



WasteWi\$e Update



**WASTE
WI\$E**



Remanufactured Products: Good as New



Printed on paper that contains at least 20 percent postconsumer fiber.

Remanufactured Products: Good as New

What Is Remanufacturing?

Think of it as a way to keep durable goods out of the landfill before their time. When products become too worn or damaged to perform properly, remanufacturing extends their useful life, restoring them to a condition that's as "good as new." Because durable products represent a major investment for most organizations, remanufacturing is a good cost-cutting opportunity, saving the expense of buying a new product or disposing of an old one. In addition, remanufacturing conserves energy and resources because fewer raw materials are used.

This issue of the *WasteWi\$e Update* should assist partners in becoming knowledgeable about the variety of remanufactured products available and introduces issues to consider when buying them.

Examples of remanufactured products include:

- Automotive parts
- Cranes and forklifts
- Furniture
- Medical equipment
- Pallets
- Personal computers
- Photocopiers
- Photographic equipment
- Refrigeration components
- Steam turbines
- Telephones and televisions
- Textile machinery
- Tires
- Toner cartridges

The mention of any company, product, or process in this publication does not constitute or imply endorsement by the U.S. Environmental Protection Agency.



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Overall, WasteWi\$e partners featured in this issue are pleased with the performance, cost savings, and environmental benefits remanufactured products offer. **The Body Shop**, for example, buys high-quality remanufactured furniture at a 30 percent cost savings over new furniture. **Ford Motor Company** and **Union Carbide** purchase remanufactured toner cartridges, saving a combined total of \$300,000 per year. **Xerox** estimates saving several hundred million dollars through its copier remanufacturing program.

As we hope you'll learn by reading this *Update*, there are many ways to "buy remanufactured," which can be an important component of your cost-cutting waste prevention efforts.

Reuse in Action

Like much of the recycling industry, the remanufacturing industry began during the Depression and gained momentum during World War II, when raw materials, such as steel, were being directed towards the war effort. Since then, the remanufacturing industry has enjoyed a steady growth. Today, experts estimate that annual sales from the 73,000 U.S. firms involved in remanufacturing total approximately \$53 billion. The largest single remanufacturer in the United States is the U.S. Department of Defense. Weapons systems and military equipment, ranging from aircraft carriers to rifles, are regularly remanufactured to save on the costs of acquiring new ones, while bringing modern technology to older equipment.

What's in a Name?

Remanufacturing has many names. For example, the automotive sector uses the term *rebuilding*. Tire remanufacturers call themselves *retreaders*. Laser toner cartridge remanufacturers may refer to themselves as *rechargers*. *Reconditioning* and *refurbishing* are also frequently used terms. Increasingly, however, *remanufacturing* is becoming the standard term for the process of restoring used, durable products to a “like new” condition.

It can be easy to confuse remanufacturing with recycling. In the WasteWi\$e program, remanufacturing products or purchasing remanufactured products is considered to be a waste prevention activity, not recycling. Why is that? Remanufacturing is considered to be another form of *reuse*, a key waste prevention strategy. Essentially, remanufacturing restores durable products to serve their original function by replacing worn or damaged parts. Recycling, on the other hand, converts the collected product or material back into a raw material to be used in the manufacture of a completely new product (see box below). Remanufacturing results in less waste and eliminates the need to purchase or manufacture a new product.

How the Process Works

Although the term “remanufacturing” can be quite broad in scope, ranging from minor repairs to complete disassembly of large equipment, a typical scenario is as follows. Products to be remanufactured are collected and brought to a factory environment where they are completely disassembled. Each component part is cleaned and

inspected, then refurbished or replaced as necessary. Parts are inspected for damage and flaws that may require repair or rejection. The parts are then reassembled, and the resulting products are tested to perform to original specifications. Producing reliable products is the greatest test of a remanufacturer's skills. The performance of remanufactured products must be as good as new, in order to compete with originally manufactured products.

Companies can purchase remanufactured products in either a closed-loop or open system. In a closed-loop system, customers supply products for remanufacture and then buy them back. In an open system, companies purchase remanufactured products they did not originally own.

(Continued on page 4)

Remanufacturing Versus Recycling: An Example

Here's a comparison of remanufacturing and recycling for office partition panels.

Recycling: Stripping worn fabric from a panel system and sending it to a company that converts it into industrial padding. Sending metal supports to a recycler that smelts the metal into new metal products.

Remanufacturing: Repairing fabric covers and metal frames and replacing screws and other worn-out pieces.

(Continued from page 3)

Capturing Energy and Resources

Because fewer raw materials are used, remanufacturing conserves energy and natural resources. Remanufacturing automotive parts, for example, conserves an estimated 60 percent of the energy used in making the original product. It also reduces air pollution by keeping metals out of the re-smelting process. Studies conducted by the Fraunhofer Institute in Stuttgart, Germany, state that the energy saved worldwide in a year by the remanufacturing industry is equivalent to the energy contained in 10,700,000 barrels of crude oil. In addition, the raw materials savings equals 155,000 railroad cars filled to capacity.¹

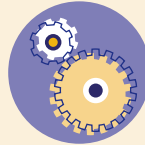
Due to the numerous lives it gives a product, remanufacturing also conserves natural resources. According to industry experts, for each pound of new material used in remanufacturing, 5 to 9 pounds of original materials are conserved. And that's not all. Purchasing a remanufactured product can cost as much as 50 percent less than a new product, which can add up to real savings. Keeping durable goods out of the waste stream also helps companies save money in avoided disposal costs.

Assuring Quality in Remanufactured Products

Have concerns about product quality kept you from purchasing a remanufactured product? Many high-quality remanufactured products are available, but as with other purchases, you may need to shop around. WasteWi\$e suggests the following steps to ensure that remanufactured products meet your needs:

- **Ask questions.** Find out the remanufacturer's quality standards, the procedures implemented to guarantee quality, what percentage of sold products are returned with defects, whether the product performs to original equipment specifications, and what warranties are provided.
- **See it in writing.** Some materials to obtain for your review include catalogs or brochures, price lists, and written warranties.
- **Ask for and check references.** Consider the opinions of other customers.
- **Contact the industry trade association.** Call the appropriate trade association to identify reputable remanufacturers of the product you want to purchase. A listing of several trade associations willing to assist WasteWi\$e partners follows.

Remanufacturing Trade Associations and Related Businesses



General

Remanufacturing Industries Council International (RICI)

Contact: Scott Parker

4401 Fair Lakes Court, Suite 210

Fairfax, Virginia 22033

703 968-2995

<http://www.remanufacturing.org>

A new umbrella organization composed of 8 associations and trade groups, created to serve the public as a clearinghouse of information about the remanufacturing industry. RICI plans to develop industry statistics and remanufacturing technologies, and promote benchmarking among firms. In addition, RICI is developing a directory of remanufacturing companies.



Furniture

Office Furniture Recycler's Forum of the Business Products Industry Association

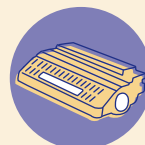
301 N. Fairfax Street

Alexandria, VA 22314

703 549-9040

<http://www.recyclefurn.org/index.html>

Trade association. Contact Furniture Division for free referrals and for membership directory of remanufacturers, refurbishers, brokers, wholesalers, and suppliers (\$100). A membership directory is also accessible free of charge on the Internet.



Toner Cartridges

Imaging Products Remanufacturing Association

Contact: Mark Stein

P.O. Box 42002

Washington, DC 20015-0602

888 IPRA-NOW (477-2669), toll free

Fax: 301 589-0600

¹Lund, Robert. 1996. *The Remanufacturing Industry: The Hidden Giant*.

Trade association. This WasteWi\$e endorser represents the remanufacturing industry for laser toner cartridges, ink jet cartridges, and ribbon cartridges. Answers questions relating to refilling or purchasing such cartridges; provides free referrals for nonmembers to local and worldwide dealers; offers assistance to end users in facilitating implementation of a return program; and addresses complaints regarding products.



Automotive - Tires

Tire Retread Information Bureau
900 Weldon Grove
Pacific Grove, CA 93950
408 372-1917

E-mail: retreads@aol.com

Trade association. Offers free referrals of retread tire vendors throughout the country. Provides speakers knowledgeable on retreads and offers tours of retread tire facilities. Information packages on retreads are available.

National Tire Dealers and Retreaders Association

Contact: John Buettner, Sr.
1250 I Street, NW., Suite 400
Washington, DC 20005
800 876-8372

Trade association. Manages an inspection and certification program to ensure quality of retreading plants and refers callers to certified plants. Also provides information on disposal of scrap tires and asphalt paving.



Automotive - Engines and Parts

Automatic Transmission
Rebuilders Association
6663 Ventura Boulevard
Ventura, CA 93003
805 654-1700

<http://www.atra-gears.com>

Nonprofit educational organization. Provides information on selecting an automatic transmission rebuilder. Provides warranties for work done by its members. Contact Membership Office for free referrals to members in local area.

Automotive Parts Rebuilders Association

Contact: Scott Parker
4401 Fair Lakes Court, Suite 210
Fairfax, Virginia 22033
703 968-2772

Trade association. This WasteWi\$e endorser provides free information on available remanufactured automotive parts and identifies automotive parts rebuilders in the association free of charge for nonmembers.

Production Engine Remanufacturers Association

Contact: Joe Polich
415 West Golf Road, Suite 43
Arlington Heights, IL 60005
847 439-0491

Trade association. Publishes a member directory and maintains a database of references. The directory is available free of charge to those interested in purchasing remanufactured engines via written request on company letterhead.



Additional Remanufacturing Internet Sites

FMLink

<http://www.fmlink.com>

This Web site provides numerous resources for facility managers, including technical bulletins, trade journal articles, education and training opportunities, and a marketplace of products and services (e.g., used, brokered, or remanufactured furniture).

Furniture Resolutions International, Inc.

<http://www.tradein.com>

This Web site serves as a resource for high-quality, previously owned systems office furniture. Browsers can search a database of preowned furniture options by manufacturer, model, size, and many other specifications.

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Furniture Remanufacturers: Transforming the Old into New



Has your company condemned old furniture to a lifetime in storage? What if that old furniture could look and perform like new for less than the price of new furniture? WasteWi\$e partners and furniture remanufacturers **Office Plan, Inc.**, and **Miller SQA (Simple, Quick, & Affordable)** describe how they work to make this happen.

Remanufactured furniture has grown from a small segment of the office furniture retailing industry in the late 1980s to an \$800 million chunk of the \$9 billion commercial furniture business, says Jim McGarry, executive director of the Office Furniture Dealers Alliance, an industry trade group. Some in the industry predict the segment will command a 25 percent market share within 4 or 5 years.¹ The benefits of purchasing remanufactured furniture include:

- **Cost savings.** The potential cost savings are significant for businesses that have furniture refurbished rather than discarding it. EPA estimates that businesses discarded approximately 2.9 million tons of furniture and furnishings in 1995 (*Characterization of Municipal Solid Waste in the United States: 1996 Update*). Given a 1995 national average tipping fee of about \$32 per ton (*Solid Waste Digest*), the potential avoided disposal costs are upwards of \$93 million. Substantial savings also accrue from avoided purchasing costs. According to Office Plan, for small projects (about 75 cubicles or less) customers can realize a potential savings of 30 to 50 percent over the cost of purchasing new office furniture. For larger projects, however, cost saving potential is reduced since original equipment manufacturers (OEMs) tend to give substantial discounts on large orders.
- **Updated design.** The basic structure of most office furniture, particularly panel systems, typically has a long life. However, the color, fabric, or other elements may wear out or become outdated—this is where refurbishing comes in. Assorted pieces of furniture can be refurbished to color coordinate with each other or with existing office furniture, or panel systems can be repainted or recovered to better fit with current styles.

Office Plan, Inc.

Office Plan, Inc., is a remanufacturer located in St. Paul, Minnesota, that does more than just give a face-lift to old office panel systems. The company provides a full-service

package for its customers, including furniture remanufacturing, installation, interior design, and space planning services. During its first 5 years in business, Office Plan has grown from 4 to 30 employees.

Customers can supply their own furniture for refurbishing or purchase remanufactured furniture supplied by Office Plan. With about 400 used partition panels for cubicles in stock for part replacement or total remanufacturing, Office Plan can provide reduced lead time to customers purchasing remanufactured furniture.

Office Plan typically deals with local companies, within a 100 to 150 mile radius, for closed-loop remanufacturing services. The company also provides remanufactured system furniture for large companies headquartered in the Minneapolis-St. Paul area, shipping furniture to their branch offices across the country.

To ensure that the company's remanufactured furniture has the same quality as new furniture, Office Plan replaces all small parts and pieces, cleans or replaces fabric (depending on the condition), and ensures that all moveable parts function properly. Office Plan provides lifetime warranties on its refurbished furniture.

Office Plan's internal operations reflect a commitment to the company's philosophy of reuse, repair, and then recycle. For example, worn fabric is used for packaging or sent to a recycler that uses it to make automotive padding and industrial rags. The company also views its business as an opportunity to educate both employees and customers on the benefits of waste reduction—for example, letting customers know that remanufacturing 40 cubicles diverts one tractor trailer of furniture from a landfill. For more information on Office Plan, please call Lynn Hooper, sales manager, at 612 686-8610.

Miller SQA

Miller SQA, a subsidiary of Herman Miller, Inc., and one of the largest office furniture remanufacturers in the country, recently built a new facility in Holland, Michigan, to accommodate its substantial growth. The company began as Herman Miller's buy-back, or trade-in, program, whereby

businesses would receive a discount on new furniture by returning old Herman Miller furniture. Today, Miller SQA produces a line of remanufactured office furniture called *As New*, with good-as-new quality.

Miller SQA does not routinely offer closed-loop services. A customer can, however, send its panel systems and file cabinets to Miller SQA and receive a combination of remanufactured and new furniture in return. A company can also simply purchase the *As New* line of furniture without any type of trade-in. All orders are supplemented with new components as necessary. Depending on the configuration and other requirements of the order, the customer may receive an office system containing as much as 75 to 95 percent or as little as 15 to 25 percent of *As New* furniture, with the remaining percentage consisting of new Herman Miller furniture. With its open system service, Miller SQA can offer customers reduced lead time. Miller SQA provides its *As New* line to customers across the United States.

Del Ensing, manager of operations for Miller SQA, explains that his company accepts only about 50 to 75 percent of the old furniture it inspects for remanufacturing. Dented or bent metal pieces and panels with poor structural or design integrity are rejected. The company's *As New* line must meet the same quality standards as any new piece of Herman Miller furniture. For example, an in-house painting system ensures that a remanufactured panel looks identical to and resists scratches as well as a brand new panel. The company also offers a 5-year warranty on its *As New* line.

In keeping with Herman Miller's commitment to preserve the environment, Miller SQA attempts to find a use even for the items it cannot remanufacture, reselling them at its outlet store or selling them to a local refurbisher or recycler. Unusable fiberglass panels, for example, can be recycled into insulation, and worn vinyl is reformed into panel moldings. Through these efforts, the company is able to remanufacture or recycle nearly 100 percent of its components.



¹Ball, Brian. "Recycled Furniture Makes Its Mark." *Business First Columbus (BFC)*, Vol. 12, Issue 39, May 24, 1996, p. 21.

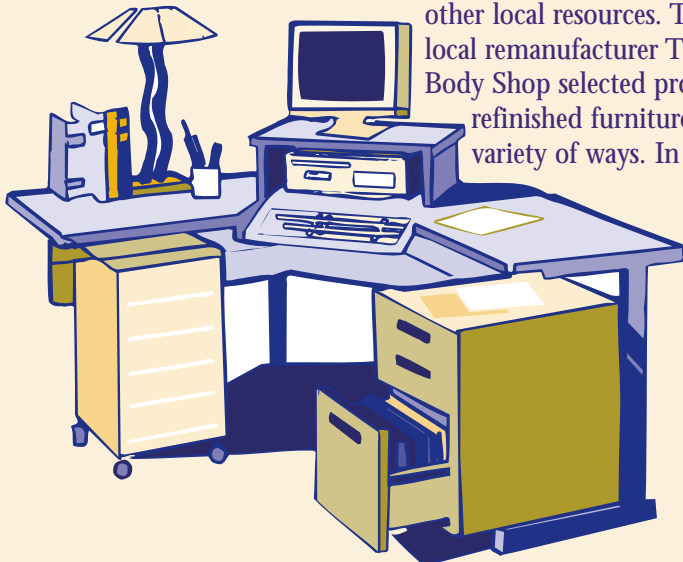
Body Shop Employees Do a Double Take With Refurbished Furniture

When employees at **The Body Shop** heard they would receive refurbished office furniture at their new work stations, many anticipated mix-and-match, second-rate furniture with dents and scratches. Once in the new space, however, employees of this WasteWi\$e partner company were pleased to find what appeared to be new furniture. Much to their surprise, there were 52 refinished desks, 52 remanufactured filing cabinets, and 208 refurbished partition panels (four panels per work station) that looked as good as new. Buying refurbished furniture saved the company 30 percent in purchase costs.

The Body Shop, an international retailer of skin, hair, and cosmetic products with U.S. headquarters in Wake Forest, North Carolina, has worked successfully with a local firm to purchase remanufactured desks, work station partition panels, and filing cabinets since March 1995. The Body Shop purchases remanufactured furniture for several reasons. According to Chris Whitley, corporate facilities manager, "In keeping with our philosophy of *Reduce, Reuse, Recycle*, The Body Shop is committed to buying only recycled or remanufactured furnishings (with the exception of new ergonomic desk chairs) for our corporate facilities." Whitley adds, "We perceive no difference whatsoever in the quality of remanufactured furnishings versus new. And, in addition to the environmental benefit of buying refurbished, there is an associated cost savings."

Locating a Remanufacturer

To comply with The Body Shop's corporate policy to promote business with small, family-owned, local operations, the facility manager found a local remanufacturing operation by calling companies listed in the yellow pages and investigating other local resources. The local remanufacturer The Body Shop selected provides refinished furniture in a variety of ways. In most



The Remanufacturing Process

The remanufacturing process varies for each type of office furniture.

- **Desktops.** Remanufacturers can shave off worn desktops and replace them with new Formica tops. If a desktop is in good condition, they can often sand it down and reshellack or repaint the top.
- **Filing Cabinets.** For steel filing cabinets, remanufacturers hammer out dents, replace handles and screws, and repaint the unit.
- **Partition Panels.** To refurbish partition panels, remanufacturers repair fabric covers and metal frames and replace screws and other pieces.

cases, The Body Shop sends furniture it already owns to the company for refinishing. Recently, furniture no longer needed at one office in New Jersey was remanufactured for use in the company's new office space in North Carolina. The Body Shop also stores unneeded furniture or furniture parts until it receives a request for a refinished piece. When the company does not have furniture available from another office or in storage, it orders remanufactured furniture directly through the remanufacturer. The remanufacturer can locate pieces to refurbish and fill the order. Ordering remanufactured furniture without providing the pieces to be remanufactured, however, can take additional time and requires advanced planning.

Planning Ahead for Large Volume Purchases

While The Body Shop is pleased with the remanufactured furniture it purchases, it has encountered some special considerations associated with using a small, local remanufacturer. Specifically, the lead time involved with large quantity purchases has not always coincided with the company's renovation plans. During a recent office expansion, for example, The Body Shop had difficulty identifying a local source for large volumes of remanufactured carpeting before the renovations were scheduled to begin. Purchasing agents were told it could take close to a year to fill the 9,600 square foot order. One method of remanufacturing carpets used by The Body Shop involves shaving off the old carpeting and gluing on new patches of material. Previously, The Body Shop had purchased smaller quantities of remanufactured carpeting for its office and had a faster turnaround time. While sufficient quantity may be less of an issue when dealing with larger remanufacturers, Chris Whitley explains, "Working with local carpet remanufacturers taught us to plan as far in advance as possible for large quantity purchases."

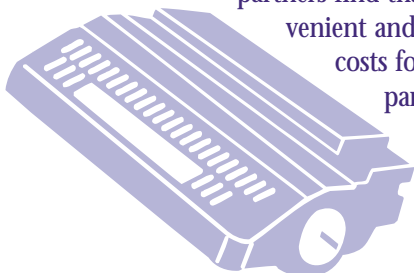
Once Is Not Enough: Buying Remanufactured Toner Cartridges

Laser printers, copiers, and fax machines all require a steady supply of toner cartridges. As a result, empty toner cartridges can make up a sizable portion of many companies' office waste. By purchasing remanufactured cartridges, WasteWi\$e partners have found that they can prevent waste and save money—remanufactured cartridges generally cost 20 to 50 percent less than new ones.

When toner cartridges are remanufactured today, they are completely disassembled and cleaned, worn parts are replaced, and new toner is installed. In the past, many toner cartridge "remanufacturers" simply drained the old toner by drilling a hole in the cartridge and refilled the cartridge with new toner. The quality of these remanufactured toner cartridges was often poor because worn components of the cartridges were not replaced. Now, however, most cartridges are designed to be disassembled, and quality remanufacturers replace worn parts in addition to refilling the toner.

For many WasteWi\$e partners, the keys to a successful cartridge return program are an effective partnership with a product distributor or supplier and employee education. Many

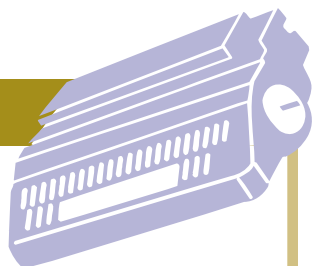
partners find that closed-loop systems are convenient and enable them to avoid disposal costs for used cartridges. WasteWi\$e partners have also discovered that introducing remanufactured toner cartridges slowly (e.g., through pilot programs)



Putting Quality First

Before choosing a supplier, WasteWi\$e suggests asking the following questions:

- How are the cartridges remanufactured (i.e., are they disassembled and cleaned or simply refilled)?
- What tests are performed to ensure product quality?
- Do the remanufactured cartridges come with a warranty?
- Can the supplier provide references?



allows them to build support for remanufactured cartridges and work out any kinks in the program.

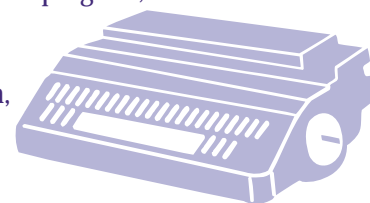
Ford Motor Company Partners With Remanufacturer

WasteWi\$e charter partner **Ford Motor Company** established a partnership with its supplier to take back and remanufacture toner cartridges used at its North American facilities. In 1996, Ford estimates it avoided disposing of more than 67,700 pounds of toner cartridges, and saved an estimated \$180,000 in avoided disposal costs. Since 1991, Ford has collected more than 332,000 pounds of toner cartridges for remanufacturing and saved \$1.2 million in the process.

Empty toner cartridges are collected in a variety of ways at Ford facilities, depending on how office products are purchased. In some cases, employee volunteers establish collection centers and call the supplier when at least 10 empty cartridges have been collected. In other locations, facilities have established an exchange program and are responsible for collecting and returning the empty cartridges. Once the supplier receives the old cartridges, it inventories them and credits Ford for each cartridge returned. The supplier pays anywhere from \$1 to \$13 per used cartridge, depending on the cartridge type, and then sends the cartridges to a remanufacturer who completely disassembles, cleans, and repackages the cartridge. Ford then buys back the remanufactured cartridges for about 30 percent less than the cost of a new cartridge.

Ford believes that the key to the success of the program has been the educational program offered to Ford employees about using and maintaining printers, copiers, and fax machines properly, thereby extending the cartridges' life. The supplier firmly believes that careful maintenance (e.g., cleaning) of office equipment that require cartridges is essential to the good performance of new and remanufactured cartridges alike.

For more information on Ford's program, write: Andy Acho, Director Environmental Outreach and Strategy, Ford WHQ, Dearborn, Michigan 48121-1899.



Union Carbide Rolls Out Toner Program Nationally

Union Carbide, a WasteWi\$e charter partner, began testing remanufactured toner cartridges because of the potential cost savings of using them, and because empty toner cartridges must be managed as waste.

Beginning in December 1995, Union Carbide initiated a pilot toner cartridge return program with a national remanufacturer to rebuild spent cartridges from the company's West Virginia facilities. To ensure quality, the remanufacturer tests a random sample of the remanufactured cartridges before sending them to Union Carbide. The remanufacturer supplies toner cartridges with a pre-paid return label in the box. Empty cartridges are placed back in the box and sent to the remanufacturer who returns the "like-new" ones to Union Carbide. Union Carbide estimates that remanufactured cartridges are 50 percent less expensive than new ones, when both purchase price and disposal costs are considered. In 1995, Union Carbide saved \$75,000 at one facility through avoided purchasing and disposal costs.

Union Carbide internally publicizes its program and is implementing the program at facilities nationwide. The company conducted a number of informative sessions to explain the cartridge return program and provide an opportunity for employees to ask questions. "The benefits of the program have been tremendous, not only in terms of cost savings but also to the environment," says Jim Audia, Surplus Equipment Sales Manager.

For more information about Union Carbide's program, contact Jim Audia at 304 747-3526.

We'd Like to Hear from You!



WasteWi\$e would like to hear about your efforts to buy remanufactured. In addition, if you are not yet a WasteWi\$e partner and would like to join, please let us know. State and local government agencies are now welcome to join the WasteWi\$e program. Contact us at 800 EPA-WISE for more information.

Satisfaction Guaranteed by Xerox

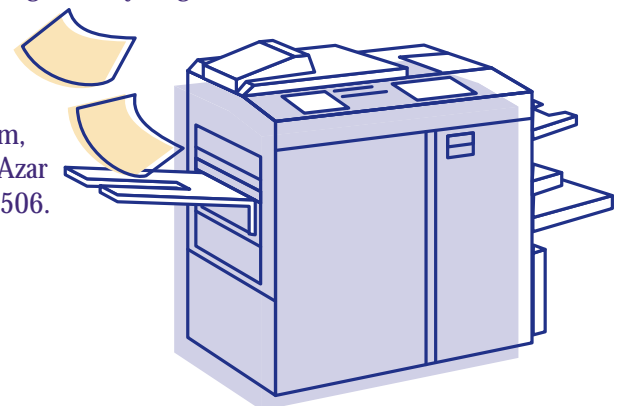
Same assembly line. Same technicians. Same guarantee. The only difference between a new copier and a remanufactured copier produced by WasteWi\$e charter partner **Xerox Corp.** is a small label outside the machine. Xerox receives a steady supply of machines through customer trade-ins and lease expirations each year. Rather than dispose of or recycle these machines, the company has developed a state-of-the-art process to remanufacture them, saving several hundred million dollars in 1995 through costs avoided for purchasing new parts and raw materials.

In 1991, Xerox initiated the Asset Recycle Management (ARM) program to manage the increasing volume of products returned to the company for reprocessing. As part of this program, the company began retooling its plants so that new-build manufacturing and remanufacturing are part of the same integrated line. "The result is a more efficient use of resources and uniform quality standards," says Jack Azar, associate director of environmental products and technology.

Xerox also began to design its products for disassembly. Efforts include consolidating and standardizing components as much as possible and designing parts to snap together. During the design phase, Xerox engineers assess how parts and assemblies will be affected by consumer use and to what extent parts will be reusable. After making this determination, engineers assign remanufacturing codes to each part or assembly. Xerox marks each of the components when they come back through the remanufacturing process so it knows how many times the component has been used and compares these marks with the original codes. Using sophisticated testing procedures, the company is able to verify the quality, life, and functionality of each of the components.

Xerox's ultimate goal is to build machines that produce no landfill waste. "Reuse is one of the most environmentally and economically effective ways to reduce waste," says Azar. Remanufacturing and recycling are the foundation of this effort.

For more information on Xerox's ARM program, contact Jack Azar at 716 422-9506.



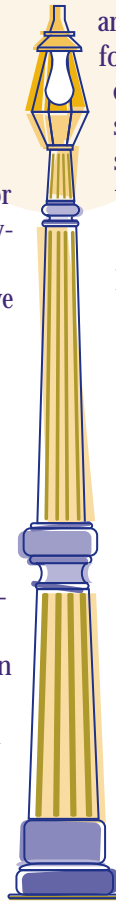
Bright Ideas for Street Lights

Noticed any new street lights in your neighborhood? Well, they might not be completely “new” after all. A number of WasteWiSe partner utilities came up with a bright idea—remanufacturing street lights. In the past, the utility sector either disposed of nonworking street lights or recycled the metals for their scrap value. Over the past several years, WasteWiSe charter partners **Florida Power Corporation** and **Florida Power and Light Company** have found that refurbishing street lights has saved money and even generated revenue.

Florida Power Corporation

Florida Power began remanufacturing its street lights in January 1996. The company contracted with a local non-profit organization to clean, test, and replace light bulbs, photovoltaic cells, glass globes, and light starters where feasible. In the first 8 months of operation, approximately 10,000 street lights were brought to a centralized collection point. While the company has not tracked the number of lights actually remanufactured, it estimates saving between \$200,000 and \$250,000 through this process.

Recently, however, Jay Eingold, environmental services specialist with Florida Power, noticed that the number of street lights being sent back to the centralized collection



area was rapidly declining. With a little research, Eingold found that the line crews were now making the repairs directly to the street lights at local service centers without sending them to the collection point. “The line crews started seeing the value in the program and began doing the repairs themselves,” Eingold explains

For more information, contact Jay Eingold of Florida Power at 813 866-4489.

Florida Power and Light Company

Florida Power and Light (FP&L) adds another step to the remanufacturing process—it checks all street lights removed by line crews to see if any parts are still under warranty. If the street light, the defective bulbs, or the photo cells are still under warranty, then the manufacturer credits FP&L for the defective part. If bulbs from the street lights still have useful life left, the company sells them abroad for a reduced price. As with Florida Power, FP&L makes minor repairs to street lights and returns them to a central warehouse for distribution. In 1996, FP&L's street light recovery program generated \$200,000 in warranty claims in favor of FP&L.

For more information, contact Scott Freeburn of FP&L at 407 845-4924.

Remanufactured Sensors Make Sense for Dartmouth Hitchcock

According to the April 4, 1996, issue of *The Wall Street Journal*, an increasing number of hospitals are purchasing remanufactured products. WasteWiSe partner **Dartmouth Hitchcock Medical Center** in Lebanon, New Hampshire, is part of this national trend, and for a good reason. Dartmouth Hitchcock saves \$30,000 a year by using a remanufactured version of a product it used to throw away—sensors to monitor patients' pulses. The remanufactured sensors cost 40 percent less than new sensors.

In late 1995, the hospital's pulse sensor supplier approached hospital administration with an opportunity to save a substantial amount of money by switching to remanufactured sensors. The hospital administration supported the idea. “When we found out the cost savings of using the remanufactured sensors, there was no question we would

switch,” says Laura Brannen, environmental specialist with Dartmouth Hitchcock.

Hospital staff collect and clean the sensors, place the used sensors in special sterilized pouches, then ship them at no cost back to the supplier. For each sensor sent back, the hospital receives a credit. The supplier recycles the light-emitting diodes and other electronic components and cables, then remanufactures the sensors so that they meet the same standards as new sensors under very strict quality assurance/quality control procedures. Each sensor is then sterilized, packaged, and shipped back to the hospital. Since the beginning of 1996, Dartmouth Hitchcock has sent 14,400 sensors to be remanufactured, approximately half the number of sensors the hospital uses in a year.

“When we began the program, many of our employees were skeptical,” says Rob Dumont, central sterilize reprocessing manager for Dartmouth Hitchcock, “but we have all been pleasantly surprised at how easy the program is. It only takes a few minutes a day.”

For more information, contact Rob Dumont of Dartmouth Hitchcock Medical Center at 603 650-7435.



Where the Rubber Meets the Road: Retread Tires at Bell Atlantic

Approximately 3.8 million tons of rubber tires were disposed of in the United States in 1995. Some WasteWi\$e partners, such as **Bell Atlantic**, have found that using retread tires is an effective way to eliminate some of these tires from the waste stream and save money at the same time. If your company has a sizable vehicle fleet, using retreads could mean significant savings for your bottom line.

What exactly is a retread tire? Used tires are first inspected visually and mechanically for defects. If the body is sound, the old tread is buffed off. A new layer of rubber is then added and a new tread is placed on top. The entire tire is then vulcanized, or cured. The resulting tire can be anywhere from 30 to 70 percent less expensive than a new one, according to the International Tire and Rubber Association. In addition, retreads meet or exceed safety standards set for all tires by the National Highway Traffic Safety Administration, get comparable mileage to new tires,

and can be driven at the same speeds. Commercial airplanes land on retread tires every day, and the U.S. Postal Service and many government agencies, such as the Department of Defense, use them as well. In fact, the Resource Conservation and Recovery Act, our nation's solid waste law, requires federal agencies to purchase retreads in most situations. Retreading tires also has clear environmental benefits; using a retread truck tire instead of a new one results in a net conservation of 15 gallons of oil.

WasteWi\$e charter partner Bell Atlantic uses retread tires on 60 percent of its vehicles, including pick-up trucks, vans, and big rigs. The company saved **\$430,000** in 1995 and **\$560,000** in 1996 by purchasing retreads. Bell Atlantic estimates that its retreads are approximately 40 percent less expensive than new tires.

Education was a key component of Bell Atlantic's program to purchase retreads. Fleet managers were concerned about the safety and performance of retread tires. The company overcame this barrier by educating them about the retread process and the clean record of retreads' performance. Bell Atlantic communicated the safety and economic benefits of retreads in bulletins distributed to the fleet maintenance and purchasing departments. Although the company is not currently using retreads on the cars in its fleet, it plans to do so in the near future. "Give it some time, and we'll be using them on cars, too," says Recycling Coordinator Maureen Burke.

Contact the WasteWi\$e Helpline at 800 EPA-WISE for additional resources on buying retread tires. For more information on Bell Atlantic's program, contact Maureen Burke at 201 266-9331.



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