



Pollution Prevention News



INSIDE

Voluntary Programs 2

Updates on some new and continuing voluntary pollution prevention programs: Mobility Partners, Green Lights, WasteWiSe, and more.

Interview: Lynn Goldman 4

The new Assistant Administrator of EPA's Office of Pollution Prevention and Toxics discusses her priorities and the role of pollution prevention.

Transportation 6

Special feature on transportation issues looks at retrofitting buses, smart cars and highways, and methods of moderating travel demand.

Accounting Project 8

EPA's Management Accounting and Capital Budgeting Project releases an Action Agenda.

Case Study 9

A close-up look at the new water-soluble printing ink from Deluxe Corp.

Greening of the White House 10

With 50 actions underway or completed, the Greening of America's most famous home continues. A photo look at the process.

Calendar 12

Editorial Staff:

Ruth Heikkinen, Editor
Gilah Langner
Joshua Katz

NICE³ AWARDS \$3.4M TO INNOVATIVE PROJECTS

Innovative firms with pollution prevention and energy saving ideas are the recipients of \$3.4 million in grant funding from the Department of Energy (DOE) and EPA.

Since 1991, DOE and EPA have jointly administered the NICE³ cost-sharing grant program, which gets its catchy acronym from its purpose — to promote National Industrial Competitiveness through Energy, Environment, and Economics. Projects are given seed money through a one-time grant to help offset start-up risk. Awardees design, test, demonstrate, and assess the feasibility of new processes or equipment with the potential to increase energy efficiency, reduce pollution, and improve process economics. After the initial grant funding period, the awardee is expected to continue financing the project.

The NICE³ grant recipients for 1994 are as follows:

- **Continental Circuits** of Arizona, \$220,000, to demonstrate a new technology that allows for the copper plating of printed circuit boards without the use of harmful chemicals.
- **The Torrington Company, Inc.** of Connecticut, \$325,000, to demonstrate an innovative technique of relieving stresses in extruded wire by annealing with an induction coil.
- **Chrysler Corp.** of Delaware, \$400,000, to demonstrate a new system of spray painting which relies on electrostatic attraction between the powder particles and the surface to be painted. The new system eliminates the need for an incinerator and greatly reduces the amount of air that must be recirculated in the paint booth.

Continued on page 8

LEADERSHIP PILOT PROGRAM DUE TO START

EPA has issued a request for pilot project proposals for its Environmental Leadership Program, in an announcement in the *Federal Register* on June 21. The pilot projects will explore ways that EPA and states can encourage facilities to develop innovative auditing and compliance programs and reduce the risk of noncompliance through pollution prevention.

One of the seven criteria facilities must address is pollution prevention. Facilities must describe their existing or proposed comprehensive, multimedia pollution prevention program, and how that program is integrated into their overall

operations. Facilities must also propose measures that will track the compliance improvements and pollution prevention results that will accrue from their participation in a pilot project. In addition to pollution prevention, criteria include: compliance history, environmental management/auditing programs, disclosure of audit results, "setting an example," performance measures, and employee and community involvement.

EPA plans to select three to five pilot projects from the pool of proposals to be received. Proposals are due by August 21. For more information, contact Mike Schiavo at 202-260-2824.

VOLUNTARY PROGRAMS



EPA Administrator Carol Browner

Led by the successes of the 33/50 program and Green Lights, EPA has developed a series of new voluntary programs aimed at encouraging innovation and involvement of the private sector and governmental organizations in pollution prevention and energy efficiency. A conference on Voluntary Initiatives was held in Williamsburg, VA on June 1-3 which highlighted the efforts of numerous companies and groups. Below are some updates on new and continuing voluntary programs.

MOBILITY PARTNERS

Mobility Partners is a new joint project of the Surface Transportation Policy Project and EPA's Office of Policy Analysis which aims at helping practitioners, business leaders, and citizens exchange ideas for meeting the challenges of transportation planning and clean air quality. The program will develop case studies,

technical reports, a referral line, and a quarterly newsletter. Organizations developing innovative transportation plans with pollution prevention goals will be recognized with an award.

"When it comes to the technological innovation necessary to make pollution prevention a reality, it's the people who manufacture a product who tend to know best how to redesign the process to make the product cheaper, cleaner, and smarter."

**—Carol Browner
EPA Administrator**

charter members of the WasteWi\$e program run by EPA's Office of Solid Waste. WasteWi\$e companies commit to reduce solid waste in three ways: preventing waste at the source, collecting materials for recycling, and increasing the recycled content in the products they buy or manufacture. As a next step, the charter members will identify their goals in each of these areas. More companies are welcome to join. Call 1-800-EPAWISE.

WAVE

WAVE partners can look forward to a new water analysis software program for tracking and optimizing hotel water use, scheduled for release in September 1994. The software is being developed by the Metropolitan Water District of Southern California under a cooperative agreement with EPA's Water Alliances for Voluntary Efficiency (WAVE) program. WAVE participants voluntarily commit to make profitable upgrades to water efficient equipment. WAVE is initially targeting the lodging industry.

The new software is expected to be a powerful tool for hotel engineers. It will estimate and allocate hotel water use, track historical water use and expense, compare current water use to prior and target uses, and evaluate the economics of measures to improve water efficiency. Six modules will cover all water uses such as plumbing fixtures, food preparation and service, laundry, housekeeping, pools, fountains, cooling towers, and landscape irrigation. Development of the software was guided by input from hotel engineers in workshops in four cities; the software is now being field tested in hotels. Plans are underway to adapt the WAVE software for use in federal office buildings.

WASTEWI\$E

On July 20, EPA Administrator Browner will be honoring the 282 companies who have signed on as

BUILDING AIR QUALITY ALLIANCE

EPA's Office of Radiation and Indoor Air is preparing to launch a new voluntary partnership program to help building owners and managers improve indoor air quality. With membership from EPA and key leaders in the indoor air quality (IAQ) field, including environmental and public health advocacy groups, trade associations, government organizations, and coalitions of IAQ industry groups, the Building Air Quality Alliance will help implement actions to improve IAQ which is vital to health, comfort, and productivity. Such measures include developing a ventilation system maintenance schedule,

VOLUNTARY PROGRAMS, CONT'D.

controlling pollutants such as pesticides and tobacco smoke, and making good indoor air principles part of standard operating procedures through market-based incentives.

Why does IAQ warrant a separate voluntary program? Research shows that people spend about 90% of their time indoors, and that the air within homes and buildings can be more seriously polluted than outdoor air in even the largest and most industrialized cities. EPA comparative risk studies have consistently ranked indoor air pollution, including secondhand smoke, radon, organic compounds, and biological pollutants, among the top four environmental threats to public health. The Building Air Quality Alliance is intended to catalyze action on this important public health concern. A participants' manual will be available by Fall 1994 which will outline the program and enlist the first Building Partners. EPA will coordinate the Alliance planning effort with other EPA voluntary programs that serve the same building customers as well as other federal IAQ efforts.

GREEN LIGHTS

Green Lights reports several new milestones on the road toward relighting America with energy-efficiency lighting:

- On April 1, the National Security Agency became the first federal agency in the intelligence community to become a Green Lights Partner.
- A 1994 Certificate of Distinction was awarded to the Southern California Gas Company, which competed surveys and upgrades at 70 of its facilities in less than one year and \$200,000 under budget.
- The number of Green Lights participants now stands at over 1,350.
- Participants have committed to upgrade a total of 4 billion square feet of facility space, up from 3 billion square feet in 1992. The total facility space committed is more than three times the total office

space of New York, Los Angeles, and Chicago combined.

- Over 430 participants have reported progress on lighting upgrades, with close to 18 percent of their total square footage currently being upgraded.

ENERGY STAR

Energy Star reports the availability of an Energy Star Fax Line, a 24-hour, computer-controlled service that provides up-to-the-minute information about Energy Star programs (Green Lights, Energy Star Buildings, Energy Star Computers, and Methane Programs) and ordering of information materials by mail or fax. The fax number is 202-233-9659.

33/50 PROGRAM

One of the earliest voluntary pollution prevention efforts, the 33/50 program is in the process of compiling profiles of participating companies that have achieved notable successes. Already available to the public are fourteen profiles of manufacturing firms with a range of product lines, from plastic thermos bottles to custom-printed circuit boards. Between 1988 and 1992, the companies featured in these 14 profiles have reduced their toxic chemical releases by a total of more than 17 million pounds. Details of how they did it are included in the profiles; call the TSCA Hotline at 202-554-1404.

WHERE TO CALL:

Building Air Quality Alliance	800-438-4388
Energy Star Computers	202-233-9114
Energy Star Buildings	202-233-9146
Global Climate Change Action Plan	202-233-9190
Green Lights	202-775-6650
Mobility Partners	202-260-1126
33/50 Program	202-554-1404
WasteWiSe	800-EPAWISE
WAVE	202-260-7288

"As we look ahead to the future of pollution prevention, we need companies large and small to act as innovators, as motivators, as leaders. Help us evaluate what works best, what doesn't work, what gets people on board, what challenges them to do their best to protect public health and our environment."

**—Carol Browner
EPA Administrator**

INTERVIEW WITH LYNN GOLDMAN



Dr. Lynn Goldman

Dr. Lynn R. Goldman assumed the position of EPA's Assistant Administrator for Prevention, Pesticides and Toxic Substances in October 1993. Previously, she served as the Acting Chief of the Division of Environmental and Occupational Disease Control in California's Department of Health Services. A pediatrician and epidemiologist, Dr. Goldman has published extensively in the areas of environmental epidemiology and the prevention of childhood lead poisoning. She holds master's degrees in Health and Medical Sciences from the University of California, Berkeley as well as an M.P.H. from Johns Hopkins University. Her M.D. is from the University of California, San Francisco.

What is your view of this Administration's commitment to a pollution prevention approach and what kinds of new initiatives or developments should we expect?

Most notable to me is that Administrator Browner has declared pollution prevention to be the foundation of all the work that everybody does in the Agency. Without inculcating that spirit in all our offices, we could never move to a true pollution prevention agenda at EPA. This commitment was reflected in the way the reorganization of the Office of Enforcement was carried out — very much with pollution prevention and a multi-media focus in mind.

Looking ahead, a major new development is the "Common Sense Initiative." Never before has there been a commitment by the Administrator and the entire leadership of the Agency to bring the program offices together to address problems with single sectors. This initiative will help us take a careful look at all the regulations that affect one sector, and work on improving our collection of data. I think it's going to have a major payoff for us — it's the only way we can learn how to move beyond our media-specific statutes and programs that sometimes don't allow

us to take care of the whole environment the way that we should. The recent doubling of the size of the Toxics Release Inventory and the planned expansions that will add facilities and collect information about chemical use will also be very important for expanding our pollution prevention efforts in the future.

In the past few years, EPA has launched a number of voluntary industry programs to encourage pollution prevention. How does this approach relate to maintaining a strong enforcement orientation?

Clearly our enforcement program and regulations should form a very strong floor for everybody — indicating what, at a minimum, EPA expects. Our voluntary programs should seek to move people beyond that. I think it's clear that voluntary partnerships help industry move forward in a more flexible and more creative manner. From our perspective, we need to coordinate our voluntary programs better — we still tend to focus on one problem at a time. If we play our voluntary programs well, they could end up being "laboratories" for us in the sense of developing new approaches and innovative ways of accomplishing environmental protection.

What are your legislative priorities? In your view, how could Congress best further the goals of pollution prevention and environmental protection?

EPA cabinet status is of very high priority, although it is stalled at present. My priorities on the legislative agenda are food and pesticide safety reforms — the reform of FFDCA [the Federal Food, Drug, and Cosmetic Act] and FIFRA [the Federal Insecticide, Fungicide, and Rodenticide Act]. I consider FIFRA, like TSCA, to be one of the primary pollution prevention tools that the Agency has at its disposal. The decision whether or not to register a pesticide, reregistration decisions, and new chemicals — these are the times at which the Agency has the most capability of preventing adverse consequences from

chemicals. Once there's been approval, once the factories have been built and production is underway, then you have a tremendous risk-benefit balancing act to do before any action is taken.

In FIFRA, we're trying to clean up the administrative procedures and respond to some problems in the pesticide registration system. Now, each pesticide application receives the same amount of attention, regardless of the risks it is likely to pose. We are proposing that lower risk pesticides receive a quicker review and more years of exclusive use of the data to provide a real economic incentive to the industry to produce safer pesticides.

We've also proposed a sunset provision for pesticide registrations, which is so important because science changes so frequently. Risk assessment is an iterative process. The science moves, risk assessment and policies move, testing guidances are going to change — we cannot look at a pesticide registration as being “in perpetuity.”

How is risk assessment connected to pollution prevention, in your view?

For some people in Congress, an ethic has developed that the use of risk assessment as a tool is the only way to manage risks. You take one problem at a time, do a risk assessment, then a cost-benefit analysis, and then you act. The pollution prevention approach is different. It says: if industry works more efficiently, they save money and prevent pollution, and prevent exposures and risks at the same time. This approach is not driven by risk assessment, and you don't have to argue about whether the researchers used the right model for the risk assessment. It's a win-win situation.

From your background in children's health and environmental protection, how do you see pollution prevention relating to children's issues?

In thinking about the health of children, prevention is the primary approach —

whether for immunizations or regular examinations or lead screening. Preventing pollution is so important for children, because they are often more exposed than adults and more susceptible to environmental pollutants, and because children are going to inherit the earth and deserve an environment that can sustain them. Children disproportionately live in poverty compared to adults, and live in communities where they are more likely to be exposed to environmental pollution. For this reason, environmental justice issues are also closely linked both to children's issues and to prevention.

Going back to the question on risk assessment, it's not necessary to have every piece of information before making a reasonable judgment to protect children's health.

Let me close with an example that underscores the importance of information for prevention. The Food and Drug Administration found that a number of epidemiological studies indicated a possible association between children taking aspirin during viral illnesses (flu, chicken pox) and developing Reye's syndrome. The studies certainly didn't prove cause and effect and there were no animal studies to corroborate it. So there was a lot of skepticism, particularly from the pharmaceutical industry, and it took the FDA about five years to require a label on aspirin bottles warning parents not to give aspirin to young children especially if they had influenza or chicken pox. The amazing thing was that as soon as that label went on, the Centers for Disease Control began receiving fewer and fewer reports each year of cases with Reye's syndrome. When I was a pediatric resident, I saw children who had Reye's syndrome who were in intensive care and nearly died. And now, just that label on the aspirin bottle has made the disease almost disappear.

“For some people in Congress, an ethic has developed that the use of risk assessment as a tool is the only way to manage risks. The pollution prevention approach is different. It's a win-win situation.”

TRANSPORTATION

RESOURCES

Implementing Effective Demand Management Measures: Inventory of Measures and Synthesis of Experience, (DOT-T-94-2, September 1993), U.S. Department of Transportation. Available from: Technology Sharing Program, U.S. DOT, Washington, DC 20590.

Curbing Gridlock: Peak-Period Fees to Relieve Traffic Congestion, Special Report 242 from the Transportation Research Board, examines methods of mitigating congestion problems. Available from: National Research Council, Office of News and Public Information, 2101 Constitution Avenue, NW, Washington, DC 20418, Tel: 202-334-3214. (Vol. 1: \$20, Vol. 2: \$40, Both: \$50).

ISTEA AND CAAA REINVIGORATE TRAFFIC DEMAND MANAGEMENT

Increasing concerns over air quality and traffic congestion have led to a wide-ranging search for alternatives to current transportation patterns. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Clean Air Act Amendments of 1990 (CAAA) both have created renewed interest in Transportation Demand Management (TDM). States must assure conformity between their transportation planning under ISTEA and their air quality plans under CAAA. The link between transportation and air quality is made even stronger by the requirement in CAAA that regions with the worst air quality commit to a 15 percent reduction in urban smog by 1996. Plans for achieving those reductions must be filed by November 15, 1994, and a failure to comply could result in the withholding of federal highway funding. TDM options receiving attention include the use of high occupancy vehicle (HOV) lanes, cashing-out parking, and congestion pricing.

HOV traffic lanes are restricted to vehicles carrying a minimum number of passengers, such as HOV-3 (three passengers). HOV lanes have been tried, but with limited success; the percentage of commuters sharing rides fell from 20 percent in 1980 to 13 percent in 1990. However, a recent study of California commuters suggests that public acceptance of HOV lanes may have increased enough to make them viable options for reducing the number of vehicles on the road. The survey, completed by researchers at the University of California, Davis, indicated that HOV lane conversion was preferred over other TDM alternatives, such as congestion pricing, monthly parking fee, and a higher gas tax. The researchers believe that increasing public concerns over air quality and traffic congestion contributed to the shift in attitudes.

Under a cash-out parking program, an

employer who pays for employee parking also must offer the option of an equivalent cash payment or transit pass. This eliminates the current subsidy for employees who drive to work. Under a cash-out program, employees who do not drive are not disadvantaged. Further, those who do drive have an incentive to choose an alternative means of commuting and recognize a financial benefit.

As part of the Global Climate Change Plan, the Administration has introduced a cash-out parking proposal to modify the tax code under which employer-provided parking is currently tax-free, up to a value of \$155 per month. Under the proposal, if the employer did not offer a cash or transit option, then the parking provided to employees would be taxable in its entirety.

Congestion pricing seeks to alleviate traffic congestion by imposing user fees on road use to encourage carpooling, alternative means of transportation, or alternative hours of driving. Typically tolls are imposed, or increased, during periods of peak demand during the day, usually commuting hours. Automated vehicle identification techniques could make toll collection possible without motorists stopping. Interest in congestion pricing has been limited although several areas in California are experimenting with the possibility.

If congestion pricing were combined with a cash-out program, employees would receive toll vouchers that could be converted to cash. Employees then could carpool and save money, or find alternative means of transportation and keep the money.

A new study by the Transportation Research Board finds that peak-period fees averaging 10-15 cents per mile (or \$2-3 per daily round trip) would reduce total peak-period travel by 10-15 percent, and cut average commute times by about 20 percent. According to a Department of Transportation survey of TDM practices, effective TDM employer programs usually employ multiple measures, offering time or financial advantages to commuters who do not drive alone. Parking price and availability are critical to the decision on how to travel.

TRANSPORTATION, CONT'D.

CHATTANOOGA CHOO CHOO CHOOSES ELECTRIC BUSES

The Chattanooga Choo Choo may not be the most famous transportation in Tennessee much longer. The City of Chattanooga has begun using state-of-the-art electric buses as part of its downtown shuttle fleet. The Chattanooga Area Regional Transit Authority (CARTA) currently has eight electric buses in service, with nine more on order. The first two buses were manufactured by Specialty Vehicle Manufacturers (SVM), a California company. The rest are being manufactured by Advanced Vehicle Systems, a company set up in Chattanooga as a joint venture with SVM.

In addition to a decrease in pollution, the electric buses save on operating costs. Although the initial cost is 10 to 15 percent more than comparable diesel buses, the electric buses cost only about five cents per mile to run compared with 18.5 cents for diesels. In addition, long term maintenance for the new buses is expected to be half that for the diesels.

The buses are popular with passengers because they have low floors which make making entering and exiting easier. They are quieter and smoother, and they operate more cleanly than the buses they replaced. Drivers like the new buses because they are easy to handle and can accelerate faster than diesel vehicles.

CARTA is committed to the new tech-

nology and has earmarked \$20 million for the construction of three parking facilities and other infrastructure to support the use of the downtown shuttle fleet. In addition, CARTA has set up the non-profit Electric Vehicle Technology Institute in Chattanooga to help design and create better vehicles.

"We have created a living laboratory," said CARTA chairman Rick Hitchcock. Rather than simply use the vehicles that are available, CARTA is involved in designing the vehicles it needs, and modifies the specifications based on its experience. Hitchcock said that CARTA is currently testing an advanced battery system, two types of AC motors, and two types of controller systems for the buses.

CARTA belongs to the Southern Coalition for Advanced Transportation (SCAT), a coalition of over 40 manufacturers, utilities, governments, and universities committed to electric transportation. SCAT coordinates research activities and promotes the use of electric vehicles through public demonstrations. In order to help build public support for electric vehicles, SCAT recently established the Electric Vehicle Research Center in SCITREK, a science and technology museum located in Atlanta.

Hitchcock believes that as new developments in batteries, motors, and charging systems are put into use, "electric buses will be able to do everything a diesel bus can do, and do it better, cheaper and cleaner."



MR. PAUL'S POLLUTION PREVENTION IDEA

In response to tough new federal air quality requirements, New Jersey plans to require employers of over 100 people to cut back on solo workplace commuting by 25%, presumably through increased carpooling. At a cost of \$350 million annually, the plan would reduce air emissions by 3 percent.

Stephen Paul, a physicist at the Princeton Plasma Physics Laboratory (PPPL) has another idea for New Jersey. He proposes CNG retrofits for the heaviest polluting cars on the road. CNG (compressed natural gas) burns cleaner and pollutes less. Paul estimates that his plan could reduce New Jersey's mobile emissions by 11 percent.

Key to the success of the program is converting vehicles that are heavy polluters but in good condition. Paul has proposed a pilot demonstration program to state regulators. For more details he can be reached at 609-243-3781.



CARTA's fleet of electric vehicles includes a 31-foot bus and a 22-foot shuttle.



EPA NEWS

ACCOUNTING

Stakeholders' Action Agenda: A Report of the Workshop on Accounting and Capital Budgeting for Environmental Costs (EPA 742-R-94-003) and Project Updates on the Management Accounting and Capital Budgeting for Environmental Costs Project are available through the Pollution Prevention Information Clearinghouse, 202-260-1023.

NICE³

Two-page proposals from state agencies are being accepted until Oct. 15, 1994. The FY 1995 solicitation is expected to be available on Nov. 1, 1994.

ACCOUNTING PROJECT RELEASES ACTION AGENDA

EPA has released an Action Agenda to promote full cost environmental accounting by business. The agenda identifies concrete steps the business community, accounting and other professional societies, academia, and governments need to take to promote full cost accounting.

As long as businesses treat environmental costs as overhead and thereby succeed in hiding them from management decision-making, businesses will not see the financial advantages of preventive technologies and practices. Better accounting practices will help businesses identify and allocate direct and indirect environmental costs, including potential future liabilities, to the products and processes responsible for them.

A prospective rather than retrospective tool, full cost accounting helps integrate environmental cost information into decisions on product design, costing and pricing, capital budgeting, performance evaluation, and managers' compensation, among others. Seen as a way to link environmental protection and economic development, the Agenda is a product of several focus group meetings and an experts workshop co-sponsored by the Business Roundtable, the U.S. Chamber of Commerce, the Institute of Management Accountants, American Institute of Certified Public Accountants, AACE International, (Association for Total Cost Management), and EPA's Design for the Environment Program.

The Action Agenda recommends action on four fronts: (1) further clarifying terms, concepts, and the roles of key stakeholders; (2) creating and sustaining internal and external management incentives; (3) promoting education and outreach and developing and distributing guidance; and (4) developing and disseminating tools, methods, and management systems.

For more information on the project, contact Dr. Martin Spitzer, 202-260-4342.

NICE³ AWARDS \$3.4M

Continued from page 1

► **Altex Technologies Corp., Weyerhaeuser Corp., and J.C. Steele, Inc.** of Georgia, \$408,033, to utilize the Advanced Mineral Calciner to recover lime from spent lime waste generated by the pulp and paper industry. The recovered lime can be reused by the pulp and paper industry or secondary markets such as sugar refining, and soda production.

► **Erving Paper Mills, Inc.** of Massachusetts, \$425,000, to modernize the tissue paper manufacturing process to increase the efficiency of paper recycling while eliminating chlorine bleach.

► **Westinghouse Electric Corp.** of Maryland, \$399,398, to develop a solid-state radio frequency power source to make highly efficient lighting work on a demonstration scale.

► **Brush Wellman, Inc.** of Ohio, \$425,000, to replace solvent vapor degreasing and a wash tank process to clean beryllium alloyed materials using CO₂ under very high pressures and temperatures as the cleaning solvent.

► **Pegasus Technologies Corp.** of Ohio, \$100,000, to adapt an existing off-line neural (computer) network control unit to optimize combustion control settings to minimize NO_x, SO_x and CO₂ emissions and improve power plant thermal efficiency.

► **Techmetals, Inc.** of Ohio, \$316,500, to demonstrate the application of an engineered insulating layer to the inside of injection molds for plastics. This proposed technology improves the surface appearance directly from the mold and reduces the number of processing steps.

► **Osmotek, Inc.** of Oregon, \$395,194, to remove water from tomato puree by direct osmosis concentration. This new process will replace the common industry practice of using evaporators powered by natural gas or diesel fuel.

To find out more about NICE³ grants, contact your state energy office or the Department of Energy's Golden Field Office at 303-275-4728.



CASE STUDY

DELUXE'S PRINTWISE™ ELIMINATES VOCs FROM LITHOGRAPHIC PRINTING PROCESS

One of the nation's largest printers, the St. Paul-based Deluxe Corporation, has developed a new printing system that includes a water-washable lithographic ink and a press cleaning solution that is free of volatile organic compounds (VOCs). Deluxe began using the new printing system, called Printwise, late last year in its more than 50 printing plants and has already reduced its VOC emissions by more than 50 percent. Deluxe also recently began marketing the Printwise system to other printers.

Key to the Printwise system is that it eliminates petroleum-based solvents and their related VOCs from the lithographic printing process. These solvents — generally consisting of 100 percent VOCs — have traditionally been used to clean ink from press components. The resulting "press washes" are considered by EPA as a significant source of VOC emissions. EPA's proposed Control Technique Guidelines call for press washes with VOC levels below 30 percent by weight. Deluxe believes its Printwise system is an effective response to the emission challenges facing the industry.

The Printwise ink is 100 percent vegetable oil-based and matches or exceeds conventional inks in press and printing performance. Most important, the ink includes a solubility conversion mechanism that enables it to be cleaned with a simple, VOC-free water solution.

Breakthrough in Development

Deluxe's breakthrough resulted when corporate scientist Tom Pennaz began regarding lithography as a system in which ink and solvents act as interdependent, not independent, elements. Pennaz next developed a solubility conversion mechanism that he incorporated into

traditional ink formulations. Acting as a "key," the solubility mechanism locks the oil-based Deluxe ink during printing but can be unlocked and converted to a water-soluble state during cleanup. As a result, although the Deluxe ink remains truly lithographic, it requires a water-based, VOC-free solution for cleanup.

Other benefits of the system are that it uses existing printing technology and requires minor procedural adjustments. In addition to cutting VOC emissions, other benefits of the Printwise system include eliminating hazardous air pollutants, fire

hazards, and storage at printing plants related to the use of solvents. Because the solubility conversion mechanism can be reversed, ink can be

"Remarkably, our scientific team found a way to dissolve high performance vegetable oil based ink with a simple water solution. Now water and oil do mix."

**— Tom Rifkin,
Director of
Communications
Deluxe Corporation,
Ink Division**

removed from waste water by filtration. Deluxe is developing these waste water treatment methods.

"The key points are that Printwise will enable printers to comply easily with tougher environmental regulations without compromising press performance," stresses Mike Hangge, vice president of Deluxe's ink division. "It will also allow print buyers to make a strong environmental statement without sacrificing print quality. We believe consumers will begin to look for the Printwise logo as a sign of environmentally responsible printing."

Deluxe will begin marketing inks for commercial sheetfed, business forms, and non-heatset web applications.

For more information, contact Tom Rifkin, Deluxe Corporation, 612-483-7500.



DESIGN FOR THE ENVIRONMENT

EPA's Design for the Environment Printing Project is currently evaluating the risk, cost, and performance of lithographic blanket washes. Alternative blanket wash systems, such as the Printwise™ system developed by Deluxe Corporation, provide printers with an opportunity to reduce risk and prevent pollution in the workplace. Beginning this summer, DfE will be demonstrating the performance effectiveness of alternative blanket washes at volunteer printing facilities across the country. A Cleaner Technologies Substitutes Assessment for Lithographic Blanket Washes will be available in late 1994, with subsequent information on products geared towards printers to follow in early 1995. (Contact: Stephanie Bergman, 202-260-1828.)

GREENING THE WHITE HOUSE



"I want to make the White House a model for other federal agencies, for state and local governments, for business, and for families in their homes."

—President Clinton
April 21, 1993

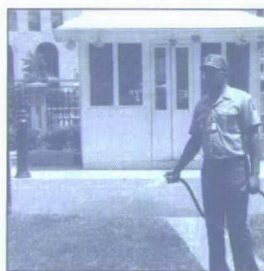
Anounced in April 1993 as part of President Clinton's Earth Day Address, and a year in the planning, the Greening of the White House is well underway with some 50 actions already completed to make the nation's most symbolic home a showcase of environmental design. Many more actions will be undertaken in the next phases of the project.

Over the past year, an Interagency Task Group, with the advice of 18 energy and environmental organizations, conducted feasibility studies and developed recommendations. An energy audit was performed by a Department of Energy team with support from the National Laboratories. An environmental audit led by EPA focused on environmental compliance,

pollution prevention, solid waste, and management systems. A third multidisciplinary volunteer team of 100 experts in architecture, design and engineering, building operations, and environmental concerns was assembled by the American Institute of Architects with support from the National Wildlife Federation's Corporate Conservation Council.

The Greening the White House is preparing an extensive outreach and education component, including video materials, to highlight steps that all homeowners and business people can take in their homes and offices. Below are a few of the steps being taken in the comprehensive plan to green the White House.

1600 BLK PENNSYLVANIA



Mid-day watering is on the way out.

◀ WATER CONSERVATION

The White House, like the rest of the country, can save money and precious water resources by practicing good water management. Water conservation devices are being installed in restrooms, kitchens, and other areas. For landscaping water uses, the strategy is to adjust or replace sprinkler heads, install moisture sensors to measure and evaluate water use, and continue watering in the early morning hours as much as possible. Over the long term, the strategy is to have "cascading" uses for water, i.e., multiple uses for each gallon of water, such as using old drinking water as lawn water.

▶ PEST MANAGEMENT

The White House complex is establishing a ground maintenance plan to reduce outdoor pesticide and fertilizer use, adjust mowing practices, improve irrigation, and reduce runoff. Native plants will be used more extensively on the grounds and in floral displays. Integrated Pest Management Plans will be implemented to reduce the amount and toxicity of pesticides used; grass cutting blades will be adjusted to optimal height and mulching mowers will continue to be used to self-nourish the lawn.



A no smoking policy is in effect in the Residence, East and West Wings, and the Old Executive Office Building.



GREENING THE WHITE HOUSE, CONT'D.

► ELIMINATING CFCs

Renovating HVAC (heating, ventilating, and air-conditioning) systems is a good target because these systems are big energy users and the refrigerants typically used are a source of ozone-depleting CFCs. Plans for renovating the HVAC system in the Executive Residence have been approved; the three-year project will eliminate CFCs, centralize cooling operations, install small efficient chillers for part-load requirements in the spring and fall, and replace electric reheat functions with hot water coils. A more comprehensive HVAC system upgrade will require Congressional authorization and may take seven years to complete.



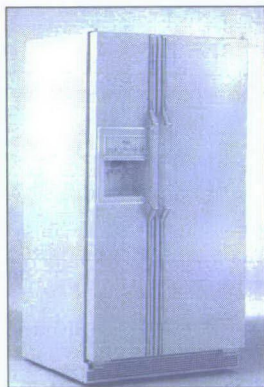
▲ INSULATION

Before: Windows in the Old Executive Office Building were scheduled to be replaced with single-paned windows.

After: The Greening project changed the specifications to double glazings in order to increase the thermal performance of the building.

► REFRIGERATION

White House refrigerators have been replaced with "Golden Carrot" refrigerators. "Golden Carrot" refers to the design competition that recently resulted in the commercial production of super-efficient refrigerators that are designed to use 25-50% of the energy used by existing models. No CFCs are used in the refrigeration cycle or foam insulation.



Consolidation of the White House and OEOB painting facilities will allow for safer and more efficient operations. Other initiatives: using latex paints that do not contain (or emit) volatile organic compounds, and the reuse of cleaning solvents in a closed loop to prevent volatilization, spillage, or discharge.



► ENERGY EFFICIENT LIGHTING

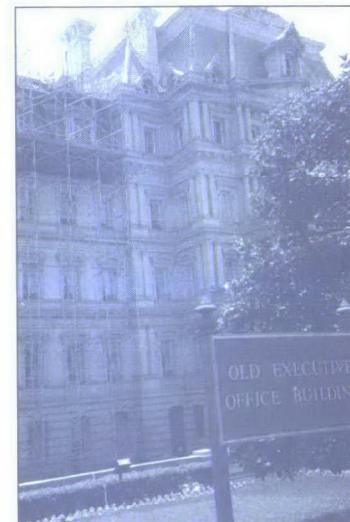
Energy efficient lighting is an obvious choice for greening the White House. From table lamps to fluorescent office lighting, the White House is upgrading fixtures and bulbs to the most energy-efficient designs, yielding from 20 to 75 percent energy savings per action. Because they reduce electricity bills, these upgrades pay for themselves in six months.



THE WHITE HOUSE IN ACTION:

- Complex consists of East and West Wings, Executive Residence, Old Executive Office Building
- One half million square feet of office space
- Office and home of the President and his family; office of the Vice President
- 1.2 million visitors annually to museum spaces, public tours
- Three restaurants (two fast food, one four-star)
- Ceremonial spaces, special events rooms, theater
- 18-acre botanic garden, tennis courts, swimming pool, running track
- Maintenance facilities, laundries, paint shop
- Four agencies manage operations: the General Services Administration, National Park Service, Office of Administration, Executive Residence staff.

For more information on the Greening the White House project, contact: Green Development Services, Rocky Mountain Institute, 303-927-3851



CALENDAR

TITLE	SPONSOR	DATE/LOCATION	CONTACT
32nd Annual Solid Waste Exposition	Solid Waste Assn. of North America	August 1 - 4, 1994 San Antonio, TX	301-585-2898
Pollution Prevention Training Workshops	Texas Natural Resource Conservation Commission	Aug. 4 - Corpus Christi, TX Sept. 21 - Dallas, TX Oct. 5-6 - S. Padre Isl., TX Nov. 15 - Houston, TX	512-475-2218
Third Annual Air Force Worldwide Pollution Prevention Conference and Exhibition	Air Force Center for Environmental Excellence	Aug. 29 - Sept. 1, 1994 San Antonio, TX	703-247-2580
Emerging Clean Air Technologies and Business Opportunities	EPA, SEDESOL, Environment Canada	Sept. 26 - 30, 1994 Toronto, Canada	819-953-8717
International Pedestrian Conference	GO Boulder	Sept. 26-28, 1994 Boulder, CO	303-441-4260
Sustainable Transportation Symposium	Northeast Sustainable Energy Association	Oct. 3-5, 1994 Boston, MA	413-774-6051
Turf, Ornamental, and Structural Integrated Pest Management	EPA Region 1	October 13, 1994 Marlborough MA	Allan Christensen 617-565-4968 617-565-4939 (fax)
1994 Rhode Island P2 Conference and Expo	Narragansett Bay Comm. and Rhode Island Dep't of Env. Mgmt.	Oct. 19-20, 1994 Providence, RI	401-277-6680
Changing the Course of Production	P2 Consortium of New England Universities / EPA / DOE	October 22-23, 1994 Cambridge, MA	617-367-8558 617-367-0449 (fax)
1994 Poultry Waste Symposium	USDA Cooperative Extension System	Oct. 31-Nov. 2, 1994 Athens, GA	Richard Reynells 202-720-4087 202-720-7714 (fax)

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