



Pollution Prevention Handbook

Shipping and Receiving Operations

No. 24 in a Series of Fact Sheets



Department of the Interior

Office of Environmental Policy and Compliance (PEP)

Pollution prevention is the purchase and/or use of materials, processes, or practices that reduce or eliminate the quantity and/or toxicity of wastes at the source of generation. Pollution prevention is a multimedia approach that minimizes or eliminates waste released to land, air, and/or water without simply shifting pollutants from one media to another. In addition, pollution prevention is often the most cost-effective means to reduce environmental and health risks associated with waste. Pollution prevention is often cost effective because it may reduce raw material losses; reduce reliance on expensive "end-of-pipe" treatment technologies and disposal practices; conserve energy, water, and raw materials; and reduce the potential liability associated with waste generation. The Pollution Prevention Act of 1990 makes pollution prevention a national policy for environmental management.

The Department of the Interior (DOI) considers source reduction to be the preferred environmental management technique for dealing with a waste generation problem. For wastes that cannot be reduced at the source, DOI recommends that generators consider recycling as the next best option. Closing the loop through affirmative procurement of products with recycled materials is also an important element of pollution prevention. Wastes that cannot be reduced at the source or recycled should be stored, treated, and/or disposed in accordance with all applicable waste management regulations. Wastes should be disposed safely to minimize adverse impacts on the environment.

Everyone is interested in doing their part to protect the environment, and simple steps can help. A growing number of facilities are becoming aware of the environmental harm their operations may cause and are making a commitment to pollution prevention.

BENEFITS OF POLLUTION PREVENTION

Establishing a pollution prevention program at your facility has many potential benefits to you, your facility, and the environment. Some of these benefits are direct (e.g., cost saving from reduced raw material use), while others are indirect (e.g., avoided waste disposal fees).

When considering the benefits of pollution prevention, it is important to consider the life cycle costs of products and activities. Life cycle costs include costs associated with the production, distribution, use, and disposal of a product, associated environmental burdens (including resources depleted, energy, air emissions, water emissions, and solid waste generation), and associated environmental impacts.

PURPOSE OF THIS FACT SHEET

This fact sheet introduces pollution prevention options that can start you on the road to eliminating, reducing, or recycling wastes and creating markets for recycled products. Specifically, the fact sheet describes some of the options that you, as the manager of your facility, may adopt. Further, a list of specific practices and techniques that employees at your facility can take to help implement your pollution prevention program is included at the end of this fact sheet. The list of pollution prevention tips can be posted in the work areas of your facility to encourage employees to use environmentally-safe practices.

Potential Benefits of Pollution Prevention

To the individual:

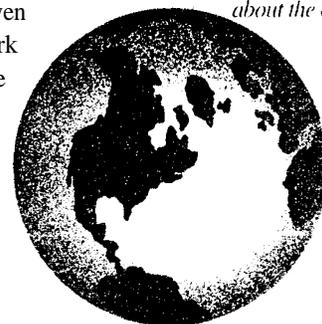
- Eliminating or reducing toxic or hazardous chemicals in the workplace provides a safe, healthy work environment for all employees.

To the Environment:

- Reducing pollution improves the quality of the environment for everyone.

Waste reduction can:

- Help your facility to achieve regulatory compliance.
- Reduce operating costs by limiting the amount of raw materials, energy, and water used at your facility.
- Minimize waste transportation, storage, and disposal fees.
- Reduce liability associated with waste handling, storage, and transportation.
- Demonstrate DOI's concern about the environment.



Pollution Prevention Checklist

Shipping and Receiving Operations



This checklist is designed to educate DOI employees about shipping and receiving wastes and to encourage thought on ways to reduce these wastes.

Q What are shipping and receiving wastes?

Shipping and receiving wastes are wastes that are generated while transporting goods from a manufacturer, to a user or from one facility location to another. These wastes typically include cardboard boxes, pallets, shrink wrap, tape, strapping, wrapping materials, drums, and plastic containers. Corrugated paper products represent the largest percentage of shipping and receiving wastes, with more than 25 billion boxes generated annually. Shipping and receiving wastes comprise nearly one-third of the total U.S. municipal solid waste stream and typically account for much of the waste generated by government agencies and companies.

Shipping and receiving wastes may be **generated** through a number of operations conducted at DOI and other Federal facilities, including:

- Food service
- Laboratories and research activities
- Equipment and facility maintenance
- Office activities
- Custodial service
- Shipping
- Construction
- Procurement

Q Why target shipping and receiving wastes for waste reduction?

From an environmental standpoint, reducing shipping and receiving wastes will conserve natural resources because many shipping and receiving materials are made of timber-derived products. Since the majority of these wastes are landfilled, a reduction in volume will help to prolong the lifespan of existing landfills. Because shipping and receiving wastes are usually bulky and heavy, removing these materials from the waste stream can have a substan-

tial impact. In fact, many states and localities are implementing bans on the disposal of packaging wastes in their landfills.

Reducing packaging will help protect the environment, and also will often increase DOI efficiency and cost savings. Reducing shipping and receiving waste provides substantial savings in avoided disposal, operating, purchasing, and transportation costs.

Q How can shipping and receiving wastes be reduced?

DOI employees can take a number of steps to reduce the generation of shipping and receiving wastes. Options for shipping and receiving waste reduction include:

- Reduce - if it's not essential, avoid it.
- Reuse - if it can't be reduced, reuse it.
- Recycle - if it can't be reused, recycle it.
- Procure recycled content packaging - close the loop by purchasing shipping and receiving materials with high recycled content.

These waste reduction options can be tailored to the specific characteristics of an operation or facility and are discussed in greater detail below. Ideally, these discussions will stimulate further thought among DOI employees and additional ways to reduce wastes and protect the environment.

Q What reduction opportunities are available for shipping and receiving wastes?

Reduction of shipping and receiving waste involves rethinking the process of packaging and shipping to find ways to eliminate unnecessary packaging and reduce the amount of packaging that is ultimately disposed. The primary way to reduce excess packaging material is to choose packaging that matches the product's size, weight, shape, fragility, filling requirements, pallet pattern, warehousing needs, and mode of shipment as accurately as possible. When

redesigning shipping and receiving materials, DOI should ensure that additional secondary or tertiary materials are not required to protect product integrity.

Other examples of packaging reduction are included below:

- Working with suppliers to reduce or eliminate packaging whenever possible;
- Eliminating multiple packaging, (e.g., avoiding use of both strapping and shrink wrap where only one is actually required);
- Requiring shippers to use padded vehicles to reduce the amount of packaging needed;
- Replacing a number of smaller packages with a single, larger, more efficient package size;
- Matching container size to the size of the item being shipped to reduce packaging requirements;
- Buying products in bulk and/or concentrated or refillable form to minimize packaging requirements;
- Consolidating outgoing materials to reduce box use and packaging needs; and
- Requiring suppliers to use packaging with recycled content.

Q What reuse opportunities are available for shipping and receiving wastes?

It is always preferable to minimize packaging. However, in cases where packaging is necessary, the next best step is to reuse the packaging. Some examples of shipping and receiving material reuse include:

- Reusing incoming shipping and receiving materials, such as packing peanuts, bubble wrap, and boxes, in outgoing shipments or packages;
- Using shredded waste paper for cushioning material as an alternative to purchasing packing peanuts;
- Reusing untreated, damaged, or unusable solid wood pallets for mulch or building material;
- Substituting durable recycled plastic pallets for wood pallets; and
- Returning unneeded pallets, boxes, and packaging materials to suppliers for reuse - cost adjustments for the return and reuse of these materials can often be negotiated with the supplier.

Q Have industry guidelines been established for reducing shipping and receiving wastes?

The Institute of Packaging Professionals (IoPP) has developed guidelines to help facilities assess different packaging options and their impact on the environment. The guidelines cover source reduction, recycling, degradability, disposal, and legislative considerations. The guidelines provide a detailed checklist to assess potential packaging changes and their impact on the environment and product integrity. For more information on packaging guidelines, contact The Institute of Packaging Professionals, 11800 Sunrise Valley Drive, Suite 212, Reston, VA 22091, Tel: 703-620-9380 or Fax: 703-391-6897.

Q What recycling opportunities are available for shipping and receiving wastes?

Many Federal facilities have found that recycling shipping and receiving wastes is a viable, and often profitable, means of reducing waste and returning materials to productive use. Unusable boxes, plastic shrink wrap, pallets, and paper packaging material can all be recycled.

An effective in-house recycling system must be established to efficiently collect all recyclable materials. Packaging waste should be segregated to avoid contamination and program officials should buy the most recyclable materials, preferably packaging materials composed of a single material. See DOI Pollution Prevention Fact Sheet No. 1, *Recycling*, for a detailed discussion about establishing recycling programs.

Q Which shipping and receiving materials can be purchased with recycled content?

Purchasing recycled content products reduces solid waste generation, conserves energy, and supports markets for materials collected for recycling. Cardboard boxes, plastic pallets, strapping, bubblewrap, foam cushioning material, shredded paper, and protective paper are all available with recycled content. In particular, corrugated packing materials are increasingly available with high recycled-fiber content. Over fifty percent of the corrugated product collected for recycling is used to make containerboard for new containers. The remaining corrugated is used in folding cartons, in construction, paper and other packaging products, or ex-



ported. Try to purchase products with the highest percentage of recycled content available.

Many Federal agencies are already specifying that suppliers use recycled content shipping and receiving materials. DOI facilities can require that suppliers provide recycled content products through procurement specifications.

Additional sources of information on recycled shipping and receiving products include:

- *The Official Recycled Products Guide:*
800-267-0707
- U.S. Conference of Mayors Buy Recycled Program Office: 202-293-7330
- National Recycling Coalition: 202-625-6406

Q What is the Federal government's policy regarding procurement of recycled shipping and receiving products?

Affirmative procurement (i.e., the purchasing of products containing recycled content) is required by Section 6002 of the Resource Conservation and Recovery Act (RCRA) and Executive Order 12780.

Section 6002 of RCRA requires EPA to identify items that can be manufactured with recovered materials and designate appropriate products for Federal procurement. EPA has designated paper and paper products. (which encompasses corrugated products, paperboard and fiberboard). as one of the five categories in which agencies must seek to purchase products containing, the highest level of recovered materials practicable.

Executive Order 12780, signed in October 1991, requires each Federal agency to promote waste reduction and recycling activities implement affirmative procurement programs, and annually report on the agency's affirmative procurement accomplishments. The DOI Interim Acquisition Policy for Affirmative Procurement (DOI Acquisition Policy Release 92-12) implements the requirements of this Executive Order.

Procuring recycled shipping and receiving materials will help DOI facilities to comply with these Federal regulations. See DOI Fact Sheet No. 21, *Affirmative Procurement* for a detailed discussion about buying products with recycled content.



The National Park Service's Intergrated solid waste Alternative Program specifically requires purchasing of materials in bulk and avoidance of excessive packaging whenever possible.



Pollution Prevention

Pollution Prevention Tips for Shipping and Receiving Operations



- **Work with suppliers** to reduce or eliminate packaging whenever possible.
- **Eliminate multiple packaging** whenever possible.
- **Require shippers to use padded vehicles** to reduce the amount of packaging needed.
- **Replace a number of smaller packages** with a single, large, more efficient package size.
- **Match container size** to the size of the item being shipped to reduce packaging requirements.
- **Consolidate outgoing materials** to reduce box and packaging needs.
- **Reuse incoming shipping and receiving materials** in outgoing shipments and packages.
- **Use shredded waste paper generated in-house for cushioning material** as an alternative to purchasing packing peanuts.
- **Reuse untreated, damaged, solid wood pallets** for mulch or construction.
- **Substitute durable recycled plastic pallets** for wood pallets.
- **Return unneeded pallets, boxes, and packaging materials** to suppliers for reuse.
- **Require suppliers to use packaging with recycled content.**