, a sophomore at MSHS, is one of the students who used the water based parts washer that Illinois Waste Management & Research Center developed and is now being used in the school.

The chemicals in the old washer irritated student's skin, and the washer produced an irritating smell as well, according to Lindi Kocher, Agriculture Instructor at MSHS. The students have been impressed with how well the new washer works. And it has let students see that there are environmentally friendly ways to do a job.

Kocher said that MSHS students will take this knowledge to their future jobs and will help those businesses find ways to prevent pollution and recycle materials. This can only help companies and the environment in future years.

This future benefit is what Solvent Systems had in mind when it donated the parts washer. Steve Rundell, company president, said sometimes industry is slow to implement change as major as this new parts washing system.

"Our approach was to give it to the next generation and show them how well it works," said Rundell.

Kocher said the "Grease Gator" has had the added benefit of getting students involved in good discussions of the environment. Students have been thinking about where waste products go after they are used and has lead students into other efforts to recycle products at the school.

Kocher is convinced that the new washer also will save money for the school because it operates more efficiently and does not have to be pumped out and refilled the way the old system did. The new washer also is on a timer so it only operates during the hours when students would need it.

Rundell said once students or businesses get to use the parts washer developed by WMRC and Solvent Systems they are impressed. The company has been letting industry use the system on a four-week trial basis and the response been tremendous. Solvent Systems now has orders for the system from several major corporations and the government.

"These students will be among those who will show the immense potential of this system in management of chemicals," said Rundell. "It has stopped the use of

certain hazardous chemicals in the process of cleaning parts."

Compliance Assistance Advisory Council Presents Final Report to USEPA Administrator

The Compliance Assistance Advisory Council (CAAC) was established under the National Advisory Council for Environmental Policy and Technology (NACEPT) in 2000 to provide recommendations to the United States Environmental Protection Agency (USEPA) on compliance assistance and its use and benefit in protecting the environment. Its final report "Maximizing Compliance Assistance: Recommendations for Enhancing Compliance Assistance Opportunities at EPA and Through Other Providers," was submitted to Administrator Whitman in August 2001.

In 2002, the second CAAC made up of various state, federal, tribal, local governments, trade associations, and community-based assistance providers began building on their work to produce further recommendations and insight to USEPA regarding compliance assistance. The second report entitled, "Recommendations for Enhancing EPA's Compliance Assistance Program," published in June 2004, was recently presented to Administrator Leavitt and focuses on the implementation aspects of three areas critical to compliance assistance: (1) integration of compliance assistance into the Agency's mission, goals, and activities; (2) development of parameters which will successfully measure the results of compliance assistance activities; and (3) optimization of the compliance assistance network across EPA and other environmental assistance providers.

Illinois members of the CAAC include: Annette Fulgenzi of the Illinois Small Business Environmental Assistance Program, Abigail Jarka of the Delta Institute, James Mallory of the Non-Ferrous Founder's Society, and co-chair Richard Sustich of the National Science Foundation Center of Advanced Materials for Purification of Water with Systems (formerly of the Metropolitan Water Reclamation District of Greater Chicago.)

For a copy of the report, contact the Illinois Small Business Environmental Assistance Helpline of the Department of Commerce & Economic Opportunity at 800-252-3998.

Green Roof Monitoring at Michigan State University

by Angie Durhman

Green roofs, also called eco-roofs or vegetative roofs, are quickly taking shape in America as an option in urban environmental sustainability. Although the technology has been in use around Europe for decades, the U.S. has only recently begun to capitalize on the concept.

The Green Roof Research Program at Michigan State University (MSU) has been researching green roof performance since 2000, and is implementing additional studies to further monitor green roof performance on a newly installed vegetated roof (3500 ft²) on the Plant and Soil Sciences Building on campus. The extensive green roof allows us to be the first in Michigan's public university system to establish studies comparing roofing surfaces on an existing building.

This living roof serves multiple functions. First, instrumentation compares vegetated and existing gravel surfaces. Real-time data shows current weather conditions. Monitoring equipment is installed at various locations throughout the vegetated and gravel ballast sections, and the ambient air. We are recording heat flux (heat transfer in and out of the building), soil moisture, relative humidity, and temperatures. Plant establishment, rate of coverage, and over-wintering successes will also be evaluated for novel green roof plant species. Additionally, the roof is a hands-on tool for graduate and undergraduate students interested in learning about installations, monitoring, and maintenance related to green roofs. Its location also creates an excellent demonstration roof. While visiting the surrounding gardens, or taking a lunch break, the general public can observe the green roof from the 2nd floor viewing room and south-facing windows of the 2nd to 5th floors.



Photo courtesy of Angie Durhman. PSSB green roof on August 28, 2004 equipped with monitoring instrumentation. Cement pavers separate the gravel ballast from the vegetated section.

As with many cities, the MSU community is concerned with storm water runoff and energy conservation of its buildings. Data collected from the MSU PSSB green roof project will be used in decision making for the MSU Campus Master Plan. Hopefully, vegetated roofs will be a feasible option for new and retrofit construction.

As people see varying colors of reds, whites, and yellows they question why it is termed green. "Green" also applies to sustainable design concepts, not just the color of planting material. However, the living roof will adapt with the changing growing season, just as in nature. We are growing ten species of Sedum (low growing perennial succulents). In late summer, dried flower stalks are visible, seedlings are emerging in bare spots, and red foliage is prominent on some species. We installed the pre-vegetated mats on May 21, 2004, which resulted in an "instant green roof." Please see the links below for further information.

The MSU Green Roof Research Program (<http://www.hrt.msu.edu/greenroof/>) is an ongoing collaboration

between the Departments of Horticulture, Crop and Soil Sciences, Plant Biology, Climatology, Mechanical Engineering, and Agricultural Engineering. Green roof materials for this project were donated by XeroflorAmerica, LLC (<http://www.xeroflora.com/>) and additional funding was supported by the Michigan State University Office of the Vice President of Finance and Operations.

Newslinks relevant to the PSSB installation:

<http://special.newsroom.msu.edu/greenroof/> (contains a link to a video clip)

http://www.lsj.com/news/local/040528_roof_1b-2b.html

<http://www.statenews.com/article.phtml?pk=24213>

<http://www.greenroofs.com/test.htm#MSU%20PSSB>.

Michigan Department of Environmental Quality's Green District Office

On June 9, 2004, the Michigan Department of Environmental Quality held a groundbreaking event for its new Southeast Michigan District Office in Warren.

The Department took the opportunity to lead by example with Michigan's first "green" state office building. The groundbreaking was held in cooperation with the developer, Murray Wikol of Twin Oaks Network Inc.



of Bloomfield Hills and the Cunningham-Limp group. Attendees also included representatives from the Governor's office.

Being a green building, the District Office will be more environmentally friendly in terms of site selection and building material, and use less energy once in operation. This will mean a cost savings for the state not only today, but in future tight budget times, along with an overall reduction in pollution.

This "green" building is required to achieve the US Green Building Council LEED (Leadership in Energy and Environmental Design) basic certification. However, all parties involved are working to achieve the higher gold certification. When the benefits of this building become known, it is hoped this will be the first of many green state office buildings in Michigan.

The building, being erected on the old Warren Tank brownfield site, will reduce overall potable water usage by 20%, reduce energy usage by 35%, as well as require recycling of 50% of all construction materials. The design also uses more natural day lighting, storm water for irrigation rather than potable water, renewable

energy on-site, sustainable wood sources, regionally manufactured materials, and low-emitting materials like paints, glues, carpets, etc., to reduce building toxics. Using less toxics translates into a safer building for employees and the public by resulting in fewer allergy reactions and building-related sicknesses. Employees in green buildings are generally healthier and happier and therefore less absent and more productive.

City-wide Inventories Used to Prevent Industrial Wastewater Discharges

The Minnesota Technical Assistance Program (MnTAP), under a grant from The McKnight Foundation, is using city-wide industrial inventories to reduce phosphorus and other pollutants from industrial dischargers in the Upper Mississippi River basin. Working with publicly owned treatment works (POTWs), MnTAP is inventorying industrial phosphorus sources, identifying pollution prevention opportunities for industrial users, assisting industries with implementation of pollution prevention techniques, and documenting results.

Outreach to approximately 50 cities in the Upper Mississippi River Basin, including seven priority cities, has been conducted through information dissemination and presentations. MnTAP has met with POTWs of these cities to view phosphorus-monitoring data, discuss the need to meet a phosphorus limit, and develop a phosphorus management plan (PMP). During the past year, MnTAP staff has responded to over 70 calls or emails from cities. MnTAP has made 25 site visits to POTWs in the first year and has been in contact with over 30 industries in the Upper Mississippi Basin to provide assistance.

MnTAP is partnering with cities, the Minnesota Pollution Control Agency (MPCA), and the Minnesota Wastewater Operators Association (MWOA). To have a copy of the interim grant report emailed to you, contact Cindy McComas at 612-624-4678 or mccom003@tc.umn.edu.

MnTAP Intern Program Wins MVP2 Award

The MnTAP Student Intern Program received one of the National Pollution Prevention Roundtable's (NPPR) 8th Annual Most Valuable Pollution Prevention (MVP2) awards for its work over the past 20 years, assisting companies with waste reduction and pollution prevention (P2). Beginning in 1985, MnTAP implemented a program that not only educates students about P2 approaches; it allows companies to benefit from reduced waste and cost savings as well. The projects afford MnTAP the ability to learn about new P2 technical practices they can share with other companies. Interns work full-time at the company for three months during the summer being supervised by MnTAP and a company staff person. Over the course of the past 20 years, the program has employed approximately 118 interns, resulting in seven million pounds of waste and 109 million gallons of

water conserved. MnTAP documented company savings at \$4.6 million, resulting in a return on investment of \$7 for every dollar spent on the intern program by the companies.

See mntap.umn.edu/intern for information on the program.

Indiana up for the Challenge!

On April 24, 1998, the 1998 Governor's Toxics Reduction Challenge was announced as a means to accomplish three specific goals to reduce toxic chemical releases to Indiana's air and water. Through the Challenge, Indiana manufacturers and businesses were asked to volunteer to "energetically support the state's goal to reduce toxic chemical releases to air and water using 1995 Toxic Release Inventory (TRI) data as the baseline." The Governor offered special recognition to those that met the Challenge. A final report on the results of the Challenge was made available September 20th during Pollution Prevention Week celebrations.

Throughout Indiana, there have been 71 companies with 89 facilities accepting the Challenge and pledging to work in good faith to help meet the state goals. Those taking the Challenge included large and small manufacturers, Department of Defense facilities, academia, non-profits, utilities, and service organizations.

Participants took the Challenge by submitting a letter to the Indiana Department of Environmental Management (IDEM) and committing to report annually on their efforts to support the state's goals. Some examples of participants' efforts were:

- Eliminating methylene chloride in parts-cleaning operations;
- Instituting mercury recycling programs;
- Eliminating mercury pressure switches on process lines; and
- Lowering styrene emissions through efficiencies, which also required less resin and lower VOC-producing gelcoat products.

Indiana facilities generating toxic chemicals were challenged to voluntarily reduce toxic chemical releases to the air and water from 1995 levels by:

1. 50 percent by December 31, 2000 in large urban areas of carcinogens and persistent bioaccumulative toxic (PBT) chemicals;
2. 60 percent by December 31, 2002 statewide for these chemicals; and,
3. 50 percent by December 31, 2002 statewide for all toxic chemicals reported in the Toxic Release Inventory (TRI).

Each participant was also asked to energetically help the state reach these goals through efforts emphasizing pollution prevention within their organization.

The Governor's Toxic Reduction Challenge has shown significant reductions of toxic chemicals in Indiana, including large reductions in carcinogenic and PBT chemicals. These reductions include a 52 percent reduction of toxic chemical releases to the air and water statewide and a 54% reduction of carcinogenic and PBT chemicals statewide between 1995 and 2002.

See the Governor's Toxic Reduction Challenge final report: www.in.gov/idem/oppta/p2/toxicchallenge/.

Pollution Prevention Week in Indiana

Some Indiana businesses have already discovered that with a little effort, they can help the environment while turning a bigger profit, and they gathered during Pollution Prevention Week to host the 7th Annual Pollution Prevention Conference and to encourage others to get on board.

In 1996, the Indiana Department of Environmental Management (IDEM) organized a group of associations, agencies, businesses, and industries to form the Partners for Pollution Prevention. Those that committed to the program pledged to work aggressively to improve quality of life in their communities by reducing pollution.



Members of Indiana's Partners for Pollution Prevention

"The Partners receive deserved recognition throughout their communities and the state," IDEM Commissioner Lori F. Kaplan said. "This year's theme for the conference was 'Pollution Prevention is Green in More Ways than One,' which is fitting since this pledge promotes efficient business practices that can really help save money."

The conference featured several Partners who shared their successful pollution prevention efforts that doubled as economic success stories. Examples include the installation of more energy efficient technologies and profitable material substitutions.

The conference was also a day for the Partners and other businesses to recognize their collective achievements. In 1998, 71 Indiana companies accepted the Governor's Toxic Reduction Challenge. Through the Challenge, the state has realized reductions of more than 40 million pounds in toxic chemical releases to Hoosier air and water.

"We would like to see more manufacturers continue this challenge to reduce toxic releases by joining the Partners," said Dan Murray, executive director of the Partners for Pollution Prevention, "While the reductions we have accomplished already are impressive, we know

that the more companies join, the more positive effects we will see in our communities."

In recognition of all the Hoosier businesses that already work hard to reduce pollution and to encourage all industries to take the same initiative, Governor Joe Kernan declared September 20-26 Pollution Prevention Week. The Pollution Prevention Conference is part of the celebration of that week. For the Governor's proclamation see www.IN.gov/idem/oppta/pollupprevweek.html.

For more information on the conference, and to find Partners in your area, visit www.IN.gov/idem/oppta/p2/partners/conference/, and to see the Governor's Toxic Reduction Challenge, visit www.in.gov/idem/oppta/p2/toxicchallenge/index.html.

Surveys of Professional Landscapers Reveal Benefits and Barriers to IPM

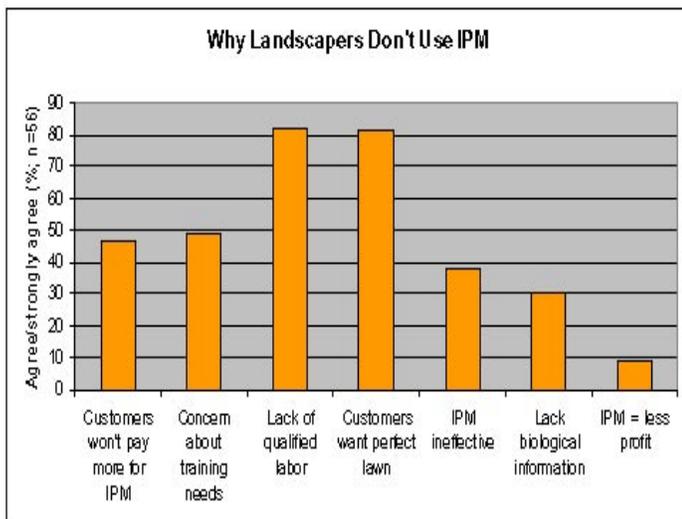
Pesticide applications in urban landscapes have been identified as a potential cause of human and environmental ills. Lake water quality in the Madison, WI area has captured the attention of the public as well as state and local officials. Urban runoff has especially concerned people who don't want pesticides in the area lakes. Integrated Pest Management (IPM) has been successfully used in agriculture for over 20 years, but its adoption by landscaping professionals has been slow. The first goal of the Reducing Pesticide Use and Risk in Urban Landscapes project, funded by the U.S. Environmental Protection Agency—Pesticide Environmental Stewardship Program, was to survey professional landscapers in the Lake Monona watershed to determine the barriers for adoption of IPM and perceived benefits of using IPM. This information will be used during the succeeding 12 months to develop social action plans to enhance adoption of IPM for urban landscapes.

From a database of 114 landscapers, a total of 86 companies were successfully contacted in the early spring of 2004, and all but 20 participated in the survey. Three of the refusals occurred because pesticide application decisions were made in out-of-the-area corporate headquarters. There was a 58% response rate, including 15% who opted to only complete a short 5-question version.

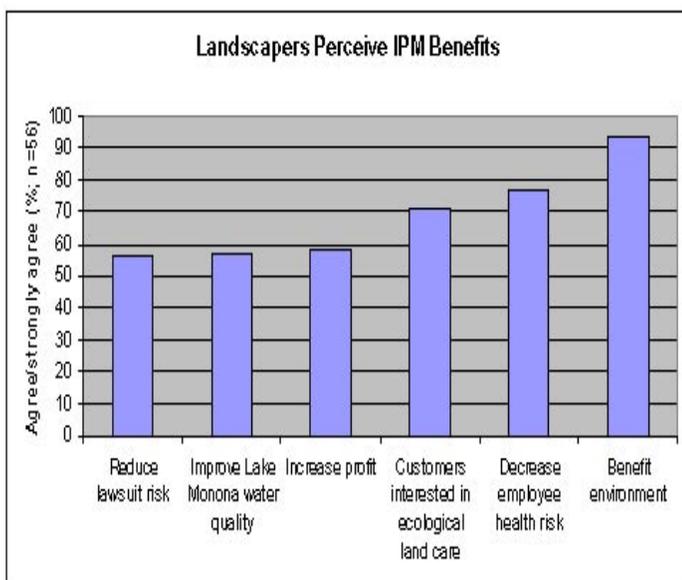
Of the 35 companies that practiced pest control on a regular basis, 91% stated they used IPM to some degree. The 2 primary barriers to adopting more IPM practices by landscapers were:

- Lack of qualified labor
- Customers' desire for perfect lawn

Surprisingly, only 9% felt IPM would decrease company profit.



Over 90% of landscapers surveyed reported they often or sometimes suggest non-chemical techniques to their customers, while 68% reported they have at least one customer that requests non-chemical techniques.



Landscapers generally perceived a number of potential benefits from using IPM. Nearly all thought IPM was environmentally beneficial, while over half believed it would increase profit and reduce their risk of being sued.

Landscape professionals appear to have reached a limit in the amount of IPM they feel they can employ. Mid- to upper-level professionals already seem fairly knowledgeable about IPM, getting their information from a variety of sources including Cooperative Extension, pesticide applicator training sessions, and trade journals/bulletins. Training needs are greatest for the hourly laborers who do the bulk of hands-on work. Labor needs in general are a problem for the Green Industry and IPM requires additional knowledge and training of laborers to be effective. Additionally, most training occurs during the winter when customer demand for services is low,

but hourly workers are typically laid off during this time and are unlikely to pay for training themselves. Charging higher rates could allow companies to hire more highly skilled labor and keep them employed throughout the year, but customers must be willing to pay for services, such as scouting, which may not result in a readily visible effect compared to a conventional practice, such as herbicide application. Customers must also be encouraged to accept the idea of pest thresholds and reduce the desire for a “perfect” landscape. Target homeowners with information on IPM practices and benefits to increase adoption of IPM by landscaping and lawn care companies. An increased understanding of the principles and environmental benefits of IPM should encourage more homeowners to request IPM. Work with grass roots organizations and government agencies to develop new social action strategies that support the use of IPM among professional landscapers around the Lake Monona watershed will take place over the next 11 months.

For more information about this project please visit: <http://www.uwex.edu/farmandhome/monona/>.

BMEEx Upgrades Web site

The Business Material Exchange of Wisconsin (BMEEx) is proud to announce the completion of extensive upgrades to their Web site and to introduce a new community-based material exchange program, the Beloit Material Exchange. These projects were partially funded by a State of Wisconsin Department of Natural Resources Waste Reduction and Recycling Demonstration Grant. BMEEx is a program of the Greater Beloit Chamber of Commerce. For free membership or to learn more about the exchange, visit www.bmex.org or contact Amy Loundenbeck, CHMM at 608-364-1131 or bmex@ticon.net.

Fine Print

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