



Spotlight on Waste Prevention

EPA's Program To
Reduce Solid Waste at
the Source



**Prevent Waste —
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The environmental benefits of recycling are well known. Many businesses, governments, and households are collecting discards for recycling, and are recovering more materials than ever before. In fact, over one-fifth of the municipal solid waste generated in our country is currently recycled or composted.

Despite progress in recycling, however, Americans are still generating too much waste. Every day, on average, each individual discards about four pounds of material. These discards burden both the environment and our economy. Even recycling, which adds major economic and environmental benefits, creates economic and environmental costs.

The best approach to our solid waste challenge is to cut the creation of waste in the first place. Waste that is not created does not have to be managed later. That's why waste prevention (reducing and reusing) is the ideal solid waste solution.

Source reduction, also known as waste prevention, is the preferred solid waste tactic, followed by recycling. Waste that cannot be prevented or recycled can be incinerated or placed in a landfill.

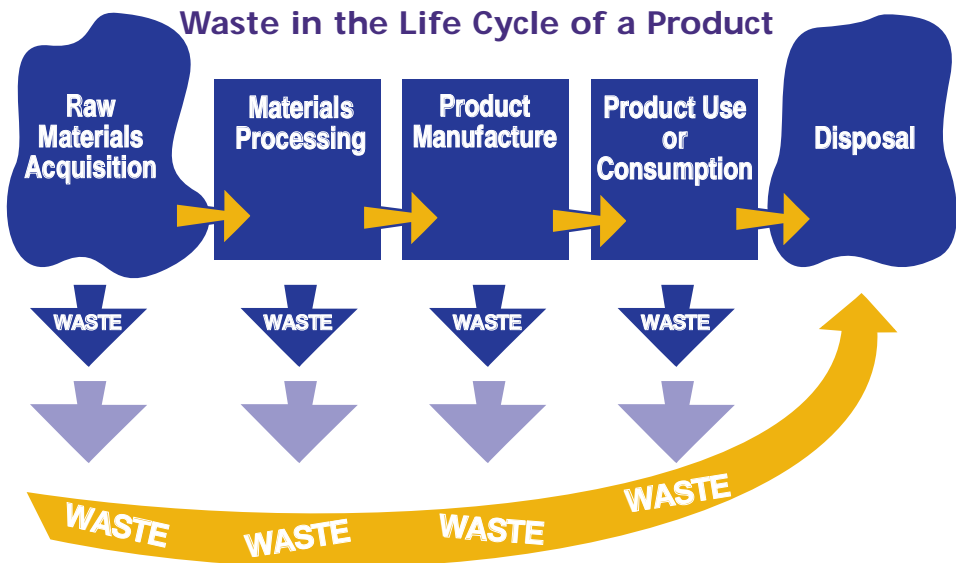


GETTING AT THE SOURCE

Waste prevention involves altering the design, manufacture, purchase, or use of products and materials to reduce the amount and toxicity of what gets thrown away.

Waste prevention is sometimes called “source reduction” because it reduces or eliminates pollution at the *source*. Thus, donating an unwanted computer to a charity (rather than setting it out for disposal or recycling its parts) is waste prevention. So is photocopying on both sides of a sheet of paper. Altering material specifications so that fewer hazardous constituents are used in a manufacturing process also is waste prevention.

Waste prevention activities help shift the nation’s emphasis from pollution cleanup to pollution *avoidance*. In particular, waste prevention plays a key role in reducing pollution throughout the life cycle of a product (see chart below).



Opportunities to reduce waste exist throughout a product’s life cycle.

BENEFITS OF WASTE PREVENTION

Preventing waste has many positive effects on the environment:

- **Conservation of natural resources.** By reducing the amount of raw materials that are used in manufacturing, waste prevention conserves resources such as metals, water, and petroleum.
- **Reduced environmental impact from raw material extraction.** Reducing the use of raw materials in manufacturing minimizes the environmental impacts associated with mining, drilling, extracting, processing, and transporting these raw materials.
- **Reduced energy usage and pollution from manufacturing.** Because waste prevention prolongs the lives of materials and products, it reduces the need to manufacture new goods or reprocess materials, thereby saving energy and avoiding pollution.
- **Reduced burden on landfills and combustors.** Preventing waste helps extend the lives of existing solid waste disposal facilities and helps avoid disputes over siting new facilities.

Preventing waste also saves money. The economic benefits of preventing waste include:

- **Reduced waste management costs.** Waste prevention saves money by lessening the amount of waste that must be collected and processed. It also reduces the costs associated with siting and operating management facilities such as landfills, combustors, and materials recovery facilities.
- **Savings in material and supply costs.** Reusing or prolonging the lives of products means that these items don't need to be purchased as frequently. Savings in avoided purchasing costs can be significant, especially for companies and government agencies.
- **Savings from more efficient work practices.** Waste-reducing work habits (such as using electronic mail in place of paper) can often save time as well as money.
- **Potential revenues from selling unwanted or reusable materials.** Through a variety of venues, from waste exchanges to yard sales, it is often possible to earn revenues from the sale of goods that are no longer needed and that would otherwise become waste.

WAYS TO PREVENT WASTE

PACKAGING REDUCTION. Many kinds of organizations are reducing the packaging they use to transport and contain products and materials, as well as the packaging they receive through shipments. For example, some companies are “lightweighting” packaging by reducing its thickness or shipping merchandise in reusable or returnable containers. Businesses, agencies, organizations, and individuals alike can practice waste prevention by purchasing products in bulk and those with reusable or minimal packaging.



PAPER REDUCTION. Paper is still the most abundant material in the municipal solid waste stream, but people everywhere are reducing paper through activities such as copying on both sides of a piece of paper, using electronic and old-fashioned bulletin boards to distribute information, and paring down mailing lists.

PRODUCT AND SUPPLY REUSE. Replacing disposable items with long-lasting, reusable products can break the frequently expensive cycle of discarding and reordering. Hundreds of items, from file folders to air filters, can be reused.

EXCHANGE, SALE, OR DONATION OF UNNEEDED GOODS. Through waste exchanges, organizations can trade, sell, or give away goods or materials that would otherwise become waste. Unwanted materials and surplus inventory also can be donated to educational and charitable organizations.

HAZARDOUS CONSTITUENT REDUCTION. Many products are available with few or no hazardous constituents, including inks, glues, paints, solvents, and cleaning products.



USE AND MAINTENANCE OF DURABLE EQUIPMENT AND SUPPLIES. High-quality, long-lasting supplies and easily repairable equipment stay out of the waste stream longer. Although such items can cost more initially, these expenses can be justified by lower maintenance, disposal, and replacement costs.



“ONSITE” COMPOSTING OF YARD TRIMMINGS.

“Grasscycling” (leaving grass clippings on the lawn) and onsite or backyard composting keeps yard trimmings out of the waste stream. Using compost also returns valuable nutrients to the soil.

Waste Prevention Pays for Business and Industry



Waste prevention ties in nicely with the economic climate of the 1990s. Businesses are reviewing their operations with a sharp eye towards cutting costs in purchasing and operations, while maintaining or improving the level of service they provide. These changes, in turn, can increase competitiveness and profitability. Waste prevention serves all of these goals. A company that practices waste prevention also can improve customer relations by demonstrating its concern about the environment. In addition, a waste prevention ethic can enhance employee relations by involving staff in an organization's environmental program. The following are just a few of many noteworthy examples of pollution prevention successes being achieved by some of America's largest companies:

- In 1992, **DuPont** and its customers reused 180 million pounds of wood pallets, boxes, and other packaging materials—nearly 25 percent of the total amount of packaging used by the company that year. This program saved DuPont approximately \$3 million in 1992.
- Over the past four years, **Martin Marietta** has saved 13 million sheets of computer printout paper and over \$4 million in supply costs by encouraging employees to edit documents electronically. The company has also eliminated paper timecards and travel expense forms at several Northeast facilities.
- **Johnson & Johnson**, a large healthcare products company, has saved an estimated \$2.8 million since it instituted a program in 1988 to reduce packaging waste. The program helped the company reduce solid waste generation by over 2,600 tons annually.
- **Sprint**, the long distance telephone company, has launched an innovative customer billing system that prints two-sided telephone bills. Sprint expects to reduce paper consumption by more than 450 tons annually when the new system becomes fully implemented.

- In 1993, **Quebecor Printing's** 506,000-square-foot printing plant in Mount Morris, Illinois, saved \$14,000 by repairing and reusing shipping pallets. A refurbished pallet is only 20 percent of the cost of a new one. The company also ships unused and scrap plastic wrap back to vendors for reuse.

Many small- and medium-sized businesses are also finding ways to prevent waste:

- **Boston's Park Plaza Hotel & Towers**, one of several properties owned by the Saunders Hotel Group, eliminated over two million plastic bottles from its trash by switching to the use of liquid pump dispensers for shampoo and soap in guest rooms. The hotel was able to upgrade the amenities it provides to guests with the money saved by this waste prevention tactic. The company's other hotels also switched to reusable dispensers based on the Park Plaza's success. In another innovative waste prevention move, the hotel's housekeeping staff came up with the idea of making kitchen aprons from stained linen tablecloths that otherwise would have been discarded.



Photo courtesy of **Pallet Enterprise** magazine.

- **Asbury Park Press**, a New Jersey multi-media print and broadcast communications company, has realized annual savings of over \$38,000 by switching to cloth rags supplied by a laundry service instead of using disposable ones. Using about 120,000 cloth rags each year, the company is also avoiding the costs to dispose of single-use rags.



Photo courtesy of Secondary Materials & Recycled Textiles Association.



- **Larry's Markets**, a grocery chain in the Seattle, Washington, area, encourages customers to reuse grocery bags. The company buys approximately five million large-size grocery bags per year. If all of these bags were discarded, they would generate approximately 500,000 pounds of waste. Larry's Markets reduced bag waste by approximately 15 percent in 1993 by giving free reusable bags to customers who signed a bag reuse pledge.
- **Rosenberger's Dairies** of Hatfield, Pennsylvania, supplies over 220 schools with refillable eight-ounce plastic milk bottles for use in their lunchrooms. The bottles can be refilled up to 100 times before being recycled and prevent 90,000 milk bottles from becoming waste each day.

Waste Prevention Pays for Government



Agencies at all levels of government across America are making waste prevention a top priority. In addition to saving on purchasing and waste disposal costs, municipalities can use waste prevention activities to help reduce the cost burdens associated with collecting, hauling, and processing waste. They also can avoid or postpone the need to expand existing disposal or recycling facilities, or to site new ones.

One way governments can encourage waste prevention is through “unit pricing” or “pay-as-you-throw” programs. In the 1,600 communities with unit pricing in the United States, residents pay for trash service based on the volume or weight of waste they put out for collection, thus providing an economic incentive to reduce. Some communities that have implemented unit pricing have significantly reduced waste generation.

Specific examples of government waste prevention efforts include:

- **Memorial Hospital in Hollywood, Florida**, has slashed its costs for batteries used in specialized portable cardiac monitoring equipment by 25 percent thanks to a longer-lasting substitute battery. By switching from mercury-containing batteries to a zinc-air replacement, the hospital also reduced the volume of batteries requiring disposal (and the amount of hazardous constituents entering the waste stream). Environmental officials estimate that during its first year alone, this program eliminated 342 pounds of mercury from the county’s waste stream.
- **The Village of Hoffman Estates, Illinois**, cut waste by 30 percent after the township adopted a “pay-as-you-throw” program for trash collection.

- In **Seattle, Washington**, residents cut waste generation from an average of 3.5 waste cans to 1.7 cans per household per week after unit pricing was launched.
- In rural **Itasca County, Minnesota**, the county's road and bridge department started using reusable air filters instead of disposable filters in its garages. The county is saving \$4,700 in purchasing costs annually and has virtually eliminated air filters as a component of the county's waste stream. While more labor is required to clean the reusable filters, money is saved by avoiding the costs to purchase, store, and dispose of the single-use type.
- Through **New York City's** Partnership for Waste Prevention, the city's Department of Sanitation is helping hundreds of dry cleaners, grocery stores, restaurants, and hotels in the city prevent waste. Dry cleaners are accepting used clothes hangers for reuse, thereby diverting an estimated 750,000 hangers from landfills. Another partner, NYNEX, the regional telephone company, reduced the Manhattan white pages by 100 pages through reformatting and prevented the unnecessary use of 107 tons of paper.
- *Break the Paper Chain* is the slogan for **EPA's** own waste prevention campaign. Through the Paper-Less Office Campaign, in 1994 EPA employees reduced waste at photocopiers by 16 percent and adopted waste prevention activities such as purging mailing lists, maintaining centralized files, and disseminating memoranda and publications electronically. One of the ways the Agency has implemented this effort is to make many publications available electronically through the Internet.



- The **U.S. Department of Defense** prevents waste by selling surplus items that are not reused or recycled by the various branches of the military. Tents, computers, furniture, shoes, and cooking utensils are but a few of the many items that are routinely sold to the general public. These surplus sales not only prevent waste, but they also generate revenues. In 1993 alone, the Defense Reutilization and Marketing Office saved taxpayers almost \$3 billion through these surplus auctions.
- The hospital at the **National Naval Medical Center** in Bethesda, Maryland, among the 10 largest in the United States, runs a monthly reuse store where used office supplies such as file folders, paper clips, and rubber bands are redistributed from offices with excess supplies to those that need them. A “New Products Committee” is also considering a variety of source-reduced products, such as mattresses with built-in rather than disposable foam pads, and reusable rather than disposable bed pans.
- The **U.S. Department of Energy’s Grand Junction Project Office (GJPO)** in Colorado has significantly reduced its paper waste by using electronic mail. For many years, lengthy paper copies of administrative bulletins were distributed to nearly 800 employees on a weekly basis. Now these documents are issued to approximately 50 office support personnel electronically, saving nearly 154,000 sheets of paper annually. In addition, GJPO’s printing costs have dropped over \$9,000 to just \$624 annually. Estimated labor costs for distribution have also dropped substantially, from approximately \$1,900 to \$120 annually.



Waste Prevention Pays for Consumers



At the consumer level, smart shoppers know that saving money and protecting the environment can go hand in hand. Examples of potential savings for consumers include the following:

- Consumers living in communities where unit pricing is practiced quickly discover that waste prevention can reduce their trash bills. They only pay for the trash they create, which can lower their monthly bills from a flat fee pricing structure.
- Consumers can save money and reduce waste on ordinary household products when they buy reusable, refillable, or rechargeable products, or purchase items in bulk quantities. Items such as reusable utensils and dishes, laundry detergent concentrates, and rechargeable batteries can save money through avoided purchases, packaging, and trash disposal costs.
- Borrowing rarely used items from a friend or renting them can save consumers the cost of purchasing these goods and, eventually, prevent their disposal in a landfill or combustor.
- In one year, 300 households in Madison, Wisconsin, prevented 184,000 pounds of yard trimmings (about 620 pounds per household) from entering their city's waste stream by practicing backyard composting. They avoided the need to purchase lawn refuse bags and produced a valuable compost product for use on their lawns and gardens.



EPA Is Helping the Waste Prevention Effort



EPA encourages waste prevention by making it the very top priority in its hierarchy of solid waste options. To help demonstrate both the environmental and economic opportunities inherent in waste prevention, EPA has launched a new initiative called Waste Prevention Pays. The initiative has five key goals:

- Help companies prevent waste.
- Prevent waste in federal agencies.
- Help communities prevent waste.
- Bring the waste prevention message home to citizens and consumers.
- Make waste prevention a better understood and more tangible environmental tactic.

EPA has taken a number of steps to achieve these goals, as described below.

To help businesses and industry prevent waste and cut costs for a better bottom line, EPA developed a voluntary,

nonregulatory initiative called the *WasteWiSe Challenge*. In addition to helping companies generate less waste, the program asks businesses to collect materials for recycling and to buy or manufacture recycled-content products. More than 350 companies representing America's leading businesses signed on to WasteWiSe as members in the program's first year. WasteWiSe companies commit to identifying and implementing three





significant waste prevention actions, among other requirements. In addition, several EPA documents on business waste prevention are available. (See the reference section on pages 16-17 of this booklet.)

To encourage waste prevention in federal agencies, EPA is helping these agencies implement the President's Executive Order to establish waste prevention programs and to buy environmentally preferable products and services. EPA's own in-house waste prevention effort, the Paper-Less Office Campaign, is dramatically reducing the Agency's use of paper. EPA also participated in an environmental audit of the White House that identified opportunities to prevent waste as part of the President's commitment to make the White House a national environmental showcase.

To help local communities prevent waste, EPA has developed a variety of technical assistance programs and tools. One such tool is a comprehensive guidebook on unit pricing that helps communities decide if an incentive-based waste management program is right for them. In addition, EPA is developing tools to help communities learn more about waste exchanges, which collect and repair such items as office furniture, equipment, building supplies, and surplus business materials for reuse. EPA also is helping to document the benefits and costs of backyard composting, develop educational materials, and train composting experts to conduct workshops for communities interested in establishing such programs.

To bring the waste prevention message to consumers, EPA is providing outreach tools including handbooks, newsletters, museum

exhibits, and public service announcements. (See the reference section at the end of this brochure.) EPA also assisted the Federal Trade Commission in developing guidelines for manufacturers to provide consumers with accurate information about the environmental impacts of their purchasing decisions. The guidelines help consumers determine if environmental claims on packages are valid.

To make waste prevention a more tangible tactic, EPA is working with a group of experts to make progress on ways to measure reductions in waste and determine the effect of waste prevention initiatives. By arriving at more consistent ways to measure these factors, it will be easier for everyone to determine the success of waste prevention efforts.



“Reuse stuff today...Reduce garbage tomorrow” is the theme of a National Audubon Society public service campaign promoting waste prevention.



EPA Information on Waste Prevention



To order the following free EPA documents on waste prevention, call the RCRA Hotline at 800 424-9346 or TDD 800 553-7672 for the hearing impaired. In Washington, DC, and outside the United States, call 703 412-9810 or TDD 703 412-3323:

- ***Business Guide for Reducing Solid Waste*** (EPA530-K-92-004). This comprehensive, practical guide is designed to help businesses assess the types and amounts of solid waste they generate and identify cost-effective waste prevention strategies.
- ***Waste Prevention Pays Off: Companies Cut Waste in the Work Place*** (EPA530-K-92-005). This collection of brief case studies describes how companies and municipalities have cut costs by preventing waste.
- ***Waste Prevention—It Makes Good Business Sense!*** (EPA530-F-93-008). This brochure summarizes the benefits of preventing waste in business and industry.
- ***WasteWiSe: EPA's Voluntary Program for Reducing Business Solid Waste*** (EPA530-F-93-018). This booklet explains the goals, structure, and benefits of WasteWiSe, an EPA voluntary program that assists businesses take cost-effective actions to reduce solid waste. It also explains what the membership requirements are and how companies can join the program. The

WasteWiSe program also offers other helpful information.

- ***Consumer's Handbook for Reducing Solid Waste*** (EPA530-K-92-003). This booklet suggests simple steps that people can take to reduce the amount and toxicity of trash. It offers practical waste prevention tips, including reusing products and packaging, choosing nontoxic products, and maintaining and repairing durable products.
- ***Pay-As-You-Throw: Lessons Learned About Unit Pricing*** (EPA530-R-94-004). This comprehensive guidance manual explains unit pricing, helps solid waste managers decide whether unit pricing is right for their communities, and provides detailed information on designing and launching such a program.
- ***Household Hazardous Waste: Steps To Save Management*** (EPA530-F-92-031). This brochure summarizes steps that people can take to reduce the amount of household hazardous waste they generate. It also briefly reviews how to safely store, handle, and dispose of such waste.

- ***Household Hazardous Waste: A Manual for One-Day Community Collection Programs*** (EPA530-R-92-026). This handbook for community leaders explains how to plan and operate a successful household hazardous waste collection program.
- ***“Green” Advertising Claims*** (EPA530-F-92-024). This brochure help consumers understand environmental claims such as “recyclable,” “environmentally friendly,” and “degradable,” based on guidelines issued by the Federal Trade Commission in cooperation with EPA.
- ***Environmental Fact Sheet: Recycling Grass Clippings*** (EPA530-F-92-012). This fact sheet explains the practice of “grasscycling,” or leaving grass clippings on lawns to improve the condition of a lawn and to reduce the amount of yard debris that must be managed.
- ***Environmental Fact Sheet: Municipal Solid Waste Prevention in Federal Agencies*** (EPA530-F-92-016). This fact sheet outlines efforts under way by federal agencies to reduce waste and briefly explains how to start a waste prevention program.
- ***Paper-Less Office Campaign: An Agencywide Waste Prevention Program*** (EPA530-F-94-012). This brochure outlines EPA’s campaign to reduce the amount of paper used throughout the Agency by a variety of methods, including duplex copying and electronic communication.
- ***Characterization of Products Containing Lead & Cadmium in Municipal Solid Waste in the United States, 1970 to 2000, Executive Summary*** (EPA530-SW-89-015C). This document summarizes the investigation of sources of lead and cadmium products disposed of in MSW between 1970 and 1986, with projections to the year 2000. Lead and cadmium products include lead-acid and household batteries, consumer electronics, glass, ceramics, plastics, soldered cans, and pigments.

The following publication is available for a small charge from the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161, 703 487-4650:

- ***Promoting Source Reduction and Recyclability in the Marketplace*** (PB90-163 122). This report relates the effectiveness of consumer-oriented education programs promoting source reduction and recyclability in the marketplace. Designed to assist solid waste officials, consumer interest groups, manufacturers, and marketing consultants, it describes successful source reduction campaigns and research.



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