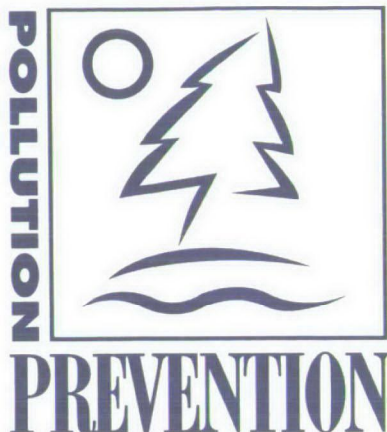




# Pollution Prevention News



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## EPA Proposes TRI Expansion

EPA proposed on January 6 to expand the Toxics Release Inventory (TRI) by 313 toxic chemicals. The plan, announced by EPA in a joint press conference with several environmental groups including the Natural Resources Defense Council, the Environmental Defense Fund, and the U.S. Public Interest Research Group, will almost double the size of TRI.

TRI is a database of toxic chemicals maintained by EPA. Facilities must report their annual release of these chemicals to EPA and the states. EPA makes the data

available to the public, who can use the information to assess risks in their communities. Currently, there are 320 chemicals on the list.

Broadening the scope of the list will provide citizens with a more complete picture of the chemicals which impact their communities. The expansion also will focus industry attention on additional pollution prevention measures. Further, the larger reporting list will provide broader, multimedia information

(Continued on page 4)

## New Industry Sector Team Initiative

EPA will take an industry-by-industry approach to preventing and reducing pollution under a plan announced by EPA Administrator Carol Browner in a meeting with the U.S. Chamber of Commerce in November 1993. The new initiative is designed to combine industrial innovation with regulatory flexibility in order to improve overall environmental quality and cut the costs to business of compliance with environmental laws.

EPA will select several key industrial sectors and create a strategic plan for each, integrating the way EPA interacts with that industry in rulemaking, permitting, reporting requirements, enforcement and technical assistance. "The old piecemeal approach, where the air office looks at air pollution, the water office looks at water pollution, and so on, doesn't work for me as a regulator and it doesn't work for you," Browner told the Chamber of Commerce audience.

The plans for each industry will include

activities such as:

- Rulemakings will be coordinated to ensure they do not conflict with one another;
- Record-keeping and reporting requirements will be reviewed to ensure they are clear and consistent;
- Permit processes will be streamlined where possible;
- Enforcement and compliance will be reviewed to identify opportunities for greater predictability, better information and more compliance assistance; and
- EPA will meet with leaders in each industry to identify innovative approaches in pollution prevention and environmental technology.

The new initiative follows on the heels of successful cross-media agency efforts including the pulp and paper integrated rule, and the activities to develop the lead strategy.



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## News & Resources

### EPA and DOE Solicit Grant Proposals from Industry

Does your company have a technology idea that could save energy, prevent pollution, and improve your industry's bottom line? If so, you may be eligible for financial assistance through the National Industrial Competitiveness through Energy, Environment and Economics program—or more simply, NICE<sup>3</sup>. Sponsored by EPA and the Department of Energy, NICE<sup>3</sup> encourages industry to reduce industrial waste at its source or use waste productively. Since NICE<sup>3</sup> began in 1991, 17 companies have been selected to receive one-time grants to help offset the start-up cost of new technologies.

The next solicitation for project proposals runs from February 1 through March 31, 1994. Interested companies should contact their state pollution prevention or state energy office, as the state office must be a co-submitter of a proposal. The federal grant will cover up to 50 percent of the total cost, up to a maximum of \$400,000. All types of industry are eligible, with priority given to proposals that fall within the following standard industrial classifications (SIC): SIC Code 26 (pulp and paper); SIC Code 28 (chemicals); SIC Code 29 (petroleum and coal products); and SIC Code 33 (primary metals).

To request a brochure or solicitation packet, contact Eric Hass, at DOE at 303-275-4728; Ernie Rios at DOE at 510-637-1950; or Ron Santoro at DOE at 202-586-8296.

### New Air Pollution Prevention Database On-Line

EPA's newest pollution prevention database, the "Air P2 Database," is now on-line. Designed to improve environmental quality through increased applications of pollution prevention technology, the P2 Database was up and running as of November 2, 1993. EPA's Office of Air Quality Planning and Standards has made the database publicly available through the "COMPLI" bulletin board

system (BBS) of its Technology Transfer Network.

The database will include items such as full text and abstracted documents on industry case studies, regulatory actions, supplementary environmental projects, professional contacts and services, training and educational opportunities, a calendar of events, and dialogue and electronic mail utilities.

Users can access the P2 Database within COMPLI by logging on at (919) 541-5742. The database will be on-line 24 hours every day, except the first half of the first work day each week.

For BBS assistance, call the Help Desk at (919) 541-5384. For general information and P2 assistance, call Louis Paley at EPA at (703) 308-8723.

### Note from the Pollution Prevention Research Branch

#### Psssst — Here's a Hot TIPPP

Like other large landlords, the federal government is concerned about preventing pollution on its properties. The solutions used by the federal government can often serve as a model for state and local governments and the private sector.

The Tidewater Interagency Pollution Prevention Program (TIPPP) is a good example of what the federal government is able to do. TIPPP is a cooperative effort among EPA, DOD and NASA to develop and demonstrate innovative pollution prevention opportunities at federal facilities in the Tidewater area of Virginia.

The Waste Reduction at Federal Sites program of EPA's Risk Reduction Engineering Laboratory provides engineering support to conduct pollution prevention opportunity assessments, reduce solid and manufacturing wastes, improve energy efficiency, test use of alternate materials, and reduce nonpoint source problems from all installation activities.

Projects successfully completed at TIPPP include:

- A demonstration at Fort Eustis that commissaries can "go green" and still make a profit;

- Development by NASA Langley Research Center of a new process to make composite materials for use in aircraft applications that eliminates solvents and creates less waste;
- Use of a plural component paint system at Langley AFB that reduces the amount of hazardous materials entering and leaving the base;
- Installation of aqueous parts washers to reduce the use of solvents at a Norfolk maintenance facility and aboard the U.S.S. Theodore Roosevelt.

For more information on the TIPPP program, contact Kenneth R. Stone at EPA at 513-569-7474.

### EPA and Commerce Join Forces in Prevention Project

EPA and the Department of Commerce have signed a five year Interagency Agreement to provide pollution prevention technical assistance to small and medium-sized businesses in the metal forming, metal finishing and metal plating industries. As part of the agreement, EPA is providing \$315,000 to DOC's National Institute of Standards and Technology (NIST) for a pilot project with NIST's Great Lakes Manufacturing Technology Center in Cleveland. The project involves using EPA-developed pollution prevention opportunity assessment methodology, technology demonstration and evaluation capabilities and other technical information and training that will enable the NIST center to effectively deliver pollution prevention technical assistance to small manufacturers.

For more information, contact Michael Baum at 301-975-2763.

To be added to our mailing list, please write:  
**Pollution Prevention News**  
 U.S. EPA  
 401 M Street SW (MC 7409)  
 Washington, DC 20460

**Editorial Staff:**  
 Polly Hunter, *Editor*  
 Gilah Langner  
 Joshua Katz



## In the States

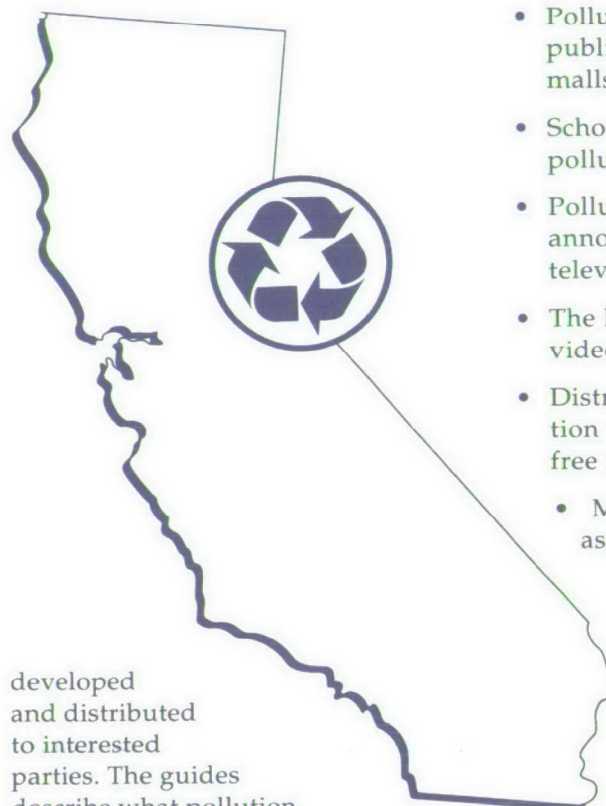
### Pollution Prevention Week in California

by Kathryn Barwick  
and Dave Hartley  
California Department of Toxic  
Substances Control

California recently held a Pollution Prevention Week to increase the awareness of the public and private sectors about the potential for pollution prevention to simultaneously protect the environment and improve economic competitiveness. The Office of Pollution Prevention and Technology Development of the California Department of Toxic Substances Control supported Pollution Prevention Week by assisting in the planning, and by providing funding through the Local Government Commission. The first event of its kind in the nation, Pollution Prevention Week was held October 4-10, 1993, and was officially announced through proclamations issued by both Governor Pete Wilson and the state legislature.

Local government environmental and economic development programs, industry associations, and environmental groups held pollution prevention events during this week to highlight the importance of pollution prevention as a new way of doing business. In addition, organizers hoped to raise the awareness and support of local officials for the development, continuance, and expansion of local pollution prevention programs.

Three activity planning guides for business groups, local governments, and environmental groups were



developed and distributed to interested parties. The guides describe what pollution prevention is, explain how various groups can support the implementation of pollution prevention in their community, and list suggested activities. Additionally, a detailed media outreach guide was distributed to all organizations participating in Pollution Prevention Week.

The idea for Pollution Prevention Week came from the Consortium of California's Pollution Prevention Committees. Members of the consortium include city and county environmental health agencies, wastewater treatment plants, fire departments, local planning agencies, economic development agencies, and other local entities. A total of 204 agencies participated in Pollution Prevention Week statewide, and 143 organizations passed resolutions or proclamations declaring pollution prevention week.

Highlights of Pollution Prevention Week include:

- Pollution prevention articles in local newspapers;

- Pollution prevention displays in public places such as libraries, fairs, malls, and city halls;
- School awards programs honoring pollution prevention activities;
- Pollution prevention public service announcements for public access television;
- The Department's "Why Waste?" video on public television;
- Distribution of pollution prevention videos to local video stores for free use by the public;
- Multi-agency regulatory assistance fairs;
- Pollution prevention workshops and training sessions;
- Radio talk shows discussing pollution prevention; and
- Model facility tours.

The overwhelming response from organizations statewide demonstrated that pollution prevention is becoming an essential part of these organizations' approaches. The Department and local agencies have already begun planning for the second Pollution Prevention Week, to be held in 1994.

For more information on the California Pollution Prevention Week, contact Dave Hartley at 916-324-1815.

#### Correction

In the article entitled "Chicago Funds Alternatives to Automobiles" in the July/August 1993 issue of *Pollution Prevention News* the amount of the Congestion Mitigation & Air Quality funds for FY 1993 used for non-traditional projects was 85 percent.

#### Job Opening

The non-profit National Roundtable of State Pollution Prevention Programs has an opening for an Executive Director. The position will be available on March 21, 1994.

Direct all written inquiries to the Roundtable's Personnel Committee, P.O. Box 7219, Silver Spring, MD 20910. Phone inquiries may be directed to Mr. Philip Cherry, Chairman, at 302-739-6400.



# WHAT'S HAPPENING IN SOLID WASTE?

## A Special Section on Solid Waste Prevention and Reduction

### EPA's WasteWi\$e Program Works with Businesses to Reduce Solid Waste and Save Money

EPA Administrator Carol Browner recently launched an ambitious partnership program to help companies generate less solid waste and make a dent in the country's municipal solid waste (MSW) disposal problem.

The commercial sector throws out 40 percent of the country's MSW and greatly influences the remaining 60 percent. This waste represents an inefficient use of resources that is costly to both companies and communities. Many companies have found that cutting waste represents big savings, sometimes millions of dollars per year. EPA's WasteWi\$e program is a voluntary, nonregulatory effort to help businesses put their waste reduction ideas to work.

Administrator Browner began the

program by sending letters to the Fortune 1000 manufacturing and service companies, inviting them to join WasteWi\$e. Companies that become members commit to making significant progress in three areas: waste prevention, recycling collection, and buying or manufacturing recycled products.

To accomplish this, each WasteWi\$e participant is asked to conduct a waste assessment to find out how much and what types of waste it is generating. This assessment, which can be a quick "walk through" or a detailed evaluation of company operations, helps identify the specific waste prevention and recycling measures that would be most effective in the company.

Based on the results of their assessments, member companies will select the waste prevention, recycling collection, and purchasing or manufacturing actions they intend to implement and send a copy of their

goals to EPA. Each year, participating companies will report to EPA on their achievements to date, contributing to a national progress report. EPA will

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*Companies that become members commit to making significant progress in three areas: waste prevention, recycling collection, and buying or manufacturing recycled product.*

---

also provide technical assistance and recognition to member companies.

For more information, call 1-800-EPAWISE (372-9473) and ask for the brochure entitled *WasteWi\$e: EPA's Voluntary Program for Reducing Business Solid Waste*.



### EPA Proposes TRI Expansion

(Continued from page 1)

on these additional chemicals, which is not currently available.

"By doubling the size of the list, EPA has created a more effective tool that can be used by the public to further reduce risk and measure results of efforts to curb pollution," said EPA Administrator Carol Browner. "An informed public is the foundation of comprehensive environmental protection."

EPA officials reviewed 1,000 chemicals before determining which should be added to TRI. The proposed addition of these chemicals is based on their acute human health effects and their environmental effects. The new

additions vary greatly and include nicotine, nitric oxide and malathion. Of the 313 proposed additions, approximately 170 are active ingredients in the formulation of pesticides.

Later this year, EPA plans to announce a second phase of the TRI expansion, which will broaden the list of facilities that must report releases of these chemicals under TRI. Currently, only manufacturing industries are required to report under TRI. EPA is in the process of identifying non-manufacturing industries associated with significant releases, such as mining and wholesale distribution, to determine their suitability for TRI reporting.

In conjunction with these expan-

sion programs, EPA is considering whether to make other adjustments in the scope of TRI. EPA received petitions from the Small Business Administration and the American Feed Industry Association seeking an exemption for facilities that file TRI forms with zero or small release estimates. EPA will provide the public with a report on its regulatory options by the end of January, and will hold a public meeting to discuss the report in February. EPA then will design a regulatory strategy with the objective of minimizing unnecessary data collection and reporting by facilities.

For more information call the EPRCA Hotline, 1-800-424-9346.



## WHAT'S HAPPENING IN SOLID WASTE

### Keep America Beautiful Closes the Recycling Loop

**K**ee America Beautiful has initiated 15 model community projects to build awareness of the need for businesses, institutions and private organizations to purchase products containing recycled materials. KAB, a membership organization with over 500 local affiliates, wants to stimulate the market for recyclables, thereby demonstrating the viability of waste recycling as a solid waste management tool in communities. This KAB effort, created under a cooperative agreement with EPA, complements EPA's WasteWi\$e program. Fifteen of KAB's local affiliates are working at the grassroots level to foster the "buy recycled" ethic among local businesses and institutions.

The Close-the-Loop Campaign is directed at local businesses, governments and institutions as well as individuals. Local businesses were selected as the target of the effort because they are at a central point in



*The Tifton/Tift County (Florida) Clean Community Commission's mobile recycling education vehicle will add a "Buy Recycled" component under the EPA grant.*

the manufacturing-distribution-purchasing chain; local businesses both influence and respond to manufacturers and consumers. The program also seeks to reach institutional consumers,

such as government agencies, and individual consumers. By stimulating the purchase and use of products made with recycled materials, KAB will enhance the market for recyclables, helping to "close the loop."

Along with the "buy recycled" ethic, KAB affiliates also promote waste prevention and recycling collection. This effort targets smaller, local businesses in the same way that EPA's WasteWi\$e is concentrating on Fortune 1000 companies. In fact, KAB will be urging businesses to join the WasteWi\$e effort as well.

The affiliates are taking the "buy recycled" message to their communities through campaigns which will include posters and window stickers for participating businesses and agencies. Several plan to work through school systems to make students aware of the need to buy recycled. KAB will sponsor "Buy Recycled" fairs and workshops for local businesses. Businesses which participate in the effort will be given publicity in local media. The fifteen affiliates will document their approaches, successes and lessons learned in order to provide guidance for future efforts in other communities.

For more information contact Sharon Oxley at Keep America Beautiful at 203-323-8987.

### Recycling Businesses Set Up in Two Pilots

**F**inding uses for materials collected as part of recycling efforts is the continuing challenge to municipal recycling programs. To help solve this problem, the Municipal and Industrial Solid Waste Division of EPA's Office of Solid Waste has funded two pilot projects to spur recycling-oriented businesses.

The City of Philadelphia Department of Commerce received a grant for three years of economic development tied to recycling. Philadelphia has created a Recycling Economic Development Consortium to advise the city on recycling development issues and to assist in creating the necessary markets for the products. The Consortium includes representatives from city departments, non-profit groups, academia and the private sector. The city hopes to identify potential feedstocks and markets, and then identify target enterprises for expansion and attraction.



The Institute for Local Self-Reliance (ILSR) also was awarded a grant to fund a recycling and economic development program. ILSR's tri-city project will focus on Washington, D.C., Richmond, Virginia and Baltimore, Maryland. The project seeks to create new jobs and launch scrap-based businesses and manufacturing enterprises. In addition, ILSR will demonstrate the economic impacts of its effort to close the recycling loop, including reduced disposal costs and increased tax bases. The study also will examine the relationship among recycling programs, market development and community economic growth.

For further information, contact: Deb Gallman at EPA at 202-260-4683; Mjenzi Traylor of the City of Philadelphia at 215-686-8488; or Jane Buckley at ILSR at 202-232-4108.



## WHAT'S HAPPENING IN SOLID WASTE

### EPA's In-House Source Reduction Program

by Mia Zmud

EPA Office of Solid Waste  
and Michael E. O'Reilly  
Office of Administration and  
Resource Management

**P**racticing what it preaches has become official policy at EPA under Executive Order 12780 on Recycling and the more recent Executive Order 12873 on Recycling, Acquisitions and Waste Prevention. These Executive Orders require that all federal agencies promote and integrate cost effective source reduction and recycling into their solid waste management programs.

The source reduction programs and initiatives in practice in EPA's headquarters offices and most regional offices include:

**Dual-Sided Copying Policy**— In August 1989, EPA began requiring dual sided copying by all employees, whenever the machine capability allows. EPA estimates that this policy has reduced paper consumption by 10

percent, and saved on postage fees and filing space.

**Merchant Mug Program**— Since 1990, vendors at EPA headquarters have offered a five cent discount when EPA employees bring their own mug for coffee, rather than use a nondurable one. This program has been expanded to soft drink purchases in some stores. This has helped to reduce the amount of food packaging waste generated in offices.

**Surplus Supply Reuse Program**— On an Agency-wide basis, EPA's supply store offers surplus used supplies to employees at no cost, and encourages them to return used laser cartridges and typewriter ribbons so they can be reconditioned by the supplier. These measures cut down on waste generated in offices and reduce purchasing costs.

**Moving Box Reuse Program**— In EPA headquarters, corrugated cardboard boxes are being reused at least 3-4 times before they are recycled. In order to further reduce this waste, the Agency is evaluating the use of durable moving boxes which could be used over 200 times.

**Use of Non-Petroleum Inks**— The EPA headquarters print shop now uses non-petroleum, vegetable-based inks on all of its black ink printing. Steps are being taken to expand the use of these inks to other colors.

**Paper Reduction Measures**— Common strategies to reduce paper use include: storing documents on computer disks rather than printing hard copies; using electronic communication; maintaining central files of technical documents; editing documents on computer screens; returning EPA publications to the originating office for redistribution; and posting documents in central locations or



*EPA employees are required to use dual-sided copying when possible.*

routing documents to reach multiple readers.

#### Paper is Next Target

EPA is preparing to go beyond its current source reduction efforts with a new initiative to be launched in Spring 1994. This new campaign will target paper, the largest component of EPA's (and most federal agencies') waste stream. The goal is to reduce consumption of office paper by 15 percent Agency-wide.

The campaign will promote "wise and selective use of paper." The campaign will focus on photocopy centers, where employees will be encouraged to consider alternatives to paper for Agency communications, and to alter their paper consumption habits.

The campaign also will give individual headquarters and regional offices the opportunity to create and carry out an office-wide paper reduction strategy. This will allow offices to target their specific problem areas. The office-specific strategies will serve as a pool of ideas, and at least one will be selected each year for agency-wide implementation.

In addition to reducing a major component of EPA's waste stream, EPA anticipates cost savings from avoided paper purchases, reduced mail costs, and reduced costs associated with document storage.



*EPA has made recycling cans and bottles easier by placing recycling containers throughout the headquarters building.*



## WHAT'S HAPPENING IN SOLID WASTE

### WasteCap Operates in Tri-State Area

A New England program funded partly by EPA has successfully used a business-helping-business approach to promote solid waste minimization. Tri-State WasteCap operates in Vermont, Maine and New Hampshire, to enhance businesses efficiency and reduce the amount of pollution generated.

WasteCap was started by Associated Industries of Vermont in 1990. After the success of the Vermont program, Vermont assisted the Maine Waste Management Agency and the Business and Industry Association of New Hampshire in expanding the program. In the three years that it has operated in the tri-state area, WasteCap has worked directly with 200 businesses on waste minimization and pollution prevention strategies.

Tapping the expertise of peers, WasteCap provides non-regulatory, on-site waste assessments at no charge to the business. WasteCap's efforts have led to changes in business operations in a range of areas includ-

ing: inventory and maintenance practices; quality control procedures; raw material use; packaging use; and bulk purchasing.

The three main tools WasteCap uses to assist businesses are an interactive computer model, fact sheets, and on-site assistance. WasteCap developed the WasteCap Interactive Computer Model, known as WICM, to educate people about recycling methods that may be applied to their businesses. WICM is a first-in-the-nation, waste reduction, computerized modeling tool for industry waste stream and recycling evaluation.

WICM enables businesses to track seven recyclable commodities—aluminum, corrugated cardboard, glass, HDPE plastic, newspaper, PETE plastic, and white office paper. To use WICM, the business enters information—being as general or specific as it desires. Within seconds, WICM estimates the company's solid waste generation, disposal costs, waste stream composition, and potential



At the presentation of the 1993 WasteCap Waste Reduction Award are (l to r): Merrill R. Hohman, Director, Region I EPA Waste Management Division; Commissioner Robert Varney, New Hampshire Department of Environmental Services; Emily Hess, Director, New Hampshire WasteCap; Muriel Lajoie, Manager of Environmental Services, Monadnock Paper Mills; Thomas Burack, WasteCap Steering Committee and Esquire, Sheehan Phinney Bass & Green.

recycling related cost savings.

For more information, contact: Gayle Briggs, Maine Coordinator, at 207-287-5300; Emily Hess, New Hampshire Coordinator, at 603-224-5388; or Connie Leach Bisson, Vermont Coordinator at 802-223-3441.

### News from EPA's Waste Minimization Branch, Office of Solid Waste

#### Waste Minimization Roundtables

A four-day Roundtable was held in November 1993, with approximately 100 observers and 120 participants representing environmental and public interest groups, technical assistance centers, state and federal regulators, generators of hazardous waste, and owners and operators of hazardous waste treatment, storage and disposal facilities. Participants discussed source reduction and recycling goals, and some of the specific regulatory and non-regulatory mechanisms available to help reach those goals.

The participants felt that EPA needs to emphasize the multi-media aspects of pollution prevention, to assure that reductions are real and pollutants are not shifted from one

medium to another. Also, there was a desire for EPA to set priorities for pollution prevention activities, based on areas of highest risk concern. The participants also agreed that there was a need for EPA to clearly identify and communicate its pollution prevention expectations.

EPA will hold at least three more smaller Roundtables, in Texas, California and Ohio. For more information, contact Sandy Farrell at 703-308-8679.

#### Measuring Source Reduction and Recycling

OSW's Waste Minimization Branch entered into cooperative agreements this past summer with four states—Alaska, Ohio, Oregon and Washington—to examine the adequacy of the methods and data available to

measure source reduction and recycling progress. Many states have statutory deadlines for meeting pollution prevention goals, and many states have been developing their own methods for measuring progress towards these goals. EPA would like to facilitate the transfer of sound measurement methods among the states, and to better understand the methods that exist to determine if improvements are necessary. The four participating states will look closely at the methods used by states and by industry, and at the quality of the Toxics Release Inventory, the Biennial Report System data, and state annual report data.

For more information, contact Becky Cuthbertson at 703-308-8447.

(more **NEWS**, page 9)



## WHAT'S HAPPENING IN SOLID WASTE

### Pay as You Throw: Unit Pricing Reduces Solid Waste

Communities report that programs that link the cost of household garbage disposal with the amount of garbage thrown away are encouraging a reduction in household garbage. Many communities have successfully implemented some form of "unit pricing" in order to offer an economic incentive for recycling and reduction in trash.

Traditionally, charges for waste collection have been paid for through property taxes or sewer bills, thus effectively hiding the costs from the user and offering no incentive for environmentally responsible behavior.

Under this type of system, the charges remain the same whether a family throws out six bags of trash and never recycles, or the family throws out two bags and recycles one.

Unit pricing, sometimes called "pay as you throw," can help address these problems. With this type of rate system, each household pays for the amount, by weight or volume, of trash thrown away. This harnesses market forces and sends a clear price signal to encourage consumers to seek ways to reduce household waste.

By providing a continuous economic incentive for consumers to reduce and

reuse products and packaging, unit pricing can help reduce the amount of garbage consumers send to a landfill. It further helps the environment by sending signals up the waste stream to manufacturers and designers, motivating them to develop products and technologies that create less waste. All told, unit pricing encourages a large-scale reduction of the amount of natural resources necessary to meet our needs.

Three states—Minnesota, Washington and Wisconsin—require unit pricing in local communities. Over

*(Continued on next page)*

### Smithsonian to Exhibit Trash

by Jan Canterbury  
Office of Solid Waste

The Smithsonian Institution is exhibiting trash. That's right, in the Spring of 1995, the Smithsonian will launch a traveling museum exhibit on Municipal Solid Waste (MSW). The new exhibit, entitled "The Rotten Truth (about Garbage)," offers an engaging view of the problems of too much trash.

The goal of The Rotten Truth (about Garbage) is to help visitors evaluate issues and pursue practical solutions in daily life, in order to help reduce our solid waste problems and to conserve natural resources. The broad view of trash spans both the history of the world and the life-cycle of a consumer product. The exhibit will begin with stories about trash in the natural environment back to the 1700s. It then progresses to the present-day journey of a consumer product from the forest or a mountain to our homes, and finally to the product's disposal.

"The Rotten Truth (about Garbage)" uses a variety of approaches to capture viewers' attention, and may include:

- An exhibit which focuses on life cycle analysis and gives people a sense of the environmental trade-

offs involved in the production of various products;

- A "trash timeline," spanning the Bronze Age to the present;
- An interactive computer program and quiz;
- Humorous displays, for example taking a tongue-in-cheek look at how a product journeys from raw material to refuse.



*This image from The Rotten Truth (about Garbage) offers a glimpse of the pride some communities have had in their landfills.*

EPA's Office of Solid Waste and Region 3 are providing partial funding for the exhibition organized by the Smithsonian Institution Traveling Exhibition Service in cooperation with the Association of Science-Technology Centers. "The Rotten Truth (about Garbage)" will travel around the country to 12 museums or science centers over a three year period. It is expected that about three million people will view the exhibit.



## WHAT'S HAPPENING IN SOLID WASTE

### How to Get the Most Out of Technical Assistance

by Janice Johnson  
Office of Solid Waste

**T**echnical assistance is a valuable tool for pollution prevention, and is most effective when offered through existing business organizations. That was the finding of a pollution prevention pilot project funded by EPA's Office of Solid Waste (OSW).

In 1992, EPA awarded five grants to state organizations with the goals of: (1) characterizing industrial non-

hazardous waste (INHW); (2) identifying and implementing source reduction and recycling technologies; and, (3) developing markets for any recovered products. INHW includes solid wastes generated by manufacturing processes and commercial operations that are not otherwise defined as hazardous or municipal waste. The projects are to be completed by June 1994.

OSW held a meeting in November with groups which had INHW programs to discuss the results of their projects. The groups noted that they were most successful in convincing businesses to participate in pollution prevention projects when they had a prior connection with that business.

For example, the Illinois Hazardous Waste Research and Information Center (HWRIC) relied upon its strong relationship with the American Foundryman's Society and the Illinois Cast Metals Association in getting foundries to participate in its pollution prevention programs. Another asset for groups such as HWRIC is their non-regulatory status.

The trade associations provided HWRIC with background information, assisted in locating interested foundries, and helped to disseminate information to their members.

In another case, the University of Tennessee's Center for Industrial

Services (UT) worked with chambers of commerce and solid waste control authorities in 12 counties to convene solid waste focus groups. The focus groups allowed local business people to share information on pollution prevention and recycling options. Participants also discussed their waste streams in an attempt to find potential markets. UT estimates that 36 tons per day of solid waste could be reduced as a result of the 12 focus groups established so far.

Another example of the benefits of utilizing existing relationships is demonstrated by a program conducted by the Northeast Industrial Waste Exchange (NIWE), a listing service that matches companies holding unneeded commodities—surplus materials, off-spec goods, or manufacturing by-products—with companies that can make use of those materials. NIWE evaluated non-hazardous waste streams of the iron and steel foundry industry in order to help companies market their wastes. To increase participation in its project, NIWE representatives contacted NIWE board members, existing waste exchange clients, and trade and manufacturing associations.

For more information on the grants, contact Janice Johnson at EPA at 202-260-7559.

### Unit Pricing

(Continued from previous page)

1000 cities across the U.S., from Perkasi, PA to Pasadena, CA successfully use some form of "pay as you throw" garbage collection rates. In addition to promoting the "Three Rs"—Reduce, Reuse, Recycle—unit pricing gives people a greater sense of fairness and control over their waste-related expenses.

Some communities have been reluctant to try unit pricing due to the fear of illegal dumping to avoid fees, concern that administration may be complex, and the need for a positive cash flow for MSW programs. Communities that have faced these challenges have found that they can be overcome by public education, early planning and an effective rate structure design.

To help communities solve their MSW problems by implementing this economic incentive approach to source reduction and recycling, EPA will publish a "Pay As You Throw" guide in the Spring of 1994. The guide is based on a unit pricing Roundtable held in December 1992 in which a dozen communities brainstormed the benefits and barriers to unit pricing. Additionally, OSW will sponsor unit pricing workshops in 1994 to serve as a catalyst for information exchange in communities around the country.

For information on unit pricing, contact Jan Canterbury at OSW at 202-260-2349.

### News from the Waste Minimization Branch

#### Letter to Large Quantity Generators

OSW's Waste Minimization Branch recently sent a letter from Administrator Browner to approximately 10,000 chief executives of large quantity generators of hazardous waste, reminding them of their regulatory requirement to certify that a waste minimization program is in place. The Administrator's letter asked the CEOs to demonstrate their leadership and commitment

to pollution prevention by making these waste minimization plans public.

In the Spring of 1994, EPA will publish a list of large quantity generators that were required to certify in 1991 that they had such a program in place. The list will be compiled using the 1991 data because it is the most recent RCRA data available.

For information, contact the RCRA/Superfund Hotline at 1-800-424-9346.



# DfE

## DfE Begins Metal Finishing Project

by Deborah Boger  
Design for the Environment

EPA has begun a joint project with the Industrial Technology Institute and the Cleveland Advanced Manufacturing Program. This project is funded as a Technology Reinvestment Project, and its purpose is to develop an integrated Energy, Environment, and Manufacturing (EEM) assessment methodology for certain sections of the metalworking industry.

EPA's Office of Research and Development (ORD) and Design for the Environment (DfE) program are both participants in this project.

The EEM assessment methodology is intended to be an auditing tool that will allow businesses to conduct energy, environment, and manufacturing assessments. Three separate tools will be developed, each designed for a slightly different audience and purpose.

### EEM Audit Tool

The first tool is the Integrated EEM Assessment Protocol. To develop this protocol, EPA, the Industrial Technology Institute, and the Cleveland Advanced Manufacturing Program will review existing tools for manufacturing, environmental and energy auditing; they will take the best features of these tools and combine them into a single, detailed, data intensive assessment suitable for sophisticated companies. The resulting information will be very specific due to the detail of the assessment.

The second tool is a simplified version of the Integrated EEM Assessment Protocol. It is intended for owners and managers of small businesses or companies that do not have the resources to carry out a full assessment. The tool will be simple and easy to use, and it will take into account the realities and constraints of small businesses. The results will not be as detailed as for the EEM Assessment Protocol; rather, they will show



*Metal plating facilities will benefit from the new EEM assessment methodology.*

only general areas with potential for major improvement.

The third tool is an EEM benchmarking tool that will allow a company to see how it compares to its competitors. The tool provides benchmark data on a variety of factors such as energy costs per square foot, waste generated per unit production, and value added per worker. The project will then generate a curve of industry averages based on a survey of manufacturers, and it will allow a company to compare itself to its competition.

Once the assessments have been completed and businesses have identified areas in which they need to improve, ORD will fund research on technologies that have the potential to serve as alternatives in these areas and will demonstrate the performance of these technologies. ORD will concentrate its efforts on searching for broad process alternatives for large segments of the metal finishing, metal forming and stamping, and screw machine industries. The product will be useful for companies that can afford entire replacement technologies, as well as companies that are just starting up.

DfE will concentrate its efforts in the metal finishing industry. DfE will

evaluate the comparative, multi-media risks of alternative chemicals, processes, and technologies. The DfE process begins with an evaluation of specific steps in metal finishing processes to target those of highest risk. In order to do this, DfE will work through the Industrial Technology Institute to engage the metal finishing industry as a partner in the project. A metal finishing industry profile will be developed which will provide background information on the industry and help select target areas.

### Assessing Substitutes

Once a target for developing alternatives has been selected, industry and DfE will develop a Cleaner Technology Substitutes Assessment (CTSA). This assessment will evaluate the comparative multi-media risk of substitute chemicals, processes and technologies. To the extent possible, this work will incorporate data developed by the ORD effort.

The CTSA is developed through a process in which participants identify alternatives and conduct an evaluation. The evaluation will include environmental risk, cost, and performance information on each of the alternatives. The resulting document is intended to be widely distributed among metal finishers to enable them to make environmentally informed business decisions. Data collection and outreach efforts will complement other aspects of the program. The Industrial Technology Institute will manage the project and coordinate the sharing of information and outreach systems.

The benefits of this project to industry are twofold: 1) industry will receive information on the environmental risk trade-offs of identified alternatives, and 2) industry will have a methodology for evaluating the comparative, multi-media risk of alternatives in other areas.

For more information, contact Brian Sweeney at EPA at 202-260-0720.



## DfE Accounting and Capital Budgeting Project Takes Major Step Forward

by Marty Spitzer  
EPA Pollution Prevention Division

Advocates of pollution prevention have long recognized that pollution prevention can make good economic sense. EPA's Design for the Environment Program (DfE) has begun to develop partnerships with the financial community to integrate environmental thinking and pollution prevention into management accounting, project evaluations (capital budgeting), lending, and insurance/risk management. When these communities understand the benefits of pollution prevention, they can become a powerful force to strengthen the economy and protect the environment.

In December, the Accounting and Capital Budgeting for Environmental Costs Project reached its first major milestone. Building on more than a year of planning, EPA and its partners in the business, accounting and engineering community held the first-ever national workshop on integrating environmental costs into management accounting and capital budgeting practices. The workshop was designed to stimulate a cross-disciplinary dialogue, identify and discuss issues and needs, and most importantly, develop a "stakeholder's" Action Agenda. The Action Agenda, which will be widely distributed beginning in April, is the culmination of the agenda-setting phase of EPA's project.

### Action Agenda Underway

Developed with the input of approximately 90 national and international experts, the Action Agenda will identify priority needs and actions for each of the major stakeholder groups. All of the recommendations are intended to build on efforts already underway and to maximize cooperative partnerships that encourage rather than regulate businesses. The Agenda will include

recommendations for business accounting, finance, engineering and environment staffs, the trade and professional societies who represent and educate these professionals, as well as government and academia.

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*The financial community ... can become a powerful force to strengthen the economy and protect the environment.*

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As EPA begins implementing those parts of the Action Agenda that government is best suited to address (phase II of the project), the Agency will be looking to all of these groups to pick up those pieces of the Agenda that they can best address. If everyone takes on a portion of the Agenda, we will build on our strengths and expertise and reach our common goals — environmental protection and a strengthened economy. With workshop co-sponsors including the Business Roundtable, the U.S. Chamber Commerce, the American Institute of Certified Public Accountants, the Institute of Management Accountants, AACE International (an association for Total Cost Management), many opportunities lie ahead.

For updates on EPA's Accounting project or other DfE projects, information on tools, techniques, case studies, recent publications and reports available from EPA and other organizations, or to join EPA's Environmental Network for Managerial Accounting and Capital Budgeting, please contact EPA's Pollution Prevention Information Clearinghouse at (202) 260-1023.

Anyone interested in helping implement the Action Agenda and exploring opportunities to contribute should call EPA at (202) 260-4164.

### Accounting for Pollution Prevention

Whether a business manager is deciding what equipment to buy, trying to understand what it costs to produce a product, or setting up performance and compensation systems, environmental costs should be part of the calculation.

Managers who do not know what they are spending on the environment cannot easily reduce those costs. Improving accounting practices so that they identify and allocate environmental costs to the products and processes responsible for them is an essential step in reducing those costs. Similarly, when managers, financial analysts, or project engineers do not fully consider environmental costs in decisions on what products to produce or new equipment to buy, they will inevitably miss opportunities to reduce costs and environmental impacts. Like other aspects of pollution prevention, assembling a cross-functional team is an excellent way to address these issues.

The level of detail for any accounting or capital budgeting system will depend on the needs of the company and the complexity of the project at hand. For example, projects addressing "low-hanging fruit" — easy to do, low cost, prevention measures — may only need simple payback analysis to justify the expenditures. As projects increase in sophistication and cost, more elaborate analyses are needed to ensure that cleaner technologies can be evaluated fairly against end-of-pipe alternatives. At a minimum, a project evaluation should identify all direct and indirect costs, allocate them to the processes or products responsible for them, qualitatively assess reductions in liabilities and other intangibles, and use appropriate financial indicators and time horizons to ensure that pollution prevention investments receive a fair hearing.



# Calendar

Title	Sponsor	Date/Location	Telephone
Project ROSE Used Oil Management Conference	Project Rose (Recycled Oil Saves Energy)	March 13-15 Birmingham, AL	205-348-4878
Global Climate Change: Science, Policy and Mitigation Strategies	Air & Waste Management Association	April 5-8 Phoenix, AZ	412-232-3444
Federal Environmental Restoration and Waste Minimizaton Conference	Hazardous Materials Control Resources Institute	April 25-29 New Orleans, LA	301-251-1900 301-738-2330 (fax)
First International Congress on Liquid Waste Recycling	National Oil Recyclers Association	May 23-27 San Francisco, CA	216-791-7316
32nd Annual International Solid Waste Exposition	Solid Waste Association of North America	Aug. 1-4 San Antonio, TX	301-585-2898

## Conference to Showcase Radiation Technology

Fueled by the need to reduce volatile organic compound emissions, ultraviolet (UV) and electron beam (EB) curing technology has been growing rapidly. New technology applications will be highlighted at the RadTech '94 UV/EB Conference and Exhibition, May 1-5, in Orlando, Florida, sponsored by RadTech International North America, the association for the advancement of UV/EB technology.

For more information, contact Anita Sapp at RadTech International, tel: 708-480-9576, fax: 708-480-9282.

## 1994 Red Clay Conference

The University of Georgia Law School in Athens is sponsoring the 1994 Red Clay Conference in April. The student-organized conference will focus on pollution prevention and include workshops on energy efficiency, poverty and the environment, endangered species protection, growth control strategies, RCRA developments, prosecution of environmental citizen suits, and strategies toward sustainability.

For final dates and a conference brochure, contact the law school at 706-542-5182.

## DOE Pollution Prevention Conference

The Department of Energy is sponsoring its tenth Pollution Prevention Conference, May 3-5 in Denver, CO. The Conference will focus on creating policies within government and industry that encourage pollution prevention initiatives and innovation, and improved communications across levels of government.

To present a paper or attend the conference, contact Linda Jo McDonald at 615-435-3415 or Linda Malinauskas at 615-435-3507. For exhibits, contact Janet Ventola at 301-601-5381.

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