

# NYC Waste Le\$\$

Issue #

3

A program sponsored by the City of New York Department of Sanitation, the New York State Energy Research and Development Authority, and the U.S. Environmental Protection Agency Region II

## Airlines/Airports

### What Is Waste Prevention?

New York City airports generate more than \$26 billion in economic activity annually. Together, in 1997, John F. Kennedy International Airport and LaGuardia Airport provided service to more than 53.6 million domestic and international passengers. The City's airports are themselves equal in size to small cities, providing a wide and complex array of passenger service and aircraft and vehicle maintenance operations. All of these activities offer opportunities to reduce waste and make operations more cost efficient.

The secret is found in a common message: "All waste is lost profit." In the City's airport and airline industry, the potential for behind-the-scenes savings is tremendous, especially considering that New York's airports generate about 34,500 tons of waste each year. That is about 1.5 percent of the total quantity of commercial waste generated in the City each year.

So what is waste prevention in the context of operating and managing an airport, an operation within an airline or an on-site service provider at an airport? In these businesses, waste prevention means reviewing and changing those practices that result in wasted food,

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## Port Authority of NY & NJ at LaGuardia Airport Leading by Example



Dilution systems, such as this, for concentrated cleaning products reduce solid waste generation.



The Port Authority of NY & NJ joined the NYC WasteLe\$\$ program in 1996 and embarked on an effort that would take them into the spring of 1999. As the first step in the program, the

Environmental Unit at LaGuardia Airport led the waste prevention initiatives at the airport. This assessment included walking through all of the operations and looking at both the activities and wastes generated. According to Ken Sagrestano, Environmental Manager, "Although we were pleased to learn that we were already running many of our operations in an efficient manner, we found lots of room for improvement and opportunities to implement new efficiencies and reduce our waste."

### Select Waste Prevention Initiatives Implemented at LaGuardia

#### Landscaping Initiatives

- Landscape trimmings, such as dead flowers, tree branches and dead shrubs, were previously discarded in the trash. These materials are now delivered to a compost pile on the perimeter of the airport property. This initiative reduces the quantity of material requiring disposal. The quantity of material delivered to the compost pile varies with the seasons. The existing compost pile occupies an area about the size of a parking space and is three to four feet deep.

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## Stop, Look and Calculate: It May Be Time to Rebid

You may find money hidden in your trash compactor or dumpster if you have not reviewed your waste carting invoices recently. Although exorbitant waste carting costs were reduced and capped when the New York City Trade Waste Commission (TWC) established the "Carting Customer's Bill of Rights," there may be opportunities for you to reduce your costs further, says Eugene DiToro, an Inspector with the TWC.

Simply analyzing your invoices and observing occasional pick-ups may highlight the fact that you are paying more than necessary to have your waste collected. By ensuring that you are charged only for the

quantity of waste and recyclables that you put out for collection, waste prevention efforts that decrease the quantity of materials generated will pay off by reducing your carting costs.

During a NYC WasteLe\$\$ seminar, Inspector DiToro offered airline and airport managers and personnel tips for working with their waste carters. He stressed



What would your waste carter charge you for this container of waste?

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- The Jacob K. Javits Convention Center of New York • Hunts Point Terminal Produce Market
- Long Island City Business Development Corporation • Met Food • New York City Board of Education • New York City Department of Business Services • New York City Department of Parks and Recreation • New York City Trade Waste Commission • New York Convention & Visitors Bureau • New York Hospital • New York State Restaurant Association • Pizzeria UNO
- The Port Authority of New York & New Jersey at LaGuardia • Public School 48, Bronx
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- Volume Services America, Inc. • Wakefern Corporation

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### Spotlight On: Waste Prevention

## The New Bottom Line:

### Leading the Nation to a New Sustainable Growth Economy

**W**hat do DuPont, Texas Industries, Interface Carpets, Intel, the George Washington University Business School, Anheuser-Busch, and Baxter International have in common? These organizations are part of a rapidly growing global movement, attracting large and small businesses of all types, that not only recognizes but races in hot pursuit of a new bottom line. That new bottom line measures the sustainability of business enterprise; sustainability achieved through direct and deliberate efforts to minimize waste.

Proponents of this movement are searching for new and better ways to eliminate practices that waste natural resources and human capital. In so doing they are enhancing their stature in both the business and consumer communities, and they are increasing their profits in the process.

This new and growing breed of business leaders recognizes environmental, social, and financial efficiency as factors influencing profit, and as inroads to strengthened consumer confidence and growth in market share. As Craig Barrett, CEO and president of Intel, stated recently, "Business is on the 'front line' in making sustainable development a reality. Companies need to take a hard look at how they make their products and deliver their services."

This new hard look is what will ultimately determine which businesses will prosper in the new economy; an economy that increasingly recognizes the ultimate limits of our natural and human resources and values and conserves them accordingly. This way of thinking has thus given rise to a new set of metrics that reflects the new bottom line.

Nowhere are the potential gains of conservation, reuse, and waste prevention more evident than in densely populated urban centers, such as New York City. Here, in a city of eight million, the gains to be realized by even modest behavioral changes are enormous simply because of the population scale. Here business leaders have enormous potential to initiate and fuel trends that can spur literally millions of other enterprises, as well as consumers, to adopt sustainable growth practices such as waste prevention.

Across the country, industry leaders are adopting the new sustainable growth paradigm. DuPont's sulfur products business minimizes chemical waste and reduces worker and consumer hazard through their acid handling and recovery services. Through this service, customers are freed from having to own or handle the chemical substances, and the acids can be treated for reuse by DuPont when the customers' needs are met.

Meanwhile Texas Industries is conserving natural resources by producing steel from recycled scrap and cement from steel mill slag, thereby eliminating

two waste streams and at the same time conserving virgin materials. In the area of carpet products, Interface Carpet is enjoying enormous public recognition and customer loyalty based on their strategy of leasing of flooring systems to customers, thereby eliminating consumer disposal of end-of-life carpet. Rather, Interface collects the used carpet for reprocessing and reuse.

Intel has adopted a corporate policy mandating a design-for-the-environment strategy to achieve 50 percent reduction in volatile organic compound emissions per product unit, a substantial achievement against their new bottom line accounting. In the academic arena, more and more colleges and universities are developing curricula to train their students in the new math of the bottom line.

For example, The George Washington University Business School encourages emerging business leaders to think and plan in terms of the sustainable growth metrics, as conveyed through courses in International Environmental Policy and Management, Environmental Ethics, Environmental Policy, and Environmental Values and Strategies. Students also can sign up for a course on eco-tourism to study the business crossroads of the natural environment and the tourist economy.

Such thinking also is valuable to business leaders trading in products as wide ranging as com-

puter hardware to beer and pretzels. For example, Compaq has reduced waste and packaging costs dramatically through their recent introduction of a reusable shipping container that can be reused for as many as fifty round trips.

Anheuser-Busch, also mindful of the costs and wastes generated by packaging material, has formed an alliance with a local mail service to divert packaging waste from disposal to reuse. Baxter International, a manufacturer of medical products found that by reducing packaging by one million pounds they could reduce costs by \$1.3 million. The company is now en route to realizing its corporate goal of 20 percent packaging reduction over ten years, by 2005.

The efforts of these companies and scores of other manufacturers, service enterprises, schools, stores, and consumer groups are raising the bar for waste prevention. They are the leaders of today and charting the way for the economy of the future. These businesses will enjoy a powerful competitive advantage as waste carting costs are likely to rise in the future.

You as a business leader have a choice. You can plan for, and capitalize on opportunities to lead by example, charting the way for constructive change ... or you can wait until the quantities of waste and the costs of waste management force your hand. ■

## What is Waste Prevention?

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wasted supplies, and discarded packaging. It means implementing systems that eliminate waste paper and cardboard, food, other organic materials, plastics, used oils and greases, spent batteries and tires, pallets, and spent chemicals from paint application and removal and de-icing operations, as well as wasted energy and water.

According to Ken Sagrestano, Environmental Manager at LaGuardia Airport, taking a look at all of the different waste prevention and other environmental programs allows you to see how much money the programs actually save and helps you see the potential cost benefit of improving or adding new programs.

In many cases, wastes can be eliminated by using durable items, or reusable products rather than disposables. For example, you can use reusable sorbents such as spill pads and shop rags in place of clay absorbent. Re-evaluate spill control practices to identify ways to eliminate spills through bulk purchasing and dispensing systems.

In airport terminals, restaurants can minimize waste by offering menu selections that enable cus-

tomers to select smaller portions, or alternative side dishes. Waste also can be prevented by changing ordering schedules to minimize spoilage, or teaming up with a food bank for daily pick up of edible unused perishables.

Waste prevention is as much about what you buy as it is about what you throw away. It also is about when you buy, and how you use what you buy. Keep an eye on what fills your dumpsters each day or over a week, and ask yourself if... and how... that wasted material could have been prevented. You also can review the type and amount of packaging waste that you pay to dispose each month, and ask yourself if you could specify alternative packaging that would help you to reduce waste and therefore lower your trash bill.

Essentially, waste prevention is inventorying the waste in your operation and taking deliberate steps to eliminate it. In this issue of *NYC WasteLeSS*, we present strategies and success stories of waste prevention; reducing waste at its source, before it is even generated. Preventing waste saves money, saves time, and conserves resources. It makes good business sense. ■

# Donate Your Way to Cost Savings

**B**usinesses throughout the City effectively reduce the cost to manage and dispose of unneeded items by donating usable material and edible food to receiving organizations. Donors also are eligible for tax deductions when donating items to not-for-profit organizations.

Each year, many non-profit organizations in the City facilitate the exchange of usable, high-quality items between wholesalers and receiving organizations. According to Susan Glass, Director of Materials for the Arts (MFA), 514 tons of materials, worth an estimated \$3 million, were donated through the organization during New York City's fiscal year 1999. MFA, a program sponsored by the New York City Department of Cultural Affairs in partnership with the Department of Sanitation and the Board of Education, makes the items available to a variety of groups. These include New York City-based, non-profit cultural

organizations; health, social and community service organizations; schools; and City agencies.

In addition to donating materials, airport tenants may want to consider food donations as a way to reduce their costs. Restaurants, such as those located at airports throughout the City, donate thousands of tons of nutritious, edible food every year to one of the City's food collection programs.

Still, despite the fact that hundreds of organizations participate in the various donation programs, there are many more who are not taking advantage of this cost-effective method of reducing the quantity of edible food destined for disposal and the opportunity to join forces to help hungry New Yorkers. According to Julia Erickson, Executive Director at City Harvest, "In 1998, City Harvest picked up 10 million pounds of food. This is estimated at only 20 percent of all the food that is wasted in our City."

Next time you are about to discard edible food or usable material goods, consider contacting one of the many charitable organizations throughout the City. Many organizations offer guidelines, donation packaging and tax advantages. Save money while helping others. ■

#### Fear of Liability – Not Necessary

New York City organizations that donate food in good faith are protected, under Federal law, by The Bill Emerson Good Samaritan Food Donation Act. In 1981, New York State enacted Article 4-D, Section 71-Z, "Liability for Canned, Perishable Food or Farm Products Distributed Free of Charge." Many collection organizations also have implemented safe food handling procedures to further protect donors and recipients. Fear of liability is no longer an issue for those who wish to make good faith food donations.

## Spotlight on Lighting

**W**hen Doug Sheppard breaks out his sample products, he is in the spotlight, quite literally. Nothing makes a stronger impression than seeing a new product in action. Sheppard, President of Advanced Energy & Lighting, Inc. in New York City presented the newest in lighting technologies at the *NYC WasteLeSS* seminar for Airlines and Airports. He demonstrated each lamp's light quality and explained the cost and energy savings to be gained by considering different types of lighting in a facility.

Sheppard's company, Advanced Energy & Lighting, specializes in delivering energy efficient system designs that are reliable and affordable. He works with individual businesses and organizations to redesign lighting systems, often improving the quality of light, while reducing costs. "Customers are always amazed that they often have more light when the retrofit is complete, but the overall wattage of the fixtures is less," says Sheppard.

Among Sheppard's samples were LED exit signs, several small compact fluorescent lamps, and an induction lamp that can last for up to 30 years. This lamp gives off 6,000 lumens using only 85 watts. He described the additional benefit with many of the new fixtures in that most manufacturers offer a two-year maintenance warranty on lamps and ballasts.



Doug Sheppard, of Advanced Energy & Lighting, Inc., demonstrates several new lighting technologies at a *NYC WasteLeSS* seminar.

Seminar attendees were most interested in learning about fixtures that could withstand cold weather usage. Many airport light fixtures are exposed to cold temperatures in unheated hangars and outdoors. Several fluorescent biax lamps that Sheppard had on hand were in closed fixtures designed to tolerate cold temperatures without any adverse effects on lamp life, restrike time, or lumens.

In addition to the nuts and bolts of lamps and fixtures, Sheppard also described studies conducted by the U.S. Department of Energy and the Rocky Mountain Institute that found by improving lighting, workers are more comfortable and more productive. According to the Rocky Mountain Institute, an increase of one percent in productivity can provide savings to a company that exceed its entire energy bill. He offered a report that documents eight cases in which efficient lighting, heating, and cooling have measurably increased worker productivity, decreased absenteeism, and improved the quality of work performed.

For example, Lockheed's engineering development and design facility saved nearly \$500,000 a year on energy bills, gained 15 percent in productivity, and reduced absenteeism by 15 percent by designing daylighting into its new facility. Boeing's retrofitting project in which more than one million square feet of space in the hangar-sized assembly plants received new lighting, reduced its lighting electricity use by up to 90 percent, with a two-year payback period and reduced product defects at the same time. ■



#### FOR MORE INFORMATION:

- For more information about increasing productivity through energy efficient design, contact the Rocky Mountain Institute at (970) 927-3851, and ask for *Greening the Building and the Bottom Line*.
- For more information about lighting options for New York City businesses, contact Doug Sheppard of Advanced Energy & Lighting, Inc. at (212) 589-4313.



#### FOR MORE INFORMATION:

##### Food Donations:

- City Harvest, Inc. – (212) 463-0456, fresh, prepared, and packaged foods.
- Food for Survival Food Bank – (718) 991-4300, canned and packaged foods.
- Island Harvest (Long Island) – (516) 294-8528, fresh, prepared, and packaged foods.

##### Materials Donations:

- Materials for the Arts – (212) 255-5924, accepts almost anything with at least one week notice and will pick up.
- Good Will Industries of Greater New York, Inc. – (718) 728-5400, accepts clothing furniture, and furnishings.
- Helping Hand Community Center – (212) 722-0400, accepts anything and will pick up.
- New York WaSteMatch – (212) 240-6920, helps identify potential users of waste materials.
- NYC Stuff Exchange (contact the Sanitation Action Center at (212) 219-8090 for more information), toll-free telephone system with listings of reuse outlets in the City.
- Salvation Army – (212) 337-7200, accepts clothing, furniture, furnishings.
- St. Vincent de Paul Society – (718) 292-9090, accepts clothing, furniture, furnishings.
- United Way of New York City – (212) 973-3800, accepts office furnishings and equipment.
- Wilson Major Morris Community Center – (212) 234-4661, accepts almost anything, have limited access to van and limited storage.

For additional organizations and ideas, contact the Sanitation Action Center at (212) 219-8090 and request a copy of *Reuse It, Repair It, Rent It – But Don't Throw It Away!*

## British Airways: The Sky's No Limit!

"The focus is on continuous improvement and long term sustainability"

In recent years, British Airways, particularly in its British and other European operations, has focused sharply on the environmental issues facing aviation. An explicit corporate commitment to cost-effective environmental progress, and to measurement programs that gauge that progress, has enhanced company-wide environmental awareness and fueled continuous environmental improvement.

*"Aviation plays an integral part in the world transport and communication system and has a key role to play in society's drive towards sustainable development. British Airways will play its part in reaching towards this objective."*

— Robert Ayling, British Airways Chief Executive

In an effort to spur similar environmental achievement in the U.S., British Airways joined the NYC WasteLe\$\$ program, participating through its facilities at New York's John F. Kennedy Airport.

A key area of concern, both in the U.S. and Europe, is waste prevention. British Airways' efforts to prevent waste are reinforced by the United Kingdom's landfill tax, and rising costs for waste management, particularly in European airports. The company estimates that in addition to the \$2.25 million spent for waste disposal at Heathrow and Gatwick each year, it spends about \$30 million more for waste disposed at other airports in its system. Many European airports are introducing fee systems specifically to promote waste reduction.

For example the Vienna Airport charges airlines additional fees if aluminum cans, bottles and newspapers are not segregated from trash for recycling. The new Munich Airport also has raised waste management costs dramatically to discourage wasteful practices among its tenants. The trend is expected to continue, as more and more European and Asian governments seek to motivate extended producer responsibility through measures targeting solid waste. U.S.-based carriers may want to consider how these fees impact their operations in Europe and Asia. Waste prevention and on-board recycling may reduce the cost of serving these destinations.

The cornerstone of British Airways' environmental program is its corporate policies. The Airline's corporate-level commitment to economically sound environmental progress is reinforced through:

- establishment of the airline's environment policy in 1990;
- establishment of a comprehensive environmental training program for managers in 1994;

- establishment of a high level Environment Council to guide and monitor environmental progress;
- maintenance of an ongoing program of environmental reviews and audits;
- annual publication of the results of reviews and audits and identification of areas requiring additional effort; and
- maintenance of a system of consultation with internal and external groups to seek avenues to improvement.

As a result of its corporate initiative, British Airways was the recipient of the Association of Chartered Certified Accountants UK Environmental Reporting Award. In addition, British Airways has been recognized by the Council on Economic Priorities through its 1997 Environmental Stewardship Award and, in 1998, the airline was among the members of the World Travel and Tourism Council (WTTC) to be awarded with a Distinction in the Green Globe Achievement Awards.

Measurement programs are key to British Airways' success in setting and meeting long term objectives and sustained program progress. Among the initiatives the airline has taken specifically to reduce waste and measure reductions are:

- Consideration of the full cost of products from purchase to end-of-life in the decision-making process for the Purchasing and Marketing departments, and
- Measurement of indicators of waste minimization, such as quantities and costs of waste disposed.

Air transport is the fastest growing sector of the transportation industry. As such, environmental leadership and stewardship among its membership is key to sustainable growth. ■



FOR MORE INFORMATION:

- British Airways International  
[www.british-airways.com/](http://www.british-airways.com/)  
+44 141 222 2222 for international information  
(800) AIRWAYS for U.S. information  
Copies of the 1998 Annual Environmental Report, which covers the performance of key environmental issues and the range of the airline's activities to protect and enhance the environment, are available from British Airways Environment Branch, PO Box 365, Harmondsworth, UB7 0GB or by visiting:  
[www.environment.1.branch@british-airways.com](mailto:www.environment.1.branch@british-airways.com).



US Airways staff now reuse pallets generated at LaGuardia Airport in cargo operations at JFK International Airport.

## NYC WasteLe\$\$ In Action

Looking in the Trash  
Containers Pays Off

US Airways, a NYC WasteLe\$\$ partner, operates a cargo operation at LaGuardia Airport. This operation receives palletized cargo for shipping on domestic flights, cargo for destinations in New York City, as well as supplies and parts for use at the airport. As a result, the cargo operation generates a large surplus of wood pallets.

US Airways was paying for the removal of two 30-cubic-yard open-top containers of trash each week. Based on observations during the project's waste assessment, approximately 90 percent of the waste in each container was pallets. Although one container was designated for pallets and the other for trash, both containers were filled with numerous pallets. The cost to remove a container of pallets was \$450. However, since pallets were contaminated with trash, the contents of both containers were considered trash and removed for the trash rate of \$600 per container.

US Airways, determined to reduce the waste stream at its cargo operation, identified a need for pallets at its trucking operation at JFK International Airport. Cargo staff at LaGuardia now store usable pallets on-site and staff from the JFK trucking operation pick up 80 to 100 pallets per week. This reuse program has reduced the disposal of waste to two 30-cubic-yard containers per month. The cost savings from the avoided disposal fees, combined with the avoided purchase cost of new pallets yields an annual savings of more than \$40,000.

## Toxicity Reduction Prevents Waste

Some cleaning products and degreasers commonly used in machine maintenance operations and routine cleaning can pose health hazards to your staff, and to those who handle your waste after it is removed. Paints and paint thinners also can contain harmful substances. When compared to these traditional products that serve the same purpose, environmentally preferable cleaning, degreasing and painting products have a reduced impact on human health and the environment.

Take a close look at the products used in your operations and maintenance shops to identify opportunities to consider testing and switching to alternative products. Look on your shelves, review material safety data sheets (MSDSs), and talk to staff. You may be surprised at what you find. For example, the machine degreaser you are purchasing may contain toluene, CFCs, petroleum distillates and aromatic solvents.

### Are Your Employees Informed?

Material safety data sheets (MSDSs) are mandatory information sheets that accompany all potentially toxic products and materials. The Occupational Safety and Health Administration (OSHA) requires that MSDSs be readily available to all staff using or handling the materials. Each MSDS contains pertinent information about the material's or product's ingredients, its harmful characteristics, and how to respond to spills, accidental contact, and other exposure. An MSDS can provide life-saving information, as well as data about using the product safely and most effectively.

These products can be replaced by alternatives that offer the same performance standards. One such replacement product is Enviro Solutions Heavy Duty Degreaser. This degreaser is biodegradable and essentially non-toxic according to Workplace Hazardous Materials Information System regulations. Don't stop after you look at the more obvious mechanical activities at your facility. For example, look at the products used to clean the employee common areas.

When considering switching to a reduced toxicity cleaner, degreaser, or paint, check the labels of your current products to see whether they contain any of the chemicals listed in the adjoining box, *Targeting Toxics*. This list is not comprehensive, but includes some of the more common, toxic chemicals found in cleaning products and degreasers.

When environmentally preferable products were first introduced, as with any new product, some

were not as effective as the products they were meant to replace. However, based on approximately thirty years of research, many environmentally preferable cleaning and maintenance products now meet all of the same standards as traditional products. In addition, most vendors will ship samples so that you can test the effectiveness of the product before making a purchasing decision.

While you may not be able to find environmentally preferable cleaning supplies for all your needs, alternatives to traditional cleaning supplies are available. Every day, new products are introduced to the market that have eliminated constituents of concern such as 1,1,1-trichloroethane, toluene, and methyl ethyl ketone.

### CLEANING GREEN

#### Environmental Attributes To Consider When Selecting Products

- Irritation potential
- Chronic health risks
- Time to ultimate biodegradation
- Bioconcentration factor
- Percentage of volatile organic compounds
- Presence of ozone depleters
- Potential exposure to the concentrated cleaning solution
- Flammability
- Presence of cosmetic additives
- Energy needs
- Amount of product packaging

Source: Cleaning Products Pilot Project, U.S. EPA, 1997

Consider the following benefits of using environmentally preferable cleaning and degreasing products:

- May be less expensive than traditional supplies.
- May help reduce worker exposure to harmful chemicals, reduce the number of sick days taken by workers, increase worker productivity, reduce workers' compensation claims, and improve compliance with OSHA regulations.
- May reduce the quantity of toxins going down your drain, which may help you to comply with wastewater treatment permit requirements.
- May help to reduce customer exposure to certain chemicals, thus reducing the potential for adverse reactions and associated liability.

Many web sites highlight environmentally preferable cleaning supplies, with product descriptions and information on the environmentally preferable substitute for particular hazardous chemicals. ■



Low-VOC paints, which reduce air pollution and the risk of worker exposure, are available from several major manufacturers.



### FOR MORE INFORMATION:

- Defense Logistics Agency  
[www.dscr.dla.mil/products/epa/eppcat.htm](http://www.dscr.dla.mil/products/epa/eppcat.htm)  
Although the DLA site was designed for military customers, its information is valuable and accessible to the commercial sector, as well. You can request a hard copy of the list of product substitutes by calling (800) 345-6333.
- Joint Service Pollution Prevention Technical Library  
<http://enviro.nfesc.navy.mil/p2library>  
This site offers anyone information about less toxic alternative products and services.
- New York State Department of Environmental Conservation, Pollution Prevention Unit  
*Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators*  
This guide offers a straightforward summary of regulations for air, water, and hazardous waste. Call (800) 462-6553 or visit [www.dec.state.ny.us](http://www.dec.state.ny.us).
- U.S. General Services Administration  
*Commercial Cleaning Supplies*  
This catalog lists hundreds of commercially available, environmentally preferable cleaning supplies. Call (800) 241-7246.

**Green Seal**, an independent, nonprofit organization that promotes the manufacture and sale of environmentally responsible consumer products, sets environmental standards and awards a "Green Seal of Approval" to products that cause less harm to the environment than other similar products.

Green Seal-recommended 'green cleaners' must satisfy the following criteria: non-toxic to humans and aquatic life; pass specific aquatic toxicity tests; phosphate and phosphonate concentrations must be less than 0.5% by weight; biodegradable; work optimally when diluted with cold water; and packaged as a concentrate in recyclable/refillable containers with post-consumer recycled content. For more information, visit Green Seal's web site at [www.greenseal.org](http://www.greenseal.org), or call (202) 872-6400.

### TARGETING TOXICS

#### Common Toxic Chemicals Found in Cleaning Products and Degreasers Targeted by the U.S. EPA for Reduction or Elimination

● Acetone	● Aluminum oxide	● Ammonia
● Benzene	● Carbon Tetrachloride	● Chloroform
● 1,2-Dichloroethane	● Ethyl benzene	● Ethylene glycol
● Freon 113	● Glycol ethers	● Hydrochloric acid
● Lye	● Methyl ethyl ketone	● Methyl isobutyl ketone
● Methanol	● Methylene chloride	● Naphtha
● Phenol	● Sodium hydroxide	● Sulfuric acid
● Tetrachloroethylene	● Toluene	● Trichloroethylene
● 1,1,1-trichloroethane	● Xylene	

## Vehicle Fleet Maintenance Tips

**A**irport and airline managers and staff responsible for the performance of the ground service vehicles have tremendous opportunities to cut costs and reduce waste. Charged with keeping the vehicle fleet at peak performance, maintenance staff may not look to waste prevention as a method of reducing operating costs. However, many of the daily activities in maintenance shops generate waste materials that must be discarded or removed as hazardous waste, often at a significant cost.

Initiating a waste prevention program to reduce or even eliminate wastes can save money. This may include altering procedures, introducing more environmentally preferable products and processes, or even modifying the design of the facility. Often, investing in changes to reduce waste also reduces costs and enhances long-term regulatory compliance.

To develop a waste prevention strategy, begin by looking at the total costs of maintaining your fleet and consider the possible options that will cut costs and reduce waste. The following suggestions may help jump start this process.

### Oil

- Lower costs and increase the available floor space in the shop by purchasing and storing fluids in the largest quantities you can use. An overhead, bulk distribution system dispenses fluids accurately, reducing product loss through spills and associated labor and cleanup costs. Meters can track oil consumption, offering an additional recordkeeping benefit. If your shop is not scheduled to undergo renovations and installing an overhead system is not possible, consider purchasing portable bulk dispensing equipment.
- Perform an oil analysis to determine whether oil meets technical performance standards and consider extending the interval between oil changes to reduce purchasing and disposal.
- Consider replacing vehicle oil pan drain plugs with bayonet style quick connectors that can be connected by a flexible hose to a pump that suction the used oil out of the engine into either a portable bowser or a stationary waste oil collection reservoir. This system makes oil changes quicker and cleaner, providing labor and spill management savings.
- In New York State, used oil is not regulated as a hazardous waste if it is recycled or burned for energy recovery. It is important to avoid contaminating used oil with gasoline, solvents or antifreeze. However, you can mix synthetic, hydraulic, cutting, gear and cooling oils with used lubricating oils.
- Consider purchasing re-refined lubricating oil to support continuing markets for reusing used oil, rather than burning it for energy recovery. Re-refined oil is subject to the same refining, compounding and performance standards as virgin oil, is approved for use by the three major U.S. auto manufacturers, and is available at costs comparable to similar virgin oil products.

### Oil Filters

- Used oil filters can be recycled to recover the steel for smelters and the used filter medium and resid-



Tires are a problem waste in New York City. Prolonging their life keeps them out of the waste stream.

ual oils for their energy value. Local vendors offer filter management contracts that provide scheduled or on-call collection of either whole or crushed filters in 55-gallon drums.

### Antifreeze

- Antifreeze recycling has become an industry standard. Facility managers can purchase commercially available equipment that reconditions antifreeze directly back into the vehicle or that processes the coolant after it is removed from the vehicle. Vendors also offer both on- and off-site antifreeze recycling services. Store used antifreeze in polyethylene drums, rather than steel drums, to avoid damaging rust.

### Parts Cleaning

- Aqueous parts washers reduce worker exposure to hazardous chemicals while providing the same level of effectiveness as traditional parts washing techniques. Parts, or even whole engines, can be immersed in a hot water and detergent mixture or rotated while being sprayed with hot water and detergent for a specified cleaning time. Some models are enhanced with ultrasonic technology.
- If aqueous technology is not an option, there are easy-to-implement strategies to extend the performance of the solvent. Remind employees to minimize solvent loss through evaporation and reduce worker exposure to hazardous solvents by keeping the sink closed when it is not in use. Solvent integrity also can be extended by pre-cleaning parts with a rag or brush before placing them in the sink.
- Vendors offer parts cleaning equipment and recycling services for both water- and solvent-based parts cleaning fluids. Since levels of activity may vary within your facility, review your contract for changing out the solvent in your washer. Ensure that it is dirty before allowing the vendor to change the solvent. Ask vendors about filtration as it also can extend solvent life.

### Shop Towels and Rags

- Shop towels and rags, used for maintenance activities, can be laundered and reused, rather than dis-

carded after one use. Companies that supply uniforms or coveralls often also offer rag cleaning services. Maintain clearly marked, separate containers for clean and used rags. Remind staff that oil soaked rags must be managed as hazardous waste and should not be discarded in the regular trash containers.

### Aerosol Cans

- Eliminating the use of aerosol cans is an ongoing management objective in maintenance shops. Many lubricants and cleaners are available in non-aerosol containers, reducing the release of air pollutants and decreasing employee exposure.

- In cases where products are available only in aerosol containers, consider purchasing an aerosol can evacuator. A puncturing device is fitted onto a 55-gallon drum with a charcoal filter fitted into the smaller bung. The aerosol can is punctured and the contents evacuated into the drum. Vapors and propellants are released through the filter. Puncturing and evacuating renders the can nonhazardous and recyclable with other metals. It is recommended that separate drums be established for different materials to avoid contamination. The residual waste contents evacuated from the cans may require management as a hazardous waste.

### Tires

- Routine tire inspection and checks of tire pressure can extend tire life. Tire casings can be repaired as well as recapped and reused. Quality retread tires can be engineered to meet specific driving conditions and used in any position on a vehicle. For tires that are too damaged to recap, tire recycling recovers steel for smelters and rubber for reuse in asphalt, new tires, vehicle bed liners, mats and padding and athletic and recreation surfaces. Shredded tires also can be used as tire-derived fuel. ■



FOR MORE INFORMATION:

- For additional information about waste prevention for maintenance activities, the New York State Department of Environmental Conservation offers several waste prevention guides, including: *Environmental Compliance and Pollution Prevention Guide for Vehicle Maintenance Shops*, *Environmental Self-Assessment for Vehicle Maintenance Shops* and the more general *Environmental Compliance and Pollution Prevention Guide for Small Quantity Generators*. Call (800) 462-6553 to obtain copies.
- The Coordinating Committee for Automotive Repair operates a multi-media, national environmental information center at [www.ccar.greenlink.org](http://www.ccar.greenlink.org).

**FEEDBACK ...** Tell Us What's On Your Mind. We would like to hear from you. Please take a few minutes to let us know: (1) if you find the information provided in *NYC WasteLeSS* useful (2) what waste prevention, recycling, and energy efficiency topics you would like to learn more about and (3) any other thoughts and comments, including your own waste prevention, recycling, and energy conservation success stories. Simply write to us at *NYC WasteLeSS*, NYC Department of Sanitation, 44 Beaver Street, 6th Floor, New York, NY 10004, or you may fax information and comments to us at (212) 837-8255 (attention: *NYC WasteLeSS*). Thank you for your input.

# Advances Continue in the Recycled Product Market

In addition to preventing waste at the source of generation, guaranteeing that reused and recycled products are incorporated into business practices is a key component in improving efficiencies in business. Comparing the original Official Recycled Products Guide, published only a decade ago by American Recycling Market, Inc., to the myriad publications and on-line resources available today, one can quickly see the advances achieved in the recycled-products industry.

Innovative manufacturers and product engineers have improved recycled material processing technologies and developed new systems to create

The new **Austin-Bergstrom International Airport** in Texas, opened in May 1999, is an excellent example of creative and cost-saving use of recycled materials. The Airport itself is recycled, being an adaptive reuse of a decommissioned Air Force base.

Approximately 30% of the existing base structures were reused. According to Jami Kazanoff, Austin's Aviation Public Information Manager, the City was able to save more than \$2 million by recycling approximately 127,000 tons of concrete from the base. The recycled concrete was used as the sub-base for roads and a new runway. Look for a more extensive article on the sustainable building practices used throughout the Austin-Bergstrom project in the upcoming Waste Prevention issue of this newsletter.

Source: Jami Kazanoff, Public Information Manager, Austin Aviation.

products from an expanding variety of recyclable materials. Traditionally, consumers tend to think of paper when they think of recycled-content products. But in the past decade, entire industries have sprung up around manufacturing recycled products.

Today, there is a wide variety of high-quality, cost competitive products made from recycled materi-

Additional products that manufacturers may consider specifying with recycled content include:

#### **Construction & Facilities Maintenance Products**

- Trash bags
- Rubber mats
- Bench seating & tables
- Marble floor tiles
- Wallboard
- Carpeting
- Latex paint
- Restaurant furniture
- Insulation

#### **Operations Products**

- Safety netting & snow fencing
- Wheel chocks
- Road barricades
- Speed bumps

#### **Landscaping Products**

- Planters
- Garden & soaker hoses
- Concrete

als. For example, if you are replacing the floor covering inside the terminal, consider installing the Dodge-Regupol ECOsurfaces rubber flooring made from recycled rubber or post-production rubber scrap. According to Laura Dodge, Marketing Director, of the Lancaster, Pennsylvania-based company, "ECOsurfaces, comprising five new flooring lines with



The New York State Aquarium installed ECO nights™ recycled rubber flooring.

Photo courtesy of Dodge-Regupol, Inc.

a total of 38 refreshing color patterns, is made from a combination of recycled SBR tire rubber and reprocessed post-production EPDM colored rubber."

When replacing crumbling parking stops in lots and garages, consider recycled-plastic parking stops, made from old carpet fibers. Several new Rubbermaid recycled plastic trash and recycling receptacles are made with post-consumer recycled-content material. Even the clothing your airline ground service personnel wears can be made with recycled materials. You may want to consider fleece pullover jackets, sweatshirts, and T-shirts made from recycled PET soda bottles, when purchasing new uniforms. ■



FOR MORE INFORMATION:

For additional information on recycled-content products, vendor lists, specification criteria and product evaluations check the following:

- Buy Recycled Alliance of New York (212) 803-2313
- U.S. EPA's Comprehensive Procurement Guidelines [www.epa.gov/epaoswer/non-hw/procure/index.htm](http://www.epa.gov/epaoswer/non-hw/procure/index.htm) RCRA Hotline (800) 424-9346
- U.S. General Services Administration [www.pub.fss.gsa.gov/enviro/](http://www.pub.fss.gsa.gov/enviro/) (817) 334-5215
- California Integrated Waste Management Board [www.ciwm.ca.gov/rcp/rcpdbint.htm](http://www.ciwm.ca.gov/rcp/rcpdbint.htm) California's Recycled-Content Product Database (916) 255-2708
- Association of New Jersey Recyclers [www.anjr.com/resources/buyrecycled](http://www.anjr.com/resources/buyrecycled) (908) 772-7575  
View the New Jersey Business Guide to Recycled Products.
- King County Department of Natural Resources, Solid Waste Division [www.metrokc.gov/procure/green](http://www.metrokc.gov/procure/green)
- King County's Environmental Purchasing Program [www.metrokc.gov/greenworks/products.pdf](http://www.metrokc.gov/greenworks/products.pdf) — a recycled-content building materials resource (206) 296-6542
- Green Building Resource Guide — a database for purchase of more than 600 building materials and products with recycled-content material. [www.greenguide.com](http://www.greenguide.com)  
Fax request for guide to (650) 364-5116
- U.S. Green Buildings Council — a non-profit coalition providing green building information. [www.usgbc.org](http://www.usgbc.org)

## Port Authority at LaGuardia Airport

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- The lawn mowers used to maintain the airport grounds are mulching mowers designed to clip the grass and leave the small clippings on the lawn, avoiding disposal of plastic bags full of grass.

### Packaging Reduction

- The new cleaning contractor reduced the quantity of waste generated as a result of the custodial activities at the airport by eliminating the use of single-use disposable cleaning products and installing a mixing station that mixes concentrated product and dispenses product into reusable spray containers. Switching from disposable containers to a mixing station eliminated a significant quantity of packaging material from the waste stream.

### Toxicity Reduction

- A review of the products on the shelves in each of the operations yielded a handful of products that contain chemicals targeted by the U.S. Environmental Protection Agency for reduction or elimination. The Port Authority of NY & NJ has an "environmentally approved products" program to help guide purchasing decisions and to encourage the use of non- or less-toxic products.

### Water conservation

- As part of an overall renovation plan, Port Authority is replacing existing toilets and sinks in the airport terminal restrooms with water conserving fixtures. A simple analysis of the water conservation program indicates annual water and sewer savings of \$125,000, offering a payback period of eight months.

According to Sagrestano, "We talked to employees in each of our operations to find out what they believed were the biggest waste streams and to seek their input about how to reduce or prevent the wastes generated by the operation. We learned from the start of the project that involving managers and environmental staff was one of the keys to achieving success."

The Port Authority of NY & NJ at LaGuardia Airport continues to seek new ways to reduce the impact of its operations on the environment. Future plans call for increased energy savings through enhancements to the electrical and mechanical operations and infrastructure. There also are plans underway to increase the availability of alternative fuel at the City's airports for use by airlines, airport service tenants, as well as the general public. ■

## Stop, Look and Calculate

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that the key to successful waste management is to review your waste carting contract to ensure that your trash is being collected in the most economical way to best suit your operation. If you are paying a flat fee, take a look at the number of pick-ups and determine if a "per pull" system might be more economical.

If you are currently charged on a per pull basis, check to see that you are not paying for compactors and containers to be removed when they are less than full. Your waste prevention efforts will only pay off financially if you reduce the cost of waste disposal by reducing the number of pulls you pay for.

If you have a trash compactor, you are paying the higher rate charged for compacted waste. Consider

### Six Simple Steps That Can Save You Money

- Ensure that your compactor is operational, has working gauges, and that staff checks gauges prior to pulls to make sure compactors and dumpsters are full.
- Confirm that your trash bills comply with the TWC's maximum legal rates for removal of waste.
- Request a waste stream survey by your carter to help you establish a baseline waste generation rate.
- Monitor your containers to ensure that recyclables are not being discarded with general trash.
- Reduce the frequency of pick-ups as recycling and waste prevention activities reduce the quantity of waste discarded.
- Ensure that your carter has not incorrectly classified your open dumpsters as construction and demolition (C&D) debris, for which there are no maximum rates. Waste from normal daily activities should not be considered C&D waste.

what type of waste you discard in your compactor. Is it waste that can be compacted? For some materials that can be compacted significantly, a compactor may be much more economical than a dumpster, but many businesses find that they are paying for a compaction ratio that is not possible to achieve. For example, food waste is not easily compacted. Therefore, collecting food waste in a dumpster instead of a compactor may

### TRADE WASTE COMMISSION MAXIMUM RATES

Rate	Service
\$30.19	per cubic yard for compacted trash
\$12.20	per cubic yard for loose trash
\$2.66	for 55-gallon trash bags > 80% full
\$1.45	for 30-gallon trash bags > 80% full

be less expensive. However, you also must consider the odor and vector problems caused by food waste and weigh the advantages and disadvantages of collecting in an open container versus a sealed compactor.

One New York City business recently switched from a flat fee to a "per pull" system and discovered that its carter was billing based on loose waste prices. However, the business had both compactors and open-top dumpsters. To make the billing uniform, the carter elected to charge the loose waste price by converting the compacted waste volumes to a loose waste volume using a conversion ratio.

Not only did these converted volumes create a higher price, but the carter used conversion ratios that were unreasonable (2:1 or 3:1 are standard), making the volumes and, therefore, the price even higher. Using the business's waste volumes and TWC's maxi-

mum prices as an example, the business estimated that they were being overcharged almost \$10,000 per month – a significant cost to the company. ■



FOR MORE  
INFORMATION:

For more information, contact the New York City Trade Waste Commission at (212) 676-6275.

## Joining EPA's WasteWise Program

The U.S. Environmental Protection Agency's WasteWise program can provide a framework for your waste prevention program and other waste reduction efforts.

WasteWise is a free, voluntary partnership program that encourages organizations to reduce waste through waste prevention, recycling, and buying or manufacturing products with recycled content. WasteWise provides partners with technical assistance, publications, and public recognition opportunities. WasteWise partners saved an estimated \$26 million in avoided disposal costs in 1997, and avoided paper purchasing costs for all the program's partners in 1997 could be as high as \$60 million, according to the Fourth Year WasteWise Progress Report, published by U.S. EPA in September 1998.

For more information, visit the WasteWise Web site at [www.epa.gov/wastewise](http://www.epa.gov/wastewise) or call the WasteWise helpline at (800) 372-9473 for a free information packet. ■



Lorraine Graves, an Environmental Specialist with the U.S. Environmental Protection Agency, Region II, explains the benefits of the WasteWise program to a group of airport and airline managers.