2007 Activity Update
Enhancing Wisconsin’s environment and economy

With staff in Green Bay, Madison, Milwaukee and Stevens Point, SHWEC has been providing quality environmental education and technical assistance throughout Wisconsin since 1990. To contact a SHWEC Specialist go to www.shwec.uwm.edu

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The Solid and Hazardous Waste Education Center (SHWEC) has provided quality environmental education, information and technical assistance throughout Wisconsin since 1990. Serving hundreds of businesses, local government units and citizens each year, SHWEC exemplifies the “Wisconsin Idea” by providing University resources through research and education outreach programs.

The short success stories and other information provided in this activity update illustrate a small part of the extensive support and services that SHWEC provides. We are always anxious to tell more of our story. If you or your organization are interested in more detail, please visit our internet web site at www.shwec.uwm.edu. We look forward to your continued support and interest in the UW-Extension Solid and Hazardous Waste Education Center.

Sincerely,

Jack Annis, Co-Director
Pat Walsh, Co-Director

MISSION STATEMENT

The Solid and Hazardous Waste Education Center’s mission is to enhance Wisconsin’s environment and economy by providing quality education, information and technical assistance to promote the sustainable use of natural resources. SHWEC provides the following core education programs.

- Pollution Prevention
- Industrial and community recycling
- Environmental management planning
- Solid waste source reduction
- Community environmental protection
- Green building
- Energy conservation
- Renewable Energy
STAFFING AND BUDGET

The Wisconsin Legislature authorizes $562,400 for seven full-time equivalent SHWEC staff positions. This enables us to provide educational programs, technical assistance and information services for our core programs from four locations: UW-Green Bay, UW-Stevens Point, UW-Madison and the UW-Extension Continuing Education Center in Milwaukee.

PARTNERSHIPS

Along with providing our expertise to the network of UW-Extension County Agents and Specialists, SHWEC serves and partners with industry, community, government and educational and research institutions engaged in overcoming environmental and energy challenges. Some of the majors partners we work with include:

- Wisconsin Department of Natural Resources
- Wisconsin Department of Commerce, Small Business Clear Air Assistance Program
- Wisconsin Department of Agriculture, Trade & Consumer Protection
- Wisconsin Office of Energy Independence
- US-EPA Great Lakes National Program Office
- US Green Building Council
- Wisconsin Manufacturing Extension Partnership
- Wisconsin Focus on Energy
- US-EPA Region V
- US Department of Energy
- Dane County Clean Air Coalition

2007: AN OVERVIEW

In 2007 SHWEC staff provided education, information and technical assistance to more than 2,000 people through various activities and programs.

- Staff conducted or presented at workshops, seminars, conferences and training activities focused on composting, hazardous waste, medical waste, air issues and renewable energy.
- The Center averaged about 200 requests weekly for many types of environmental information through telephone or e-mail contacts.
- Staff conducted more than 90 on-site technical assessments which help our clients improve recycling, reduce waste, prevent pollution and achieve compliance with environmental regulations, as well as implementing renewable energy, green building projects and environmental management systems.
- The Center delivers a monthly electronic newsletter to over 525 interested parties looking for environmental information, regulatory updates and technological subjects related to the mission of SHWEC. This is the fourth year of all-electronic SHWEC newsletters which has saved many tons of paper, mail and other costs.
Continuing Growth of Environmental Management Systems Use in Industry

In recent years with the growth of interest in “greening the environment”, both companies and customers have become keenly aware of the importance of environmental stewardship. For manufacturers, that means having a formal environmental management system (EMS).

In the last 12 months the Solid and Hazardous Waste Education Center (SHWEC) has provided detailed technical assistance, guidance and training to 15 Wisconsin companies, saving them an estimated $75,000 or more in costs for initial EMS development and training. Their interest in EMS is a result of many reasons, perhaps most important is the desire to implement sustainable manufacturing and business practices that conserve resources and reduce their overall environmental impact.

Evidence of successful companies using EMS is plentiful. The National Performance Track includes nearly 500 companies that have collectively reduced their water use by 3.5 billion gallons, increased their use of recycled materials by 135,000 tons, reduced greenhouse gases by more than 97,000 tons, and nitrogen oxides and sulfur dioxide by 6,000 and 17,000 tons respectively. [http://www.epa.gov/performancetrack/pubs.htm](http://www.epa.gov/performancetrack/pubs.htm). The Wisconsin Department of Natural Resources also recognizes the value of EMS as an important and required component of becoming a “Green Tier” certified company. [http://dnr.wi.gov/org/caer/cea/environmental/](http://dnr.wi.gov/org/caer/cea/environmental/).

SHWEC Staff help Wisconsin companies retain jobs and improve environmental performance as a result of using our EMS tools, technical assistance, education and information programs all available at our website [www.shwec.uwm.edu](http://www.shwec.uwm.edu).

Technical Assistance for Community Wastewater Treatment Plants a Valuable Tool

The Solid and Hazardous Waste Education Center provides expertise to many different entities in Wisconsin. In 2007, the Center completed a successful US-EPA funded grant to demonstrate how state technical assistance programs (TAP) can assist Wisconsin wastewater treatment plants in resolving issues that are causing them to be in noncompliance with their state permits.

The Center’s staff provided pollution prevention training to over 80 operators of wastewater treatment plants and performed 20 assessment site visits with individual companies that were discharging to plants experiencing problems. In one instance, the treatment plant had actually been losing treatment capability because of illicit discharges in the system.

During the project, SHWEC was able to help resolve many discharge issues either through direct technical assistance to a company or through education and awareness activities which helped resolve several compliance issues.

In demonstrating the effectiveness of using SHWEC as a TAP, the Center has written a series of fact sheets on pollution prevention that will be available to US-EPA and Great Lakes States for use in their TAP programs and services.

Visit the SHWEC web site at [www.shwec.uwm.edu](http://www.shwec.uwm.edu) for access to the publication *Reducing Wastewater Impact at Small POTW’s* A Pollution Prevention Fact Sheet Series for active links to all of the fact sheets developed as a result of this project.
Disposing Old Medicines – Safely

2007 marked major growth in community and statewide interest in the pharmaceutical waste problem. Recent research indicates that significant quantities of endocrine-disrupting chemicals that cannot be removed by wastewater facilities are entering the environment through the flushing of old medicines. A number of organizations, led by UW-Extension, formed the Pharmaceutical Waste Working Group.

The working group developed a number of strategies in 2007 to address this issue, including developing consistent and accurate educational materials, improving methodologies for data collection, and pioneering innovative collection strategies. Convened on a quarterly basis, the working group has achieved impressive results:

* Development of a common reporting mechanism for community use.
* Identification of key educational strategies to inform the public.
* Implementation of pharmaceutical waste web site that identifies collection program opportunities (http://www4.uwm.edu/Solid and Hazardous Waste Education Center/pharmaceuticalCollection/viewRecords.cfm).
* Planning, development and successful funding of a pilot mail back program.

Over 30 community-based one-day collection events were held in Wisconsin. These events raised public awareness of the issue, but proved insufficient as an overall collection strategy. This led to development of a mail back program with Winnebago and Waukesha counties being identified as the pilot communities.

Several additional educational programs were initiated. In October, a Wisline webcast for hospital pharmacists was hosted by SHWEC to provide technical information regarding key issues with pharmaceutical waste and pollution prevention strategies. Additionally, a presentation highlighting the results of Wisconsin’s innovative pharmaceutical waste management efforts was presented by a SHWEC specialist and a county UWEX faculty member at the 5th Annual Maine Benzodiazepine Study Group Conference in Portland, Maine.

An education committee developed a comprehensive strategy for educating the public utilizing materials developed both locally and nationally by the Indiana-Illinois Sea Grant program. The committee recommends the use of a variety of educational methods to inform the public of proper disposal approaches for old medicines.
Promoting Bio-Energy Education in Wisconsin

High fuel prices and worries about global warming have prompted state and federal governments to enact incentive programs promoting development of alternative fuels made from biomass feedstocks. Wisconsin farmers and businesses are seeking information and education concerning opportunities and challenges in the emerging bioeconomy. With a number of successful facilities in operation, interest is growing. County Extension offices are being asked for assistance.

A statewide series of presentations in 2007 described the emerging bioeconomy, the forces driving it forward, and the opportunities and challenges to make it a reality in Wisconsin. District meetings of Agriculture and Natural Resources Extension (ANRE) and Community, Natural Resources and Economic Development (CNRED) faculty focused on these issues. Presentations at annual Extension programs, such as Northern Safari, followed. County and area faculty conducted workshops and forums customized for their clientele. SHWEC supports the UW Extension bioenergy website http://bio.uwex.edu/

Results have been encouraging: Extension offices in Northwest Wisconsin have developed a regional bioeconomy development effort called Earth, Wind and Fire, which is organizing a shared, regional approach to bioeconomy project development.

With help from local Extension faculty, a biomass project is being investigated in the Ashland area, with partners including the local electric utility, forestry contractors, and the county economic development office.

Alliant Energy, with assistance from UW-Extension, is investigating conversion of one of its coal power plants to a percentage of biomass fuel.

For each of these unique projects, Extension local and state faculties are providing information and up-to-date support. Extension's strong ANRE and CNRED county presence, as well as its state specialist campus expertise, mean that UW Extension will continue to be a key actor in bioeconomy development of Wisconsin.

Recycling Managers Corner

The Recycling Managers Corner is a new page on the Solid & Hazardous Waste Education Center's website that serves as a clearing-house for web-based recycling and solid waste information. The easy-to-use website, designed by Solid & Hazardous Waste Education Center Recycling Specialist, uses drop-down menus arranged by subject matter. Visitors to the site can select and follow links as they look for regulations, organizations, recycling market prices and other related content. http://www4.uwm.edu/shwec/e-courses/RecyclingManagersCorner.cfm
Implementing Community Clean Energy Challenge

In response to evidence that rapid climate change is an urgent threat to the environment and to the economic health of our communities, 17 Wisconsin mayors are among over 800 nationwide to sign the Mayor’s Climate Protection Agreement. Many are working to improve their energy profile. And close to 30 communities in the state are strategically pursuing sustainable community initiatives.

The City of Madison is aggressively implementing clean energy programs for city facilities and operations as a result of SHWEC expertise and guidance. To enlist participation from residents and businesses, the major generators of harmful carbon dioxide (CO₂) emissions, SHWEC organized eleven partners with big constituencies in a campaign. Six initiatives make it easy for citizens to do their share including saving energy, purchasing renewable energy, saving water and transportation fuel, and planting trees.

On Earth Day 2007, Madison’s Mayor, along with partners, issued a 100k Clean Energy Challenge to reduce 100,000 metric tons of harmful CO₂ emissions citywide by 2011.

The highly effective media campaign called Mpowering Madison (www.mpoweringmadison.com) was launched after SHWEC, Madison Gas and Electric and the City brought in a communications firm to work with the partners. News, radio and magazine ads, bus placards and event appearances promote the theme that you are Mpowered to make a difference at home, at work, on the go and at school; take the pledge; you can and you count.

Within two months, close to a thousand individuals and businesses pledged to reduce their carbon footprint with a significant number signing up for green power for all their electricity. SHWEC and the other partners will mentor the businesses, that range from UW Credit Union and a manufacturing firm to a grocery store and local college, to help them achieve their numeric goals.

Fort Atkinson’s active climate change committee developed a number of global warming strategies in 2007 with leadership provided by County UW Extension faculty and SHWEC. The city council passed a resolution supporting continued city involvement in this critical issue.

Challenging Green Bay to Light Up Efficiently

Energy costs have been rising all across the country. In an effort to reduce energy costs for residents and to increase energy awareness, Mayor Schmitt’s Sustainable Greater Green Bay Task Force collaborated with Focus on Energy to challenge the top 100 businesses/organizations in Brown County to participate in the Compact Fluorescent Light Bulb Challenge. In observance of Energy Awareness Month in October, 2007, the challenge was a fun way to get energy efficient compact fluorescent light bulbs into the hands of as many residents as possible and to educate on proper disposal for compact fluorescent light bulbs.

A total of 29 businesses/organizations participated. Over 23,000 light bulbs were sold, which translates into a total of $1.5 million in energy savings for residents in Brown County. If those savings are returned to the local economy it could mean up to $5 million for the Green Bay area.
Building Capacity for Runoff Infiltration Programs

Infiltration of storm water runoff is a widely touted but poorly understood management technique.

Extension educators have increasingly faced divergent viewpoints on the efficacy of infiltration during educational programs. SHWEC convened a panel of local experts in infiltration to create a consensus body of information on storm water infiltration. This information was used to create an in-service workshop for Extension basin educators, county agents and others.

Training for Municipal Phase 2 Storm Water Permits

Implementation of WI-DNR Phase 2 municipal storm water regulations by small municipalities continues to provide opportunities for Extension outreach education. Communities requiring Phase 2 permits have requested education on storm water management program development and regulatory compliance.

Three WisLine Web programs were held: Ordinance Enforcement and Development; Implementing a Storm Water Management Program, and Public Engagement.

The team engaged a number of partners with unique expertise from around the state to assist with teaching various aspects of the programs. The incorporation of these speakers from “out in the field” enhanced the value of the program by incorporating real-world experiences and by fostering peer learning.

Each program had close to 300 registered attendees from Phase 2 municipalities, consultants and regulators.
Traveling Green in Wisconsin - Program Celebrates First Year

The Department of Tourism’s Travel Green Wisconsin marked its first full year in 2007. This voluntary program reviews, certifies and recognizes tourism businesses that commit to implement practices that reduce environmental and social impacts.

SHWEC specialists developed publications to support businesses working to achieve Travel Green Certification by providing procedures to determine waste generation, energy use and water consumption. A “Reference Materials” fact sheet lists resources that businesses can utilize as they work through the certification process.

Visit Milwaukee, the leading tourism promoter in Milwaukee, collaborated with SHWEC to develop several outreach events. A diverse audience of over 75 businesses ranging from limousine operators to hotels attended. These events also provided an opportunity to showcase the greening efforts of the host businesses – State Fair Park and Hotel Metro. Interest in Travel Green in the Milwaukee area has grown with four businesses certified and several more in the certification process. Visit Milwaukee is planning quarterly meetings to recruit new members as well as to provide a forum for business-to-business technical exchange.

Statewide, 108 businesses had achieved Travel Green Certification by mid December 2007.

Recycling Markets Data

The Solid and Hazardous Waste Education Center has been collecting data on markets for recycled materials since 1994. After thirteen years, this effort continues to be relevant and useful to recycling program managers across the state. SHWEC collects and distributes data via an email list that currently has 44 members. While most use the data as a reference tool, two programs began using the data in 2007 to set the contract price for materials recycled by their programs. Another community reported that the data was instrumental in improving their contract with their recycling service provider.

Teaching the Teachers in the Master Composter Program

The Wisconsin Master Composter program continues to train volunteers to educate Wisconsin residents about the benefits of back-yard composting. During 2007 Master Composter groups were initiated in Eau Claire, Price, Dane and Ozaukee Counties. Fifty-two participants received the initial training from SHWEC and began working toward achieving Master Composter certification. The participants reported 432 teaching contacts through workshops and public demonstrations of composting techniques in their communities. Further information about this program can be found online at: http://www4.uwm.edu/shwec/publications/cabinet/html/compost/Instructor%20Resources.htm

Expanding Be SMART Coalition

After 12 years in existence, the SE Wisconsin Waste Reduction coalition has successfully expanded into a statewide organization. With SHWEC leadership, the Coalition reformed its mission and services. In 2007, the Be SMART Coalition continued its expansion in northeastern Wisconsin and includes Outagamie and Waupaca counties, as well as 15 municipalities in Calumet County and several new communities in Walworth and Ozaukee counties.
The Healthy Air Program approach to providing practical technical assistance, coupled with public health outreach and education to help employers change their manufacturing practices and the behavior of their employees, has reached its first milestone. Thirty of the top volatile organic compound (VOC) emitting manufacturers in Dane County have been contacted by program staff, and these interactions have led to:

- Increased number of manufacturers implementing emission reduction strategies;
- Lower emissions of ozone precursors, fine particles and HAPs;
- Improvement in the knowledge, skills and dispositions of employers and their employees regarding the causes and prevention of air pollution and related illness;
- Increased number of businesses partnering with the Dane County Clean Air Coalition.

A two tiered approach is being used for outreach to manufacturers in Dane County. In tier one, environmental regulatory databases and manufacturing directories were used to identify the major manufacturers emitting >10,000 lb/year of VOCs/ROGs (reactive organics). The ninety-three companies in this category were further prioritized by level of emissions, likely opportunity to reduce emissions, and similarity of manufacturing processes. Together, these companies reported 962 tons of permitted VOC/ROG emissions in 2005.

Thirty manufacturers were assigned Tier 1 status, and received intensive outreach contact from DCCAC and the UW-Extension Solid and Hazardous Waste Education Center (SHWEC). All twenty-eight companies contacted agreed to participate in the Healthy Air Program. (One company had moved operations to another state, and one had curtailed operations.)

By agreeing to provide employee notification and education about Clean Air Action Days, these companies will encourage 8,441 employees in Dane County to change their own behavior, to reduce area ozone and fine particle concentrations.

Prior to being contacted by the healthy air program, five of these companies had recently reduced VOC emissions on their own initiative by an aggregate 324 tons/year (TPY).

Twelve (43%) of the companies received a VOC reduction assessment by SHWEC. These assessments identified seven companies a further 40.4 TPY in potential VOC reductions. These opportunities included:

- Using lower VOC materials;
- Improving transfer efficiency of coating equipment;
- Training coating applicators to apply coating more efficiently;
- Modifying job specifications to reduce the need for coating.
- SHWEC provided technical support to these companies to ensure that reductions could be achieved.
**Philip (Jack) Annis** – UW Stevens Point, is the Co-Director of the Solid and Hazardous Waste Education Center and an Industrial Environmental Education Specialist. He provides education, information and technical assistance to businesses, industry and units of local government throughout Wisconsin. His efforts focus on pollution prevention, recycling, compliance assistance and environmental management systems that help eliminate or reduce the impacts of air emissions, waste water and solid wastes commonly associated with industrial activity.

Contact Jack at (715) 346-2793, jannis@uwsp.edu

**Steven D. Brachman** - UW-Extension Milwaukee, is a waste reduction and management specialist. Steve provides educational programming and technical assistance in pollution prevention and solid waste management for local governments and businesses. Areas of expertise include integrated solid waste planning and operation, pollution prevention, curbside and drop-off recycling programs, yard and food waste, composting, household hazardous waste collection, office and commercial recycling, and mercury waste issues.

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**Sherrie Gruder** - UW Madison, LEED Accredited Professional, is a sustainable design specialist for the University of Wisconsin- Extension. Sherrie provides statewide education and technical assistance on sustainability, green building, construction resources and renewable energy. Sherrie is working on many fronts to promote sustainable communities, businesses, organizations, and buildings and to create an infrastructure to facilitate them in Wisconsin. Sherrie also coordinates the state public benefits energy program- Focus on Energy- for UW-Extension’s statewide network of agents.

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**John Katers** - UW Green Bay, is an Adjunct Faculty member of SHWEC. John provides information and educational programming to industries and businesses. John’s programming focuses on waste minimization, pollution prevention, recycling technologies and renewable energy systems, primarily related to biomass such as wood and agricultural wastes.

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**David S. Liebl**- UW-Madison, College of Engineering, is a SHWEC pollution prevention and waste management specialist. He works closely with business and industry to provide training, educational programs and technical assistance on a wide range of environmental issues including: industrial hazardous waste, air pollution, storm water runoff, and agricultural hazardous waste. David also promotes community-based environmental protection, working directly with local governments and citizens around the State.

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**Joe Van Rossum**—UW Madison, joined SHWEC in 2004 as a Recycling Specialist. He primarily works with local governments and businesses to improve recycling and solid waste management. He also works with material recycling facilities to improve operations and to improve recovered material quality. Joe collects and disseminates data for the Wisconsin Market Price project which tracks the price paid to recyclers for commodities recovered in Wisconsin. He also coordinates the Wisconsin Master Composter Program. Contact Joe at (608) 262-0936 vanrossum@epd.engr.wisc.edu

**Pat Walsh**—UW Madison, is the Co-Director of the Solid and Hazardous Waste Education Center and an environmental and energy specialist with UW Madison/Extension. He is an attorney and engineer with extensive experience in environmental policy, especially waste management. Pat delivers educational programs in the areas of environmental management and energy conservation and renewable energy technology.

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Since 1990 the Solid and Hazardous Waste Education Center (SHWEC) has worked to improve Wisconsin’s Environment and economy by providing quality environmental education, information and technical assistance to promote the protection and sustainable use of natural resources throughout Wisconsin.

As part of UW-Extension, SHWEC serves and partners with industry, communities, governments and educational and research institutions engaged in overcoming environmental and energy challenges

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