ENVIRONMENTALLY PREFERABLE PURCHASING

The New York City Department of Sanitation
Bureau of Waste Prevention, Reuse and Recycling
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Addendum
to
Environmentally Preferable Purchasing Guide
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Section 1.0, page 7, footnote at bottom of page, – The Department of Sanitation's estimated cost to collect and dispose of waste from City agencies, institutions, and residents is now $242/ton. This per ton cost is also applicable for Exhibit 8A on page 58, Exhibit 8B on page 59, Exhibit 8C on page 60, and Exercise A – Question 2 on page 105.

Section 1.1, page 9, last paragraph - The Fresh Kills landfill has closed. The cost for the City to dispose of the 150,000 tons of waste annually generated by City Agencies is now approximately $36.3 million.

Section 2.4, page 15, last sentence – The USEPA Comprehensive Guidelines have now designated 61 recycled content categories for procurement by government agencies. Reference to these categories is made again on page 35, the Section 4 Checklist, and Appendix 1. A full listing of the most current categories and their Recycled Material Advisory Notices can be found at www.epa.gov/cpg.

Section 3.4, page 25, 2nd paragraph – DCAS no longer maintains a Surplus Warehouse. Access to surplus goods can now be learned of through the Office of Surplus Activities website at www.nyc.gov/html/dcas/html/dmss/osa.html or by calling (212) 669-8550.

Section 6.1, page 47, last paragraph – There are now 40 product categories that qualify for the ENERGY STAR label. Information about ENERGY STAR purchasing can now be found at www.energystar.gov.

Special Note – While many of the website resources listed throughout the Environmentally Preferable Purchasing Guide are accurate, it is likely that a number of them have changed since 2001. A quick search on any Search Engine should take you to the new address of any resource you may be interested in.

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The Bureau also would like to acknowledge their debt to the following resources:

Ken Brown's *Source Reduction Now*, second edition, produced by the Minnesota Office of Environmental Assistance in 1996 and available from their website **www.moea.state.mn.us**;

Waste at Work: Prevention Strategies for the Bottom Line by John Winter and Anne Marie Alonso, published by INFORM Inc. in 1997 and available on their website **www.informinc.org**;

And last but definitely not least, Alameda County CA Source Reduction and Recycling Board's *Resourceful Purchasing* by Nancy VandenBerg, Susan Kinsella, and Carla S. Lallatin, produced in 1996 and available on their website **www.stopwaste.org**.

GLOSSARY OF SELECTED ABBREVIATIONS

ACCO	Agency Chief Contracting Officer
CPG	USEPA's Comprehensive Procurement Guideline
DCAS	Department of Citywide Administrative Services
DEC	New York State Department of Environmental Conservation
DMSS	DCAS' Division of Municipal Supply Services
DOS	Department of Sanitation
DOT	Department of Transportation
EPP	Environmentally Preferable Purchasing
GSA	U.S. General Services Administration
MSDS	Material Safety Data Sheet
OSHA	U.S. Occupational Safety and Health Administration
PBT	Persistent, Bioaccumulative, and Toxic chemicals
PPB	Procurement Policy Board
RCRA	Resource Conservation and Recovery Act
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compound

Section 1 Introduction

1.1 Why Environmentally Preferable Procurement Is Important for New York City
1.2 The Mayoral Directive
1.3 Moving Forward

1.0 Introduction

An Example of Environmentally Preferable Purchasing in Action

Historically, City employee procurement responsibilities have emphasized the purchase of the lowest priced materials or equipment that meets City Agency performance standards. Consider the following example. Staff of the Department of Sanitation proposed the purchase of a new soap to clean collection vehicles. They were enthused to find that an alternative product was available that would reduce packaging waste, reduce labor, and conserve water. Tests proved that it even was less irritating to their skin. And all this for only 75 cents more per gallon!

Purchase of soap REJECTED based on higher purchase price.

Backed by a rigorous Environmentally Preferable Purchasing (EPP) program, staff could have accessed the resources to demonstrate to the purchasing decision maker that this product also would save the City $28,000 per year.

- The current product meets performance standards when mixed at a ratio of two parts water to one part soap (2:1); the substitute product performs at a ratio of thirty parts water to one part soap (30:1).
- DOS currently purchases 390 55-gallon drums of soap, or 21,450 gallons of soap concentrate that produces 42,900 gallons of usable product.
- The current product is delivered in non-returnable 55-gallon plastic drums weighing 10 pounds each; the substitute product is pumped directly into a bulk storage tank, provided by the vendor at no cost.
- The current product requires 20 to 25 minutes of labor per drum to mix it with water; the substitute tank includes a self-mixing mechanism and no additional labor is needed.

Cost	Current product	Substitute product
Price of concentrate	$1.25/gallon	$2.00/gallon
Price per gallon of cleaning solution	at 1:2 ratio $0.625/gallon	at 1:30 ratio $0.067/gallon
Cost of one year's supply (42,900 gallons)	$26,812.50	$2,874.30
Cost of Agency labor to prepare soap	390 drums x 25 minutes @ $21 per hour = $3,412.50	$0
Cost of waste disposal‡	2 tons @ $151 = $302	$0
TOTAL ANNUAL COST	**$30,527.00**	**$2,874.30**

‡The Department of Sanitation estimates that on average it costs $151/ton to collect and dispose of waste that it handles from City agencies, institutions, and residents.

This **Environmentally Preferable Purchasing Manual** and the Procurement Training Institute course, *Introducing Environmentally Preferable Purchasing,* are provided to suggest strategies for optimizing purchasing decisions in terms of environmental performance, product performance and cost to New York City Agencies. The manual offers guidance and suggestions for employees of New York City Mayoral Agencies responsible for buying the goods and services that keep the City's government operating.

Many of the costs associated with the use of a product—such as final disposal costs—are never factored into purchasing decisions because these costs are invisible to most City Agency personnel. In this course we will introduce and discuss ways to expose some of these hidden costs. By understanding all the costs associated with the use of a product, City Agencies are better able to make purchasing decisions that incorporate environmental concerns as well as high performance standards.

Purchasing staff often lack the time and necessary resources to perform the research, product evaluation, and life-span analysis needed to introduce new, environmentally preferable products into their Agencies. This manual presents the basic information to assist City Agencies in establishing an enhanced environmentally preferable purchasing agenda.

Section 1 offers information on the status of waste management and waste prevention requirements in New York City.

Section 2 defines environmentally preferable purchasing and describes the regulatory requirements that apply to New York City Agencies.

Sections 3 through 6 describe options for environmentally preferable purchasing, including buying waste preventing products, recycled content products, less-toxic products, and energy efficient products.

Section 7 provides guidance on developing an Agency Environmentally Preferable Purchasing policy.

Section 8 explains how to develop bids for environmentally preferable products and services.

Section 9 explains how to monitor and track your Agency's progress.

Section 10 provides a list of additional resources to support efforts to implement an Agency Environmentally Preferable Purchasing program.

To help you implement an EPP program, **Sections 2 through 9** contain easy-to-use checklists which provide a synopsis of the main points covered in each section.

1.1 Why Environmentally Preferable Procurement Is Important for New York City

OBJECTIVES:

- **Understand the cost implications of the closure of the Fresh Kills Landfill.**
- **Review the requirements of the Mayoral Directive.**

Historically, the Fresh Kills Landfill on Staten Island has provided an inexpensive disposal option for the more than four million tons per year of municipal solid waste generated by the residents, institutions, and Agencies of the City of New York. However, in November 1996, a Task Force established by New York State Governor George Pataki and New York City Mayor Rudolph Giuliani issued *A Plan to Phase Out The Fresh Kills Landfill*. Central to the *Plan* are strategies to maximize waste prevention, recycling, and composting to reduce the overall volume of waste generated within the City. The New York City Department of Sanitation (DOS) is responsible for establishing contracts for the collection, transfer, and export of solid waste from the five boroughs to privately owned facilities outside of the City. The New York State Environmental Conservation Law (Chapter 170 of the Laws of the State of New York) has been amended to incorporate a mandate for the landfill's closure on January 1, 2002.

Often, City Agency personnel do not recognize the costs associated with the collection and disposal of wastes generated by their daily activities. Whether DOS or a private carter collects your trash and recyclables, there is a cost to the City for this collection service. Then there is an additional cost to dispose of the waste. With the phased-in closure of the Fresh Kills Landfill under way, disposal costs are increasing. To give you a sense of the size of these costs, City Agencies generate approximately 150,000 tons of waste each year, which costs the City approximately $22.6 million to collect and discard.

Although planning and implementing Environmentally Preferable Purchasing (EPP) practices may involve a significant initial time commitment, cost savings accrued over time may ensure that waste disposal costs do not create a significant budgetary impact for the City.

With this in mind, all City employees have a responsibility to implement waste prevention programs to reduce the current and future costs of managing the City's waste.

City employees who purchase goods and services can make a great difference in this area. Although planning and implementing environmentally preferable purchasing practices may involve a significant initial time commitment, cost savings accrued over time from overall reductions in the quantity of waste generated and managed may ensure that waste disposal costs do not create a significant budgetary impact for the City.

1.2 The Mayoral Directive

Waste prevention, enhanced recycling, and environmentally preferable purchasing offer a variety of advantages to the operations of New York City government. Among these advantages are:

- Increased worker safety.
- Increased awareness of environmental issues.
- Enhanced communication between and among City Agencies.
- Opportunities for resource conservation.
- Long-term reductions in purchasing and labor costs.

The Mayoral Directive requires City Agencies to seek opportunities to reduce waste through the procurement process by reviewing specifications, administering vendor surveys, and purchasing environmentally preferable products.

Recognizing these benefits to the City, in 1996 Mayor Giuliani issued the *Mayoral Directive on Waste Prevention and Efficient Materials Management Policy* (MD 96-2). The *Mayoral Directive* requires City Agencies to implement specific waste prevention measures to increase efficiency and reduce costs of City Agency operations, while decreasing the quantity of solid waste set out by those Agencies for collection by DOS or private carters.

The Mayor's Office of Operations established an Inter-Agency Waste Prevention Task Force to oversee the City's waste prevention initiatives. Each City Agency has a Waste Prevention Coordinator, who is responsible for the ongoing implementation of the *Mayoral Directive*.
The *Mayoral Directive* requires the Department of Citywide Administrative Services (DCAS) and the Mayor's Office of Contracts to develop plans for incorporating waste prevention into the purchase of goods and services for City Agencies. The *Mayoral Directive* also requires City Agencies to seek opportunities to reduce waste through the procurement process by reviewing

specifications, administering vendor surveys, and purchasing environmentally preferable products.

1.3 Moving Forward

Reducing the environmental impacts of the products and services commonly used by City Agencies can have a positive impact on your Agency's bottom line. A focus on Environmentally Preferable Purchasing (EPP) will encourage City Agencies to purchase products that:

- Prevent waste.
- Reduce toxicity.
- Contain recycled material.
- Conserve energy.

This course will introduce the long-term benefits of EPP and address how EPP can:

1. Reduce overall costs and improve the workplace environment.
2. Strengthen markets for recyclable materials, while reinforcing the viability of our Citywide recycling program.
3. Promote the use of less-toxic products to protect the health and safety of City workers while minimizing potentially harmful emissions to air and water.
4. Minimize Agency energy costs by promoting the purchase of energy conserving appliances, equipment, and fixtures.

City Agencies are not in this alone. Agencies of the Federal government, including the United States Environmental Protection Agency (USEPA), the Department of Energy (DOE), and the General Services Administration (GSA), have evaluated specific environmental properties, such as recycled content or energy efficiency, and have developed guidance for purchasing products that meet their standards. Other private organizations, such as GreenSeal and Scientific Certification Systems, certify the environmental attributes of products and can serve as information resources.
As New York City employees, you play a vital role in helping your Agencies to incorporate environmentally sound procurement, performance, and waste management decisions into daily operations. While the Division of Municipal Supply Services (DMSS) establishes Requirements Contracts for procurement in excess of $25,000, most of the products and services your

Agency uses are purchased by Agency staff, based on specifications developed by the employees who use the products. You can ensure that the products and services purchased for your Agency meet your EPP goals through the specifications you write.

Most of the products and services used by your Agency are purchased by Agency staff, based on Agency specifications. You can ensure that the products and services purchased for your Agency meet your EPP goals through the specifications you write.

Your efforts are crucial to the success of the strategies in the *Mayoral Directive* and can encourage New York City toward a leadership role in local government waste prevention, recycling, and environmentally preferable procurement.

Section 2 What Is Environmentally Preferable Purchasing?

2.1 The Importance of Waste Prevention
2.2 Isn't Recycling Preventing Waste?
2.3 Energy Efficiency and Reduced Toxicity
2.4 Procurement Rules and Regulations
2.5 Definitions

Section 2 Checklist: Steps to Establishing an EPP Program

2.0 What Is Environmentally Preferable Purchasing?

OBJECTIVES:

- **Establish shared definitions of useful environmental terms.**
- **Review New York City Rules and Regulations that apply to Agency purchases.**

Environmentally Preferable Purchasing, or EPP, refers to the practice of specifying products with environmental attributes, such as reduced packaging, reusability, energy efficiency, recycled content, and rebuilt or remanufactured products, in your Agency's bids and contracts.

EPP refers to the practice of buying products or services that have a lesser or reduced impact on the environment and human health, when compared with competing products or services that serve the same purpose.

Throughout this course, EPP will refer to the practice of buying products or services that have a lesser or reduced impact on the environment and human health, when compared with competing products or services that serve the same purpose.

Purchasing is the first step in waste generation. The purchasing process offers an opportunity to reduce the environmental impacts of products and packaging.

Ideally, all of your purchasing decisions are based on an evaluation of environmental criteria, along with product performance, price, and availability. Think of the purchasing process as the port of entry for all of the products and materials that you and your colleagues unwrap, use, and eventually discard as waste. Considering the environmental benefits or consequences of your purchases before you issue an Invitation to Bid may reduce purchasing costs as well as the quantity of products and packaging that your Agency discards or recycles.

2.1 The Importance of Waste Prevention

WASTE PREVENTION can eliminate or reduce the amount or the toxicity of your Agency's waste.

Waste prevention means eliminating or reducing the amount or the toxicity of your Agency's waste, including recyclables. Waste prevention policies require staff to use products and materials efficiently. Waste preventing activities include buying products and materials that are reusable, more durable, and/or repairable. Specifying items that have less packaging or are less toxic than alternative products or packaging is another waste preventing option.

The United States Environmental Protection Agency (USEPA) prioritizes options for managing waste in descending order of preference. The waste management hierarchy encourages those approaches that minimize the

generation of solid and hazardous wastes and other environmental releases. Waste prevention is assigned the highest priority because it emphasizes elimination or reduction of waste at the point of generation.

The Waste Management Hierarchy:
- **Waste Prevention**
- **Reuse/Recycle**
- **Treatment**
- **Disposal**

Reuse is another waste prevention option. Buying reusable items (such as rags or dishes) and rechargeable products (batteries, toner cartridges) reduces long-term purchasing costs and cuts down on product and packaging waste. Refillable containers also reduce the generation of packaging waste by eliminating discarded containers and the packaging associated with the purchase of the new containers. Targeting reusable items as part of an environmentally preferable purchasing program will be discussed in greater detail in Section 3.

2.2 Isn't Recycling Preventing Waste?

RECYCLING refers to the practice of separating certain products and materials from the waste stream for the purpose of reprocessing them into feedstock for the manufacture of new products.

The act of separating materials for recycling is not considered waste prevention, because although the separated materials will be used to make new products, waste was still generated. However, as you will learn, buying products manufactured from recycled materials is an important part of an environmentally preferable purchasing program.

Recycling is required by local law in New York City.

Recycling is the law in New York City. Local Law 19 (of 1989) and Local Law 87 (of 1993) specify the materials that City Agency operations must separate for recycling. Mandatory recyclables for City Agencies include paper and cardboard in addition to beverage cartons, bottles, cans, metal, and foil. Through your Agency's recycling program, materials that otherwise would be sent to landfills for final disposal will be used to manufacture new products and packaging. [See Section 3 Checklist for complete list of required recyclables in NYC Agencies.]

EPP Tip: Waste Prevention

Consider installing software to generate letterhead and business forms. This reduces the need to purchase large quantities of pre-printed letterhead only to discard it and buy more when a new Commissioner is appointed or your office moves to a new location.

With 14 Deputy Commissioners and 12 regional headquarters, the stationery needs of the Department of Environmental Protection (DEP) were constantly changing. DEP developed a standard, simple format for letterhead with the DEP logo and the Commissioner's name. Then, they installed computer templates, one for each office, that allow staff to print onto the letterhead to personalize it. Since the Agency prints 2,000–3,000 sheets of letterhead for each Deputy Commissioner, this waste prevention effort eliminates 6 reams or 30 lbs of paper waste and saves $144 for each new appointee.

Equally important to the recycling process is the purchase of products manufactured with recycled content. By purchasing recycled products, you help create long-term markets for the recyclable materials collected from your Agency, your home, and the businesses and institutions that you patronize. You also promote new business and employment opportunities, and conserve resources for our future. To encourage manufacturers to produce more recycled products, demand for these goods must be enhanced and sustained.

Buying recycled products is an essential component of a successful recycling infrastructure for New York City.

2.3 Energy Efficiency and Reduced Toxicity

EPP also includes the purchase of energy efficient products, which reduce Agency utility bills and help conserve natural resources. The newest energy efficient motors, pumps, electronic equipment, appliances, signs, and lighting operate on less energy than older, less efficient products. Energy efficient windows, insulation, and roofing also reduce energy use and costs.

EPP Tip: Recycled Content

By specifying recycled content in the products you purchase, you can close the recycling loop. The circle begins when your office separates and recycles used paper. This paper is sold to a processor and comes full circle to become part of the raw materials used to manufacture new paper. When you buy recycled content paper, the circle is complete.

Reducing the amount of hazardous materials in the workplace by purchasing less-toxic or non-toxic products lowers the potential for worker exposure to toxic chemicals and ensures a healthier and safer work environment. Product substitutions can mean fewer regulatory reporting requirements, less liability exposure and Workers' Compensation claims, and fewer absences due to illness or injury. These translate into higher productivity and lower costs for your Agency.

2.4 Procurement Rules and Regulations

USEPA developed Comprehensive Procurement Guidelines for recycled products.

Environmentally preferable purchasing is not just innovative, cost-effective purchasing concepts—it is the law. The 1986 amendments to the Federal Resource Conservation and Recovery Act (RCRA) required USEPA to develop guidelines for the purchase of products with recycled content. Through the Comprehensive Procurement Guideline (CPG), USEPA has

designated 54 recycled content items for procurement by government agencies, and new products are added every two years. A list of these products is located in Section 4.3 of this manual, and recycled content requirements for each product type are summarized in Appendix 1. These guidelines are based on extensive research and testing to ensure that the products with recycled content meet or exceed existing or new performance standards *and* that the recycled content products are readily available at a reasonable price. USEPA's research shows that the recycled content products are of high quality, widely available, and cost competitive with virgin products—requirements for any product category added to the guidelines.

Did you know that when a City Agency spends more than $10,000 per year on a USEPA-designated product, if *any* of those funds are appropriated Federal funds, the agency must purchase the recycled content version of the item.

The requirement for government agencies to purchase these recycled content products is established in RCRA and Executive Order 13101, *Greening the Government through Waste Prevention, Recycling and Federal Acquisition*. The requirements apply to Federal, state, and local government agencies, and their contractors, that use appropriated Federal funds. Any New York City Agency that receives federal funding for a program or project and uses that funding to purchase more than $10,000 of a product designated by the Comprehensive Procurement Guidelines must comply with the specified minimum levels of recycled content in purchases of that product.

As part of the New York State's commitment to promote waste reduction and the expansion of markets for recovered materials, the New York State Finance Law, Article XI, State Purchasing, §163 established the following standard:

> **All products purchased by the commissioner or other state agencies shall be recycled products which meet the contract specifications**, unless the product is only available without recycled content, and provided that the cost of the recycled product does not exceed a cost premium of ten percent above the cost of a product made without recycled content or, if at least fifty percent of the secondary materials utilized in the manufacture of that product are generated from the waste stream in New York State, the cost of the recycled product does not exceed a cost premium of fifteen percent above the cost of a comparable product that is not a recycled product.

The New York State Finance Law has been revised by Chapter 95 of the Laws of 2000. Revisions to §163 increase the discretionary limit for the purchase, without formal competitive bid, of commodities or technology that are recycled or remanufactured to $50,000. Revisions to §165 define "recycled,"

"remanufactured," and "recyclable" commodities and provide for their purchase when they meet the form, function, and utility requirements. State agencies are expected to consider the cost of a commodity over its life cycle.

The applicability of these standards to purchasing by the City of New York has been established through the local requirements cited below:

- The Local Law 19 §16-301 requires that all Agencies and Departments of the City of New York **purchase products manufactured with recycled materials whenever practicable.**

- The Local Law 19 §16-322(d) *City Purchase of Products Made from Secondary Materials* states: "**When purchasing paper products and other products pursuant to this section, the Department of General Services [**DCAS**] shall utilize the United States Environmental Protection Agency minimum content standards for recycled materials content promulgated pursuant to 42 USC §6901** *et seq*."

- The *Rules Concerning Contracts for the Purchase of Products Containing Secondary Material and Minimum Secondary Material Content Standards for the Purpose of Establishing Price Preference Eligibility (*Department of General Services [DCAS], 1992). Section 7-01 (b) states,
" . . . **[DMSS] shall utilize all minimum content standards for secondary materials subsequently promulgated or amended by either USEPA or the New York State Department of Environmental Conservation (DEC), and if there is a conflict between USEPA and DEC standards, [DMSS] shall utilize the highest standard that it is permitted to utilize by section 16-322 of the Administrative Code**."

DMSS may restrict bids solely to products composed of **specified** minimum secondary material content levels and bidders may be eligible for a price preference if the product contains an amount of secondary material that is equal to or greater than the minimum content standard specified in these rules.

Rules for purchasing goods and services for New York City Agencies are established and administered by the Procurement Policy Board (PPB). The Department of Citywide Administrative Services (DCAS), Division of

Municipal Supply Services (DMSS) oversees the City's centralized procurement process and contracts for more than $700 million in goods each year. High volume, frequently used commodity purchasing is performed by DCAS using a competitive, sealed bid procedure. DMSS warehouses a $7 to $8 million inventory of products and materials at the DCAS Central Storehouse and provides access to these products through the Central Storehouse Commodity Catalog.

The DMSS Bureau of Procurement works with the requesting City Agency to develop specifications for bids. It also coordinates access to and maintains approximately 1,200 Requirements Contracts for those products and materials routinely purchased by City Agencies in annual amounts of more than $25,000. DCAS maintains a list of vendors who wish to bid on City contracts and issues an Invitation to Bid to vendors offering the appropriate products. Each Invitation to Bid contains product specifications developed by the procuring agency and DMSS. Vendors submit sealed bids and DMSS generally is required to select the lowest bid. Agencies may use certain New York State procurement contracts, the Staples catalog for direct delivery of office products, and also may directly purchase and receive delivery of other goods and services. Each Mayoral Agency has an Agency Chief Contracting Officer (ACCO) whose staff oversees Agency purchases of goods and services through DMSS, as well as independent purchases.

The PPB Rules state that "A bid may not be evaluated for any requirement or criterion that is not disclosed in the Invitation for Bids."

You can increase New York City's environmentally preferable purchases if you incorporate into all Invitation for Bids detailed information about how the product or material will be used, the minimum performance standards for that product, and the environmental criteria you would like the product to meet. The PPB Rules §3-02(o)(1) state that "*A bid may not be evaluated for any requirement or criterion that is not disclosed in the Invitation for Bids.*"

Buyers purchase the lowest cost product that meets the user's specifications. Agencies can compare products on the basis of environmental attributes only if those environmental attributes appear in the bid specifications.

The responsibility of New York City buyers is to purchase the lowest cost product that meets the **user's** specifications. It is the intent of the PPB Rules that only objectively measurable criteria set forth in the Invitation for Bids shall be applied in determining the lowest responsive and responsible bid. Thus, DCAS purchasing agents, Agency ACCOs, and other New York City Mayoral Agency purchasers can only compare products on the basis of environmental attributes if the Agency staff initiating the procurement incorporates those environmental attributes into the bid specifications. Ideally, the persons who will use an item or service and the purchasing staff

will work cooperatively to incorporate environmental specifications into bids and to monitor purchasing decisions.

2.5 Definitions

Accurate definitions help vendors offer products with the environmentally preferable attributes you really want. The best definitions describe your specific expectations and priorities, but apply to a range of products and materials. You can use the definitions that follow as guides to assist your Agency in developing specifications and standards that meet current policy objectives and market conditions.

Post-consumer Material: Refers to those products, packages, or materials generated by a business or consumer which, *after* serving their intended end use as consumer items, have been separated from the waste stream for recycling into new products. Examples of post-consumer material include paper, magazines, or catalogs from an office, or empty plastic or aluminum beverage containers from a food service operation.

Pre-consumer Material: Refers to those materials or by-products generated in the manufacture of a product *before* it reaches the consumer, which have been diverted from the waste stream for recycling into new products. Pre-consumer material does *not* include mill broke and manufacturing trim or scrap that is generated and reused at a manufacturing site. Examples of pre-consumer material include unsold magazines or newspapers that are returned by the publisher for use in future paper products.

Recovered Material: Products and materials destined for disposal that have been diverted for processing into feedstock for new products. Includes both pre-consumer and post-consumer materials.

Recyclable: Materials that have been designated for recycling collection by a municipality. In New York City, the following materials are recyclable: mixed paper, beverage cartons, bottles, cans, metal, and foil products.

Recycled Product: A product manufactured with a portion of recovered material—preferably the highest amount practicable for the specific product type.

Remanufactured Product: Any product diverted from disposal for refurbishing, repair, and resale, without substantial change to its original form.

Reusable Product: A product designed to be used many times for the same purpose without additional processing.

Waste Preventing Product: A product that results in a net reduction in waste generation, when compared to traditional products. Includes durable, reusable, and remanufactured products; products with reduced packaging; and products with fewer toxic constituents.

Section 2 Defining Environmentally Preferable Procurement

Steps to Establishing an EPP Program

EPP refers to the practice of buying products or services that have a lesser or reduced impact on the environment and human health, when compared with competing products or services that serve the same purpose.

Completed	Task
☐	1. Provide clear definitions in bid documents and discussions with vendors to guide the purchase of environmentally preferable products and services. See back of checklist for sample definitions.
☐	2. Review the USEPA's lists of environmentally preferable products to determine if the product you are purchasing is on the list. If so, determine if your Agency spends more than $10,000 per year on an EPA-designated product. If *any* of those funds are appropriated Federal funds, the agency *must* purchase the item with recycled content.
☐	3. For questions regarding authority to establish an EPP program, refer to the following: Local Law 19 §16-301 requires that all Agencies and Departments of the City of New York purchase products manufactured with recycled materials "whenever practicable." Local Law 19 §16-322(d) *City Purchase of Products Made from Secondary Materials.* *Rules Concerning Contracts for the Purchase of Products Containing Secondary Material and Minimum Secondary Material Content Standards for the Purpose of Establishing Price Preference Eligibility* (Department of General Services [DCAS], 1992). Section 7-01 (b). Mayoral Directive MD96-2 (1996): *Waste Prevention and Materials Management Policies* §2(a) Procurement.
☐	4. Remember, you can only compare products on the basis of environmental attributes if the Agency staff initiating the procurement incorporated those environmental attributes into the bid specifications.

Definitions

Establish definitions that serve as guides for developing specifications.

Post-consumer Material: Refers to those products, packages, or materials generated by a business or consumer which, after serving their intended end use as consumer items, have been separated from the waste stream for recycling into new products. Examples of post-consumer material include paper, magazines, or catalogs from an office, or empty plastic or aluminum beverage containers from a food service operation.

Pre-consumer Material: Refers to those materials or by-products generated in the manufacture of a product before it reaches the consumer, which have been diverted from the waste stream for recycling into new products. Pre-consumer material does not include mill broke and manufacturing trim or scrap that is generated and reused at a manufacturing site. Examples of pre-consumer material include unsold magazines or newspapers that are returned by the publisher for use in future paper products.

Recovered Material: Products and materials destined for disposal that have been diverted for processing into feedstock for new products. Includes both pre-consumer and post-consumer materials.

Recyclable: Materials that have been designated for recycling collection by a municipality. In New York City, the following materials are recyclable: mixed paper and cardboard; beverage cartons, bottles, cans, metal, and foil products.

Recycled Product: A product manufactured with a portion of recovered material—preferably the highest amount practicable for the specific product type.

Remanufactured Product: Any product diverted from disposal for refurbishing, repair, and resale, without substantial change to its original form.

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Waste Preventing Product: A product that results in a net reduction in waste generation, when compared to traditional products. Includes durable, reusable, and remanufactured products; products with reduced packaging; and products with fewer toxic constituents.

On-Line Resources

US Environmental Protection Agency's Environmentally Preferable Purchasing home page: **http://www.epa.gov/opptintr/epp.**

National Association of Counties Environmentally Preferable Purchasing Project: **http://www.naco.org/programs/environ/purchase.cfm.**

Minnesota Office of Environmental Assistance: **http://www.moea.state.mn.us/lc/purchasing/index.cfm.**

Environmentally Preferable Products (EPP) Procurement Program of the Commonwealth of Massachusetts: **http://www.state.ma.us/osd/enviro/enviro.htm.**

Section 3 Purchasing for Waste Prevention

3.1 Buy Products that Eliminate Waste
3.2 Buy Durable Products
3.3 Replace Single-Use Disposables
3.4 Consider Used or Remanufactured Products
3.5 Lease Rather than Purchase
3.6 Reduce Packaging
Exhibit 3A: Sample Vendor Survey
3.7 Recyclability

Section 3 Checklist: Review, Research, and Reduce Wasteful Products

3.0 Purchasing for Waste Prevention

OBJECTIVES:

- **Become familiar with the concept of waste prevention.**
- **Become familiar with waste preventing programs and products applicable to City Agencies.**

The primary objective of an Agency's waste prevention program is to reduce the amount of waste that has to be managed. Waste preventing products are durable, reusable, rechargeable, and refillable. They achieve the same performance as their more wasteful counterparts, while reducing waste quantities and costs.

Waste preventing products achieve the same performance as their more wasteful counterparts, while reducing waste quantities and costs.

Identifying and purchasing waste preventing products and services may at first require some extra time to research available options. This manual provides you with easy-to-access resources that can save you time in identifying waste preventing products. Unlike recycled content products, no government- or private sector-mandated standards have been established for waste preventing products. However, the purchasing process offers a wide variety of opportunities to prevent waste. While the examples provided in this manual are only a sampling of the available choices, consider the waste preventing possibilities inherent in the following approaches:

3.1 Buy Products that Eliminate Waste

One approach to preventing waste may be to change the way a job is accomplished and eliminate a product altogether. Another may be to purchase a more environmentally sound product to perform the same task. Identifying opportunities to eliminate waste is the first step. For waste that cannot be eliminated, consider strategies to reduce the quantity of waste.

Governments with active EPP programs often discover that those products which offer long-term, positive performance impacts, such as increased efficiency and/or reduced maintenance, often reduce waste as well. Targeting products and materials for elimination or reduction is one of the quickest ways to reduce the quantity of waste generated by your Agency. For each purchase you make, begin by asking yourself a series of questions, including:

- Do we really need this product?

■ Is there a way to achieve the same goal without creating a waste?

Eliminating products requires staff cooperation and a willingness to step back and review how a product is used to determine if there is a way to change a process or to simply stop a wasteful practice. The following table lists some opportunities for City Agencies to change the way they do business, to eliminate waste and save money.

As we all know, change is frequently met with heavy resistance in the workplace. Purchasing staff often bear the brunt of the frustration that can result from a change in a product or service. One way to address this is to

Waste Preventing Behavior	Waste Prevention Results
Offices	
Print forms on demand	Eliminates the need and cost to store large quantities of pre-printed forms that may become outdated and require disposal.
Offer reports and publications on disk or CD	Eliminates the need to print and store a large number of reports that become outdated and eventually are discarded or recycled. Reduces the quantity of paper purchased.
Specify photocopiers set to double-side copies	Reduces the quantity of paper purchased and the amount disposed or recycled. Reduces costs by as much as 30 percent.
Food Service	
Use refillable dispensers for condiments and beverages	Reduces purchasing costs. Eliminates waste from single-serve containers. Reduces storage space requirements.
Use reusable dishes and cutlery	Reduces long-term purchasing costs. Reduces disposal of packaging and single-use products.
Sell reusable mugs and refills at a reduced price	Reduces purchase and disposal of single-use cups. Encourages employee participation in waste preventing behavior.
Maintenance Activities	
Purchase less-toxic products	Reduces worker exposure to harmful chemicals. Reduces emissions to air and water. Reduces long-term purchasing and waste management costs.
Replace dry absorbents with reusable mops or vacuums	Reduces long-term purchasing costs. Reduces disposal quantities and costs.
Extend preventive maintenance schedule	Reduces purchase and disposal of products and packaging. Reduces labor. Reduces costs.

seek input from other Agency personnel about the important attributes of a specific product or service that they regularly use. Ultimately, these discussions may lead to the purchase of higher quality, longer-lasting products that prevent waste, save money over time, *and* improve the workplace.

3.2 Buy Durable Products

If you cannot eliminate a product, consider using more durable products that do not need to be purchased as frequently. This practice will cut down on the disposal of spent, broken, or unsatisfactory products, and will reduce packaging waste associated with repeat purchases of the less durable products. Usually, the challenge for purchasing staff is to justify the purchase of a more costly, but longer-lasting, product. While the initial purchase price may be higher, decision makers within an Agency may be amenable to purchasing more durable items once they are convinced of the long-term savings. In addition, a more durable product will result in less downtime for staff who must stop working while they obtain replacements for spent, broken, or damaged equipment.

Preparing documentation of cost savings and benefits of purchasing a more expensive durable product can be a daunting experience. However, reviewing the life-span cost of the more durable product will help you justify the purchase of a more expensive product. As reviewed in Section 8, life-span costs include the purchase price of the product, operating costs (including

Off Track Betting Chooses Reusable Totes

The Off Track Betting (OTB) Support Center in Long Island City delivers printed materials to 70 branch offices each night. The materials were shipped in corrugated cardboard boxes that were reused two to three times before breaking. OTB considered whether reusable plastic totes could result in cost savings and other benefits.

Several different totes were tested and, through a competitive bid, OTB purchased lightweight totes with handles, based on strength and ability to "nest" inside each other to maximize truck space.

Before switching to reusable totes, OTB replaced approximately 4,000 corrugated cardboard boxes per year at a cost of about $0.60 per box, or $2,400. The 200 reusable totes, with an anticipated life span of five years, cost $16 each, for a one-time cost of $3,200. Spreading this initial cost of $3,200 over the five-year life span results in annual cost of $640, a savings of about $1,760 per year for OTB. In addition, as much as 10 tons of corrugated cardboard was removed from the waste stream, and labor to manage the waste cardboard was eliminated.

energy and water), maintenance costs, and the cost of the product's eventual disposal. Frequently this analysis will show that a product that may have lower initial costs will actually be more expensive and use more resources over time than a more durable alternative.

Another gauge of product durability and cost competitiveness is found in product warranties and service contracts. A company offering an extended warranty demonstrates confidence in their products' quality and reliability. For example, tools and accessories may come with lifetime replacement guarantees, while other products may have warranties for extended periods of time. Factoring these warranty periods into the life-span analysis enhances product cost comparisons. To ensure that a vendor's warranty claim is valid, consider requesting technical data to support the stated warranty claim as a condition of the bid. You can then use the warranty in your criteria to evaluate similar products with confidence. Warranties are discussed further as part of the discussion of life-span analysis in Section 8.

Another opportunity to reduce the waste associated with more durable products is to encourage your Agency to purchase the same high quality make and model for each operation within the Agency, so that parts can be interchanged and products can be repaired more easily. Contact professional repair personnel who can help you identify reliable brands and routine maintenance needs.

Find the Most Durable Product

If two similar products meet your performance specifications, compare warranties. If Product A costs $10 and comes with a full warranty for one year and Product B costs $15, but its warranty guarantees a full refund or replacement for five years, Product B is likely to be more durable and cost far less over the life of the product.

3.3 Replace Single-Use Disposables

Tip Box: Waste Prevention

Evaluate the potential cost savings if you eliminate the purchase of disposable beverage cups and buy every staff member a reusable ceramic or plastic mug with the Agency logo.

Your Agency can reduce waste and costs by replacing single-use, disposable products with durable items that can be recharged or cleaned and reused. For example, if you tally your annual costs to purchase, use, and discard single-use, disposable food service products, you may be surprised at how much you are spending.

Department of Juvenile Justice Discards 36,500 Bowls

A DJJ Juvenile Detention Facility buys, uses, and discards at least 36,500 single-use bowls annually, although on-site dishwasher capacity is available. If the facility purchased a supply of durable bowls, and factored in the costs of bowl replacement and increased dishwasher use, the facility still would reduce costs by $300 and eliminate more than a half ton of waste each year.

Compare this cost to an initial investment in washable, reusable dishware and cutlery and the cost to wash the dishware. You may find that replacing the disposables will reduce long-term purchasing costs, as well as the cost to dispose of the waste generated from disposable plastic and paper food service items.

Replacing disposable with reusable items extends beyond the opportunities available to the food service sector. Consider whether there is a reusable product that you can substitute to eliminate the purchase of a disposable product. Consider washable rags and linens, refillable containers for cleaning products and other liquids, refillable pens, recharged toner cartridges for printers, erasable wall calendars, and rechargeable batteries.

Specifying battery-run equipment that uses replaceable, rechargeable batteries offers another opportunity to reduce an unnecessary waste stream: single-use batteries. You may be surprised to learn how many single-use batteries your Agency purchases and discards in a year. Again, although an initial investment in batteries and chargers is required, the long-term, positive environmental consequences are significant. When purchasing battery-operated equipment, avoid products designed for disposal when the rechargeable battery or battery pack expires.

Rechargeable Batteries Reduce Waste

Rechargeable batteries reduce waste with minimal cost impact. DOS Bureau of Motor Equipment uses 1,733 disposable alkaline batteries in its 200 pagers. The cost to purchase the single-use batteries is $350 and disposal costs are $7.25 for annual costs of $357.25. If BME purchased and used 347 rechargeable alkaline batteries and 25 battery chargers, the total first-year cost, including electricity, would be $350.

3.4 Consider Used or Remanufactured Products

Used or remanufactured products may meet your Agency's performance standards, while diverting substantial quantities of wood, metal, and plastic from the waste stream. Consider the model provided by New York State, which offers a 10-percent price premium for remanufactured products. The NYS Office of General Services may purchase up to $50,000 in remanufactured commodities or remanufacturing services without formal competitive bid.

You can work with the DCAS furniture commodity team to develop a bid specifying remanufactured furniture or equipment. According to the Office

Furniture Recyclers Forum (OFRF), prices for high quality remanufactured furniture typically range from 30 to 50 percent less than new furniture. Brands like Steelcase, Kentwood, and Herman Miller offer a line of remanufactured furniture and may offer an even exchange for your old furniture or a market value credit. You can contact the Office Furniture Recyclers Forum, the trade association for the office furniture recycling, refurbishing, and remanufacturing industry, at **www.ofdanet.org.** Or you can call them toll free at (800) 542-6672.

Department of Health Repairs Furniture

Over the course of two years, a DOH furniture repair operation recovered 1,018 pieces of furniture weighing about 66.2 tons. Avoided spending for new furniture was $255,573. After subtracting annual program expenses of $15,000, DOH saved more than $100,000 per year and the City saved almost $10,000 in avoided waste management costs.

Another option is shopping at the DCAS Surplus Warehouse for office furniture and equipment before buying from an outside source. Perhaps your Agency could work with a broker who buys and sells used furniture or equipment. Or, if the furniture simply needs to be repaired or updated, perhaps your Agency could contract with an on- or off-site refurbisher to repair and restore your existing office furniture.

Department of Sanitation Saves $50 Per Toner Cartridge

By specifying a remanufactured product, the DOS Bureau of Waste Prevention, Reuse and Recycling saves $50 on each Lexmark toner cartridge purchased.

Also consider buying refurbished office equipment and toner cartridges for laser printers, copiers, and fax machines. Local vendors will collect spent toner cartridges from your Agency, refurbish them, and resell the cartridges at a substantial cost savings for your Agency. Today's refurbishing operations generate high quality cartridges that are comparable or even superior to new cartridges. DCAS tests indicate that the remanufactured cartridges actually produce more copies at a lower price per copy.

3.5 Lease Rather than Purchase

Because of rapidly developing technology in the fields of computers, copiers, and telecommunications equipment, these items may be displaced by new, more efficient products on a regular basis. Lease agreements for equipment can incorporate optional upgrades over a specified period of time. Lease agreements also can incorporate a requirement for the return of equipment

to the manufacturer, eliminating the need for the City to manage huge quantities of unwanted, but still usable, products and equipment.

Some kinds of equipment may be used infrequently, making temporary leasing a more cost-effective option. When deciding between lease or purchase, consider how the item will be used, how long you intend to keep the equipment, and whether the item can be easily upgraded. Since you normally check with the vendor to determine if the lease includes a maintenance agreement and a replacement option should the product fail, consider asking the vendor to disclose how they manage products once they are returned by the customer. EPP decision making often includes considering how products are managed at the end of their useful life, even when your Agency is not directly responsible for the ultimate disposal.

A broadening range of products beyond the "traditional" items that Agencies tend to lease, like copiers, can now be leased. For example, you can now lease carpet. And the better news for purchasing staff committed to EPP principles, is that vendors will collect worn carpet and, depending on the condition of the carpet, will revive, restyle, and re-lease the carpet when possible. For carpet that is beyond repair, there is a growing carpet recycling industry. This is just one example of a commodity that often is not considered for a lease arrangement. When considering new items, ask yourself:

- Is this product available for lease today?
- Is there a manufacturer or vendor who will reclaim the product when we no longer want or need the item?
- How will the product be managed once it is returned to the vendor?

Leasing can serve as one of the cornerstones of your EPP program and will reduce the quantity of waste generated by your Agency as well as provide an opportunity to reduce disposal of products at the end of their useful life.

3.6 Reduce Packaging

Everything comes in a package! Packaging is needed to preserve and protect the products and materials that we use. Packaging also is one of the key targets of every innovative EPP program in the country. Consider how much packaging is really necessary and the multiple layers of costs associated with product packaging.

ONE-THIRD OF SOLID WASTE IS PACKAGING
According to the USEPA's Characterization of Municipal Solid Waste in the United States, 1998 Update, containers and packaging represent 76.5 million tons, or one-third (33.1%) of the total waste generated.

REDUCE PACKAGING

Packaging is an area where purchasing agents can have a significant impact on waste prevention. Use purchasing specifications and vendor commitments to drive down excess packaging. Several key opportunities for you to "take charge" and eliminate packaging waste include the following:

- Specify that vendors ship their products with the minimal amount of packaging necessary. Request, as part of your bid specifications, that your Agency be able to return reusable packaging to vendors. These actions will reduce the quantities of pallets, corrugated cardboard, plastic film, and strapping entering your operations.

Department of Transportation Ships in Steel

The Department of Transportation Sign Shop delivers signs to the five boroughs in reusable four-foot-square corrugated steel containers.

- Endeavor to purchase and install bulk dispensers. Do this for cleaning products and automotive maintenance products such as oils and greases, as well as for food and beverage purchases. In addition to a possible per unit cost reduction, your Agency will recognize a reduction in the costs to manage and dispose of smaller containers and their associated packaging.

- Develop a closed-loop delivery system with those vendors who service your Agency on a regular basis. Note in bid documents that special consideration will be given to vendors willing to deliver your purchases in reusable containers and to backhaul pallets and empty containers from previous deliveries. This approach may actually reduce vendor costs, something to consider in your contract negotiations.

- Purchase reusable and returnable containers, such as metal or plastic boxes, for deliveries within Agency operations. When contracting for moving services, specify that the mover provide reusable bins for staff to pack their office supplies and personal items. Reuse corrugated cardboard boxes from outside deliveries for internal deliveries. Consider establishing a pallet recycling contract with a company that collects, refurbishes, and sells pallets to distributors in your area.

Talk to colleagues who work on the receiving dock or deliver materials throughout the Agency about the packaging delivered. Use this information to chart your discussions with current vendors and to formulate specifications for future bids.

Vendors want to do business with you, and doing business means providing both the products you need and the customer service that retains your repeat business. Vendors are more likely to participate in your Agency's EPP program once you take the initiative to communicate explicitly your Agency's

expectations. As challenging as change is for your Agency, change can pose an equal challenge for your vendors.

For every item you purchase, ask yourself:

- How is this item packaged?
- Is this item delivered to our Agency on one-way pallets that we manage as waste?
- Is the packaging of this product appropriate?

Talk to your colleagues who work on the receiving dock about the packaging used to deliver products. Speak with staff who unpack and deliver these materials throughout your Agency to determine if there are excess layers of disposable packaging. Use this information to chart your discussions with current vendors and to formulate specifications for future bids.

One tool you can consider using to promote your program is a brief vendor survey (see Exhibit 3A below). Actually, the *Mayoral Directive* requires Agencies to perform a vendor survey. Through this process vendors will become aware of your Agency's interest in environmentally preferable and recycled content products and packaging, and can become your strongest partners. When asked, vendors may explain programs and changes they

Exhibit 3A: Sample Vendor Survey

The City of New York is concerned about the quantity of waste generated by Agency operations. Because packaging is a significant element in our waste stream, we hope you can take a few minutes to provide your perspective on certain options that we are considering to reduce the weight and volume of our waste.

1. Good quality, standard size pallets often are discarded. Would you consider establishing a policy and encouraging your drivers to take back a number of pallets equal to the number delivered?
   - ❑ **yes** If yes, how quickly could such a policy be implemented?
   - ❑ **no** If no, what are the barriers to implementing a pallet return policy?

   What other options can you propose for reducing the disposal of reusable pallets?

2. Are there any products that we routinely purchase from you that could be delivered in durable, reusable totes that you could backhaul on subsequent deliveries?
   - ❑ **yes** If yes, for which products? How quickly could such a program be implemented?
   - ❑ **no** If no, what are the barriers to reusable distribution packaging?

3. What other options can you propose for reducing single-use packaging?

already have initiated to reduce the quantity of waste within their own companies. They also may provide insights about changes implemented in response to other customers who have implemented EPP programs and are requiring vendor compliance. Do not be hesitant about initiating a dialogue with your vendors.

3.7 Recyclability

While eliminating waste is the primary goal of your EPP program, diverting materials that you cannot eliminate or minimize is also key. An effective recycling program will enhance your Agency's EPP profile. Target products and packaging that can be recycled within your current facility recycling program. Enhancing the recyclability of products and packaging reduces the quantity of waste requiring disposal. Whenever possible, purchase products and specify product packaging that is compatible with the City's recycling programs.

Staff at every level can encourage waste prevention through the environmentally preferable purchasing process by providing an initial environmental review before a purchasing requisition moves from the product user to the ACCO's office or to DCAS.

Section 3 Purchasing for Waste Prevention

Review, Research, and Reduce Wasteful Products

The critical objective when selecting waste preventing products is to ensure that the same function is served, over the long term, using fewer materials, generating fewer wastes, and reducing costs.

Completed		Task
☐	1.	Is there any way to eliminate the use of the product by changing the way the job is performed or implementing new technology?
☐	2.	Is a more durable, multiple-use product available?
☐	3.	Is there a reusable product available that will eliminate the purchase of a disposable product?
☐	4.	Is there a remanufactured or rebuilt product that will serve the same purpose?
☐	5.	Can the product be leased or rented?
☐	6.	Is there an opportunity to reduce the materials associated with the packaging and delivery of the product? Use the vendor survey on the back of this checklist to guide discussions.
☐	7.	Can the spent products, product containers, and/or packaging be recycled in your Agency's current recycling program? See What To Recycle on the back of this checklist as a guide.

Sample Vendor Survey

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1. **Good quality, standard size pallets often are discarded. Would you consider establishing a policy and encouraging your drivers to take back a number of pallets equal to the number delivered?**

   ❑ **yes** If yes, how quickly could such a policy be implemented?

   ❑ **no** If no, what are the barriers to implementing a pallet return policy?

   What other options can you propose for reducing the disposal of reusable pallets?

2. **Are there any products that we routinely purchase from you that could be delivered in durable, reusable totes that you could backhaul on subsequent deliveries?**

   ❑ **yes** If yes, for which products? How quickly could such a program be implemented?

   ❑ **no** If no, what are the barriers to reusable distribution packaging?

3. **What other options can you propose for reducing single-use packaging?**

What To Recycle

Required recyclables for NYC Agencies with DOS collection (City-owned space)

PAPER

- High-grade office paper (white bond paper, computer printout, copier paper, printer paper, letterhead)*
- Mixed paper (newspapers, magazines, catalogs, phone books, colored paper, glossy paper, folders, envelopes, paper bags, paperboard)
- Corrugated cardboard

BOTTLES, CANS, & FOIL

- Glass bottles and jars
- Metal cans
- Small metal items (composed of more than 50% metal, *e.g.*, broken binder clips or file drawer frames)
- Plastic bottles and jugs
- Aluminum foil and foil products (tins, trays)
- Gable-top milk and juice cartons/juice boxes
- Bulk metal (large metal items and large items composed of more than 50% metal, *e.g.*, window frames, damaged desks, filing cabinets)

Required recyclables for NYC Agencies in leased space with commercial collection

- High-grade office paper (white bond paper, computer printout, copier paper, printer paper, letterhead)
- Newspapers
- Magazines and catalogs
- Phone books
- Corrugated cardboard
- Bulk metal

Required recyclables for NYC Agencies with food and beverage service (e.g., cafeterias) in leased space with commercial collection

- Corrugated cardboard
- Metal cans
- Glass bottles and jars
- Plastic bottles and jugs
- Aluminum foil and foil products (tins, trays)
- Bulk metal

* High-grade office paper is collected as mixed paper, unless the quantity is sufficient for DOS to include the Agency or building in the DOS White Paper Recycling Program.

Section 4 Buying Products with Recycled Content

4.1 Product Performance
4.2 Recycled Content Standards
4.3 USEPA's Comprehensive Procurement Guidelines
4.4 Educating Your Vendors
4.5 Price Preferences

Section 4 Checklist: Closing the Recycling Loop

4.0 Buying Products with Recycled Content

OBJECTIVES:

- **Understand the environmental benefits of purchasing recycled content products.**
- **Understand how to use the USEPA Guidelines.**

For more than a decade, City Agencies have separated and collected recyclable materials that would otherwise be disposed as waste. The focus of this Section is the next stage of the process: promoting the use of those materials in the manufacture of new products. The most important step, and the one where you make a difference, is the purchase of those new, recycled content products.

New York City Mayoral Agencies can "close the loop" by purchasing products manufactured from recycled or recovered material and by promoting the "buy recycled" message through Agency procurement policies and programs.

An important reason to specify products with recycled content is to support markets for the materials collected in New York City's recycling program.

With increased market demand, today's recycled products offer excellent quality. In fact, many industry standards do not distinguish between virgin and recycled products. Recycled products are close to or equal in price to products made from virgin materials. Manufacturing new products from recovered materials saves resources, energy, and water, while reducing air pollution and disposal costs. By further increasing the demand for products made from recycled materials, your Agency will help to keep these products price competitive. Buying recycled products is critical to your Agency's EPP program.

Consider establishing an Agency policy that advocates the purchase of products with the highest percentage of "post-consumer" recycled content. As discussed in Section 2, "post-consumer" refers to items that have been used by the consumer, separated for recycling, and then made into new materials and products. Remember, the terms "pre-consumer," "recovered," and "post-industrial" content refer to scrap collected and reintroduced into the manufacturing process without consumer use. Many industries have been doing this for years, but have recently begun to refer to these scraps as "recycled content," because of the demand for "recycled" products. While both pre- and post-consumer materials would otherwise be landfilled, post-consumer content is most important, because it creates a market for those items that you recycle at work and at home.

4.1 Product Performance

One of your EPP program responsibilities may be to act as the "salesperson" for certain recycled products or for changes to existing services. In this role, you may find that some City employees have had a negative experience with a recycled product in the past. Your task is to convince them to give recycled content products a second try. It is critical for you to explain that times have changed and that recycled products have improved. Manufacturers continue to fine tune manufacturing equipment to accommodate recycled content feedstock and to expand the range of products manufactured with recycled content.

The Official Recycled Products Guide (RPG) lists more than 650 manufacturers and distributors marketing more than 4,000 recycled products in 700 categories. An on-line service, searchable based on user criteria, provides access to the entire Official Recycled Products Guide, as well as many other information databases (including recycling markets, equipment, and services). The cost is $60 per year to enroll, plus $29-$35 per hour of use. For more information, contact Recycling Data Management Corp., P.O. Box 577, Ogdensburg, NY 13699, (800) 267-0707, **www.RecyclingMarkets.net**.

Agency staff may need hands-on experience to become comfortable with recycled content products. Consider purchasing (or asking vendors to supply you with) a small quantity of a recycled content product to conduct a pilot test.

Agency staff may need product performance information and hands-on experience to become comfortable with recycled content products. Consider purchasing a small quantity of a recycled content product and conducting a pilot project. This pilot can be designed to ask employees to knowingly test a recycled content product against its virgin counterpart, or to test the product on a small scale, and wait to see how staff respond to the recycled content product. Regardless of the approach, it is important to test the product to confirm that it meets Agency performance expectations before making a decision to substitute a recycled content product for a virgin product.

4.2 Recycled Content Standards

Agency staff will want to know how to determine the amount of recycled content to include in bid specifications. How much recycled content is enough? It varies by product and over time. The most effective standards result from thorough research and product testing. Manufacturing practices must be understood, since performance characteristics of the finished product may limit the amount of recycled content feedstock that can be incorporated into a product. Recycled content standards change over time, as the quality of recovered material feedstocks improves and processing technologies advance.

Determining the percentage of recycled content to specify in a product procurement can be a challenge, but the information is available. Try the following steps:

- Read the label or product description in a catalog carefully. The wording on a label may state that the product contains 50% recycled content, 10% post-consumer. You will know that the product is manufactured from 50% virgin material and 50% recycled material, of which 10% is post-consumer recycled material.

- DCAS regulations allow City purchases based on either USEPA or the New York State Department of Environmental Conservation (DEC) minimum content standards for secondary materials. Set recycled content standards high enough to stimulate demand for recovered materials, but not so high as to hamper product performance or availability.

- Contact the product manufacturer to discuss the recycled content claims made on product packaging or by vendors. Although this may seem to be beyond the "call of duty," a discussion with the manufacturer may be the only way to ensure that the products that you are approving and purchasing really do meet the recycled content standards that are part of your Agency's EPP program.

You can express these standards in your bid documents in three ways:*

- **Minimum Recycled Content Standards:** These standards specify the lowest level of recycled material that will satisfy a responsive bid. The minimum recycled content standard states the *minimum acceptable* content; suppliers can propose products with a higher percentage of recycled content. Most governments use minimum recycled content standards as a starting point.

- **Maximum Recycled Content Standards:** These standards specify the *most* recycled material allowed. Suppliers can provide less but no more. Engineers use maximum standards in cases where sufficient recovered feedstock may not be available for an entire job, or where performance standards may not be met if contractors use more than the specified percentage of recycled content.

* Adapted from *Resourceful Purchasing.* Alameda County, CA, Source Reduction and Recycling Board. 1996.

- **Range of Recycled Content Levels:** Standard-setting bodies use ranges to address variation over a wide geographic area. The low end is the minimum acceptable amount of recycled content. The high end is the maximum amount available somewhere within the marketplace. USEPA uses ranges to specify the recommended levels of recycled content and expresses post-consumer content as a sub-part of total recovered material.

Agencies may restrict bids solely to products containing specified minimum recycled content levels to ensure that you are comparing similar products.

It is important to know that your decision to specify recycled content products is supported by the PPB and that Agencies may restrict bids solely to products containing specified minimum secondary material content levels.

New York City has established a standard of 30% post-consumer content for printing and writing paper. This standard is based on the standard set by the Federal government. The paper available from the Department of Citywide Administrative Services (DCAS) Storehouse meets this specification and, during FY 98, recycled paper purchases represented 89 percent of the total dollar value of paper purchased for New York City. When you purchase paper through DCAS, you can be certain that the paper meets the City's post-consumer recycled content standard.

When you purchase printing services, or paper from an office supply store, make sure that the paper you get also meets or exceeds the City's 30% post-consumer recycled content standard.

As you develop the recycled content standards that will be implemented through your Agency's EPP program, you will want to consider *all* of the sources through which your Agency obtains supplies and materials. For example, when you purchase printing services, or paper from an office supply store, make sure that the paper you get also meets or exceeds the City's 30% post-consumer recycled content standard.

4.3 USEPA's Comprehensive Procurement Guidelines

A tremendous level of effort in product research and product testing has been conducted by the Federal government to establish the required percentages of recycled content for many of the products purchased and used by Federal Agencies. As a result of this rigorous process, you can have confidence in USEPA's guidelines. USEPA's Comprehensive Procurement Guidelines (CPG) assure that:

- There is more than one vendor selling the product.
- The product meets Federal Agency performance criteria.

- The product is cost competitive with its virgin counterpart.

USEPA'S COMPREHENSIVE PROCUREMENT GUIDELINES

USEPA provides the recommended recycled material content level, recycled product specification language, and a list of manufacturers and suppliers for 58 products in eight product categories. Each Comprehensive Procurement Guideline (CPG) and its companion Recycled Material Advisory Notice can be reviewed at **www.epa.gov/epaoswer/non-hw/procure**. Items currently designated for purchase with recycled content are listed in the following table and in Appendix 1. Appendix 1 also provides a summary of the recommended recycled content level for each of the CPG product categories.

USEPA Comprehensive Procurement Guidelines

Items Currently Designated for Purchase with Recycled Content

Paper and paper products
Commercial and industrial sanitary tissue products
Miscellaneous papers
Newsprint
Paperboard and packaging products
Printing and writing papers

Non-paper office products
Binders
Office recycling containers
Office waste receptacles
Plastic desktop accessories
Plastic envelopes
Plastic trash bags
Printer ribbons
Toner cartridges
Solid plastic binders
Plastic clipboards
Plastic file folders
Plastic clip portfolios
Plastic presentation folders

Miscellaneous products
Pallets
Sorbents
Awards and plaques
Industrial drums
Mats
Signage
Strapping and stretch wrap

Landscaping products
Garden and soaker hoses
Hydraulic mulch
Lawn and garden edging
Yard trimmings compost
Food waste compost
Landscaping timbers and posts (plastic lumber)

Park and recreation products
Plastic fencing
Playground surfaces
Running tracks
Park and recreational furniture
Playground equipment

Vehicular products
Engine coolants
Re-refined lubricating oils
Retread tires
Transportation products
Channelizers
Delineators
Flexible delineators
Parking stops
Traffic barricades
Traffic cones

Construction products
Building insulation products
Carpet
Carpet backing
Carpet cushion
Cement and concrete containing coal fly ash or ground, granulated blast furnace slag
Consolidated and reprocessed latex paint
Floor tiles
Patio blocks
Shower and restroom dividers and partitions
Structural fiberboard
Laminated paperboard
Flowable fill
Railroad grade crossings/surfaces

4.4 Educating Your Vendors

Once your Agency establishes recycled content standards, these standards need to be communicated to Agency staff and to your vendors. Obviously, you can insert the new recycled content standard into the product specification when you issue an Invitation to Bid. However, you also may want to notify your suppliers of any changes in your Agency's purchasing policy (see Section 7) and share your new product expectations. Vendors may be eager to provide information on their environmentally preferable and recycled content products if your Agency indicates an interest.

4.5 Price Preferences

A little more than a decade ago, EPP was a new concept and very few products were manufactured or designed with environmental performance as a standard. As manufacturers began to respond to government requests for products and services that were less harmful to the environment, the price tag for these EPP products was higher than their virgin or more toxic counterparts. In response, governments began using price preferences to address the lowest bid requirement. For example, New York City Local Law 19 (1989), Subchapter 5, §16-322, 4c: *City Purchase of Recycled Products,* authorizes Agencies to use a price preference to obtain products "manufactured with a minimum amount of secondary material."

Now, however, demand for environmentally preferable products is strong, and many items manufactured with recycled content cost no more than their virgin alternatives. In fact, in some cases the recycled item is actually less expensive. Although some environmentally preferable products still may carry higher price tags than their alternatives, a price preference is not the recommended approach to an effective EPP program. Instead of focusing solely on the initial purchasing price of a product, it is important to include the other factors, such as the operating, maintenance, and disposal costs, that are associated with the use of an item. Section 8 discusses in detail how to factor in these other costs when making purchasing decisions.

Section 4 Purchasing Recycled Content Products

Closing the Recycling Loop

Specify products with recycled content to support markets for the materials collected in New York City's recycling program.

Completed	Task
☐	1. Establish an Agency policy that advocates the purchase of products with the highest possible percentage of post-consumer recycled content.
☐	2. Follow DCAS regulations that allow City purchases based on either USEPA or the New York State Department of Environmental Conservation (DEC) minimum content standards for secondary materials.
☐	3. Review USEPA and DEC standards to establish the minimum percentage of recycled material acceptable for this product. Reference list of items designated by USEPA CPG on the back of this checklist.
☐	4. Contact the product manufacturer to discuss the availability of products containing recycled materials and to verify recycled content claims.
☐	5. Express the standard in your bid documents in one of three ways: ■ Minimum Recycled Content ■ Maximum Recycled Content ■ Range of Recycled Content Use the definitions included on the back of this checklist as a guide.
☐	6. Consider purchasing a small quantity of the recycled content product and conducting a pilot test to confirm that it meets your Agency's performance standards.

USEPA Comprehensive Procurement Guidelines

Items Currently Designated for Purchase with Recycled Content

Paper and paper products
- Commercial and industrial sanitary tissue products
- Miscellaneous papers
- Newsprint
- Paperboard and packaging products
- Printing and writing papers

Non-paper office products
- Binders
- Office recycling containers
- Office waste receptacles
- Plastic desktop accessories
- Plastic envelopes
- Plastic trash bags
- Printer ribbons
- Toner cartridges
- Solid plastic binders
- Plastic clipboards
- Plastic file folders
- Plastic clip portfolios
- Plastic presentation folders

Miscellaneous products
- Pallets
- Sorbents
- Awards and plaques
- Industrial drums

Miscellaneous products, continued
- Mats
- Signage
- Strapping and stretch wrap

Landscaping products
- Garden and soaker hoses
- Hydraulic mulch
- Lawn and garden edging
- Yard trimmings compost
- Food waste compost
- Landscaping timbers and posts (plastic lumber)

Park and recreation products
- Plastic fencing
- Playground surfaces
- Running tracks
- Park and recreational furniture
- Playground equipment

Vehicular products
- Engine coolants
- Re-refined lubricating oils
- Retread tires
- Transportation products
- Channelizers

Vehicular products, continued
- Delineators
- Flexible delineators
- Parking stops
- Traffic barricades
- Traffic cones

Construction products
- Building insulation products
- Carpet
- Carpet backing
- Carpet cushion
- Cement and concrete containing coal fly ash or ground, granulated blast furnace slag
- Consolidated and reprocessed latex paint
- Floor tiles
- Patio blocks
- Shower and restroom dividers and partitions
- Structural fiberboard
- Laminated paperboard
- Flowable fill
- Railroad grade crossings/ surfaces

Definitions

Minimum Recycled Content Standards: These standards specify the lowest level of recycled material that will satisfy a responsive bid. Such standards do not mean that a product must contain only a certain percentage of recycled material and no more. The minimum recycled content standard states the minimum acceptable content; suppliers can propose products with a higher percentage of recycled content. Most governments use minimum recycled content standards as a starting point.

Maximum Recycled Content Standards: These standards specify the most recycled material allowed. Suppliers can provide less but no more. Engineers use maximum standards in cases where sufficient recovered feedstock may not be available for an entire job, or where performance standards may not be met if contractors use more than the specified percentage of recycled content.

Range of Recycled Content Levels: Standard-setting bodies use ranges to address variation over a wide geographic area. The low end is the minimum acceptable amount of recycled content. The high end is the maximum amount available somewhere within the marketplace. USEPA uses ranges to specify the recommended levels of recycled content and expresses post-consumer content as a sub-part of total recovered material.

Section 5 Purchasing Products that Reduce Toxicity

5.1 How Do I Know the Product Is Toxic?
5.2 Material Safety Data Sheets
5.3 Toxic Targets
5.4 Fluorescent Lamps
5.5 Pesticides

Section 5 Checklist: Steps to Evaluating and Selecting Non-Toxic and Less-Toxic Product Substitutes

5.0 Purchasing Products that Reduce Toxicity

OBJECTIVES:

- **Learn to identify chemical constituents that may impact worker health or safety.**
- **Become familiar with tools to help eliminate or reduce the purchase of toxic products.**

A comprehensive EPP program targets products that contain potentially harmful chemicals. Your purchasing program can help to protect employee health and safety by reducing or eliminating the purchase of products whose ingredients are highly toxic, carcinogenic, flammable, or cause skin irritation, respiratory problems, or allergic reactions. You also can reduce the broader potential environmental impacts of chemicals that might end up in local wastewater systems or contribute to ozone depletion.

Revising your purchasing specifications can help your Agency eliminate, or at least reduce, the toxicity of the products and chemicals used in your operations. By reducing worker exposure to toxic chemicals and physical hazards, you can create a safer workplace. Improved safety can, in turn, reduce your Agency's liability exposure and Worker Compensation claims, and reduce worker absences due to illness or injury.

You can create a healthier workplace and protect the environment if you ask this question before you buy: Is there a less toxic product that can perform the same job to the same standard?

Reducing the quantity of hazardous materials and wastes can significantly reduce costs. It can be helpful to coordinate with Agency staff responsible for environmental compliance and managing hazardous wastes because you will want to document the costs associated with the proper storage, tracking, and disposal of hazardous waste in order to prepare a thorough analysis and justification for substituting a less toxic or non-toxic product. The cost savings, along with the improvements in health and safety, will make the case for changing the products and services your Agency uses to maintain equipment and facilities.

You will want to involve staff who use toxic products daily to test and select substitutes in order to ensure that they understand the reasons for phasing out the current product and to gauge their satisfaction with the less toxic substitute. Your Agency may wish to develop a protocol for obtaining, testing, and comparing potential substitutes for products with toxic constituents. Once you have selected a product, you may want to include in the solicitation

a requirement that the vendor provide your staff with training and hands-on demonstrations in the use of the product or equipment.

5.1 How Do I Know the Product Is Toxic?

The best place to start is the product label. It will not tell the whole story, but it will have basic information about safe use and any health risks. For example, the words **caution** or **warning** on the label indicate a hazardous substance. If you see the word **danger**, the product is highly flammable, corrosive, or toxic. The label also can provide a preliminary list of ingredients that you can compare to USEPA's target chemicals.

As part of a voluntary effort to reduce the use of industrial toxics, USEPA has established a list of 17 chemicals and metals targeted for elimination, whenever possible. You may be surprised to learn that many of the products used to clean and maintain City buildings, as well as products used in the City's vehicle maintenance, paint, sign, and metal shops, contain one or more of these chemicals. You can refer to this list when reviewing the ingredients of products currently purchased and used in your Agency. You may want to establish an Agency policy prohibiting the purchase of products containing these chemicals, unless the user is able to demonstrate that there is no substitute product that meets the operation's performance standards.

USEPA also has launched a priority initiative to reduce 12 persistent, bioaccumulative, and toxic chemicals (PBTs), because of their

EPA 17 Industrial Toxic Chemicals

1,1,1-trichloroethane
Benzene
Cadmium
Carbon tetrachloride
Chloroform
Chromium
Cyanide
Lead
Mercury
Methyl ethyl ketone
Methyl isobutyl ketone
Methylene chloride
Nickel
Tetrachloroethylene
Toluene
Trichloroethylene
Xylenes

Priority PBTs

(Persistent, Bioaccumulative, and Toxic chemicals)

Aldrin/dieldrin
Benzo(a)pyrene
Chlordane
DD, DDP, DDE
Hexachlorobenzene
Alkyl-lead
Mercury & compounds
Mirex
Octachlorostyrene
PCBs
Dioxins and furans
Toxaphene

serious health impacts. If your Agency purchases pesticide products or chlorinated solvents, you will want to ensure that your staff is aware of the potential harmful effects of these products and work with the product users to identify and purchase alternative products that meet their performance standards. For more information on PBTs, visit the EPA website at **http://www.epa.gov/opptintr/pbt/fact.htm.**

5.2 Material Safety Data Sheets

Another essential tool for evaluating products or their ingredients is the Material Safety Data Sheet (MSDS). The MSDS is prepared by the product's manufacturer and provides basic information on product ingredients, hazardous characteristics, health and safety impacts, as well as information on how to respond to spills, accidental contact, and other exposures.

Manufacturers are supposed to submit a MSDS with each bid for an incoming shipment of hazardous chemicals. You also can obtain the MSDS from the product manufacturer or you can access a searchable database containing the MSDSs for more than 250,000 commonly used products at **http://msds.pdc.cornell.edu/msdssrch.asp**. Occupational Safety and Health Administration (OSHA) regulations require that employers keep copies of MSDSs where they can be easily accessed by employees using or handling the materials. Appendix 2 offers a guide to reading and interpreting an MSDS that will help you identify those products that could be targeted for elimination or replacement because of their toxic constituents.

The City of New York, to meet its responsibilities under Article 28, Section 876 of the New York State Labor Law, requires that manufacturers and suppliers submit an MSDS for any toxic substance or product containing a toxic substance for which the seller submits a bid.

5.3 Toxic Targets

Certain operations are more likely to use cleaners, degreasers, graffiti removers, and other products commonly manufactured with toxic constituents. The following sections provide information about efforts to reduce the use of hazardous chemicals. Also included are resources that will help you to review the products currently in use by your Agency and develop criteria for future purchases.

5.3.1 Janitorial Products

Clean facilities are important to City Agency employees and visitors, but

janitorial products often are stronger than household cleaners, and it is important to protect the health of Agency cleaning staff as well as the indoor air in your Agency's offices and operations.

Federal, state, and local governments and private organizations have supported projects to identify testing criteria to target replacement products that will reduce both chemical exposure and the toxicity of the waste stream. For example, the City of Santa Monica, California, developed a list of criteria to help them select cleaning products. Santa Monica also specified that products be delivered in concentrated form to reduce packaging.

City of Santa Monica Cleaning Products Evaluation Categories

Acute toxicity
Chronic toxicity
Biodegradability
Skin irritants
Flammability
VOC (volatile organic compound) levels
Corrosiveness
Petroleum or hydrocarbons
Chlorinated compounds
Artificial dyes or fragrances

GreenSeal, a non-profit organization that certifies the environmental attributes of various products, published a detailed report on the environmental and health effects of industrial and institutional cleaners. This report is available on their website: **www.greenseal.org**. GreenSeal's recommended cleaners meet various environmental criteria, which are outlined in the box below.

GreenSeal Cleaning Products Criteria

- Not toxic to human or aquatic life
- VOC (volatile organic compounds) levels <10% when diluted for use
- Readily biodegradable
- Optimal performance in room temperature water
- Acceptable pH (2.5-12)
- No petroleum or petrochemical compounds
- No chlorine bleach
- No phosphates or derivatives
- No EDTA (ethylenediamine-tetraaceticacid) or NTA (nitrilotriaceticacid)
- No phenolic compounds or glycol ethers
- No arsenic, cadmium, chromium, lead, mercury, nickel, or selenium

The EPA-sponsored *Janitorial Products Pollution Prevention Project* interviewed janitors in several California cities to determine what they knew, did not know, and needed to know about the chemical products they use in their jobs. In addition, the Project studied workers' compensation data on the frequency and severity of actual accidents involving janitors and the chemicals in the products they use every day. Then, the Project conducted reviews of specific chemical products being used for janitorial work in several

dozen organizations. Based on this research, they developed fact sheets addressing products for the following: Toilet Cleaning, Hard Floor Care, Carpet Care, Restroom Cleaning, Glass Cleaning, Metal Cleaning, and Disinfectants. For more information, you can access these fact sheets and other information at **www.westp2net.org/Janitorial/ jp4.htm**.

In 1997, USEPA and the General Services Administration (GSA) published the results of a comparative risk management assessment of 19 cleaning products. This document is available from the USEPA Pollution Prevention Information Clearinghouse at (202) 260-1023. Request Document # EPA 742-R-97-002 or visit the website at **www.cleaningpro.com/toxic.cfm**.

The GSA *Commercial Cleaning Supplies Catalog* offers information on biodegradable cleaners and degreasers and provides a matrix of information on various environmental attributes. The Cleaning Products Pilot Project Purchasing Decision Wizards use the Environmental Attribute Matrix to select among cleaners and degreasers available from the GSA *Commercial Cleaning Supplies Catalog*. Access the Wizards at **http://www.epa.gov/opptintr/epp/cleaners/select/matrix.htm.**

5.3.2 Maintenance Products

Purchasing strategies can help your Agency minimize or eliminate the use of vehicle and building maintenance products that can pose health hazards to your staff and to waste handlers. New products and changes in equipment allow Agencies to reduce their reliance on hazardous chemicals. If you are considering the purchase of products or equipment new to your potential users, you can ask the vendors to set up a short- or long-term on-site demonstration for staff. Be sure to clarify that the vendor will remove the entire unit, including all chemicals and waste materials, should you decide not to purchase the equipment.

The Department of Transportation conducted a six-month test of a parts cleaning unit that recycles the cleaning solvent back through the washer, so that the same solvent is reused multiple times. It was installed in the Heavy Equipment Shop, which repairs construction equipment such as paving machines, front end loaders, and bulldozers. DOT found that the recycling parts washer would reduce employee exposure to hazardous chemicals, reduce annual maintenance costs, reduce labor, and reduce waste from 15 gallons to 2.75 gallons per month.

TOXIC TARGETS

The Department of Transportation could potentially save $9,000 and reduce waste generation by 147 gallons, or 0.57 tons (based on 7.75 pounds per gallon), per year by purchasing this recycling unit.

Comparison of Costs for Parts Cleaning Units

	Current Rental Unit	Recycling Unit
Purchase price	0	$2,890.00
Top-off fluids	0	$69.60
Rental/Vendor service per year	$504.00	$100.00
Total First-Year Equipment and Service Costs	$504.00	$3,059.60
Annual Labor @ $26.50/hour for 264 days/year	3.75 hrs/day = $26,235.00	2.5 hrs/day = $17,490.00
Total First-Year Costs for Parts Cleaning	**$26,739.00**	**$20,549.60**
Total Subsequent Yearly Costs for Parts Cleaning	**$26,739.00**	**$17,659.60**

Agency staff responsible for purchasing solvents and degreasers can access USEPA's Integrated Solvent Substitution Data System to help identify less-toxic substitutes for specific solvent applications. The System can be accessed on the web at **http://es.epa.gov/issds/**. Another resource is the Solvents Alternative Guide (at **http://clean.rti.org/**) which provides descriptions of solvent and process alternatives for parts cleaning and degreasing, including case studies and economic and environmental information.

5.3.3 Paint and Paint Equipment

Work closely with staff in painting operations to establish EPP criteria for paints and coatings that are purchased and applied by Agency employees. Volatile organic compounds (VOCs) have been identified as a contributing factor in the production of ground-level ozone, a common air pollutant and a public health hazard. Specify low or no VOCs when preparing to purchase paint for your Agency. Keep in mind that low VOC paints also have less odor—a benefit both to Agency staff applying the paint and to staff who have to continue to work in areas where fresh paint is being applied. It is important to note that the cost, performance, coverage rate, ease-of-application, finished look, and durability of environmentally preferable paint is comparable to that of conventional paint.

Also add environmental considerations to the selection criteria for the equipment used to apply paints and coatings. Specialized application equipment can provide an opportunity to reduce paint use and to purchase and use less solvents.

New paint stripping technologies offer alternatives to chemical agents. Alternative technologies include: abrasive blasting with a variety of materials, mechanical removal (using scrapers, wire brushes, and sandpaper), pyrolysis (vaporization of the paint coating in a furnace or molten salt bath), cryogenics ("freezing" the paint off), and extremely high pressure water or air.

Department of Transportation Saves Through Technology

The DOT Sign Shop has invested in electrostatic spray powder coating equipment that significantly increases the efficiency of paint application, collects and recycles overspray, and provides a more durable coating for the signs. Powder coating also eliminates the need for cleaning solvents.

For more information on environmentally safe paints, cleaners, and other chemical products, visit the U.S. General Services Administration, Federal Supply Service website at **www.fss.gsa.gov/environ/safer-chemicals.cfm**.

5.4 Fluorescent Lamps

Fluorescent lamps are one of the most energy efficient lighting sources available; however, the tubes contain mercury, which is necessary to conduct the flow of the electric current. Mercury is toxic to the nervous system, the brain, and spinal cord. When fluorescent lamps break, mercury is released to the environment. Ballasts, components of lighting fixtures that are discarded when they expire, contain DEHP (di [2-ethylhexyl] phthalate), a suspected human carcinogen. Thus, expired traditional fluorescent lighting tubes are classified as hazardous waste.

Custodial staff customarily place spent fluorescent lamps on the curb or in dumpsters for collection with other solid waste. City Agencies can protect the environment by:

- Purchasing low mercury fluorescent lamps whenever possible.
- Ensuring that expired, hazardous lamps are properly managed by a contracted lamp recycler.

As an element of your Agency's EPP program, you can determine whether your Agency purchases low mercury fluorescent lamps. If not, you may wish to establish a contract with an established vendor for fluorescent lamp recycling; Appendix 3 offers a list of vendors serving New York City. City Agencies in leased space can incorporate language into their leases requiring building managers to comply with the Federal and State laws regarding the proper disposal of spent fluorescent lamps generated by City Agency tenants.

5.5 Pesticides

City Agencies contract for the application of toxic chemicals to control insects and rodents in the workplace. All pest control programs have a special responsibility to review the impacts of these chemicals on staff and clients, and to prioritize the use of less-toxic alternatives. Integrated Pest Management (IPM) is an approach that minimizes pesticide use and risk while maximizing the control of pests in a safe and environmentally sound manner.

Incorporate IPM (Integrated Pest Management) standards into bid documents for pest control services.

An IPM program for buildings emphasizes three fundamental elements:

1. **Prevention.** Eliminate pest access, shelter, and food. Respond early to small infestations so that they do not become a larger problem.
2. **Least toxic controls methods.** Minimize pesticide use by selecting products and application methods that reduce hazards to humans and the environment.
3. **Systems approach.** Coordinate with building waste management and food services staff to design the IPM program.

The Integrated Pest Management standards outlined in the following table can be incorporated into bid documents for pest control services.

Integrated Pest Management Standards

1. All on-site pest control contractor personnel should be Certified Pesticide Applicators.

2. Pesticide application should be according to need, when pests are actually present, rather than by schedule.

3. Pesticides should be used only if adequate control cannot be achieved with non-chemical methods.

4. Pesticide use should always consist of the least hazardous material, the most precise application technique, and the minimum quantity of material necessary to achieve control.

5. The contractor should make available labels and MSDS (Material Safety Data Sheet) for every pesticide used on the premises.

6. Pesticides should not be stored on the premises.

7. Pesticides should be applied only as containerized or crack and crevice treatments where the applied material is never visible. Pesticides applied to the air or to exposed surfaces should never be used for routine treatment inside buildings. If their use is essential for a special circumstance, tenant personnel must not be present during treatment.

8. Insecticides should be applied only as baits formulated as solids, pastes, or gels. Spray or dust formulations should be selected only as a last resort or when solids, pastes, or gels are not practical.

9. Bait formulations, traps, vacuuming, sanitation, and exclusion techniques should be emphasized for control of infestations inside buildings.

Source: Guidelines for Structural Pest Control Operations, General Services Administration, 1997 Revision.

Section 5 Reducing Toxicity Checklist

Steps to Evaluating and Selecting Non-Toxic and Less-Toxic Product Substitutes

Is there a less toxic product that can perform the same job to the same standard?

Completed	Task
☐	1. Review product label and MSDS for the presence of any of the toxic constituents targeted by USEPA for elimination or reduction. Reference the list on the back of this checklist.
☐	2. If purchasing a new product, establish performance standards in cooperation with staff who will use the product.
☐	3. Use available resources to identify sources for less-toxic alternative products. See back of checklist for list of on-line resources. Contact vendors to identify substitute products and request samples.
☐	4. Coordinate with staff to conduct a pilot test of the replacement product samples.
☐	5. Evaluate staff feedback on product performance.
☐	6. Develop bid specifications for products that contain no, or reduced, toxic constituents.
☐	7. Evaluate and complete cost/benefit analysis form for those products that meet reduced toxicity specifications. Identify the environmentally preferable product with the lowest cost.

Toxic Constituent Target List

EPA 17 Industrial Toxic Chemicals

1,1,1-trichloroethane
Benzene
Cadmium
Carbon tetrachloride
Chloroform
Chromium
Cyanide
Lead
Mercury
Methyl ethyl ketone
Methyl isobutyl ketone
Methylene chloride
Nickel
Tetrachloroethylene
Toluene
Trichloroethylene
Xylenes

Priority PBTs (Persistent, Bioaccumulative, and Toxic chemicals)

Aldrin/dieldrin
Benzo(a)pyrene
Chlordane
DD, DDP, DDE
Hexachlorobenzene
Alkyl-lead
Mercury & compounds
Mirex
Octachlorostyrene
PCBs
Cioxins and furans
Toxaphene

On-Line Resources

EPA's target list of 12 persistent, bioaccumulative, and toxic chemicals: **www.epa.gov/opptintr/pbt/fact.htm**

GreenSeal: **www.greenseal.org**

EPA's Janitorial Products Pollution Prevention Project: **www.westp2net.org/Janitorial/jp4.htm**

USEPA and the General Services Administration (GSA) comparative risk management assessment of 19 cleaning products: **www.cleaningpro.com/toxic.cfm**

GSA Commercial Cleaning Supplies Catalog: **www.epa.gov/opptintr/epp/cleaners/select/matrix.htm**

Commonwealth of Massachusetts, Environmentally Preferable Products Procurement: **www.magnet.state.ma.us/osd/enviro/enviro.htm**

City of Santa Monica, California: **www.ci.santa-monica.ca.us/environment/resource.htm**

Waste Reduction Resource Center: **http://wrrc.p2pays.org/nframe.asp?page=indsectinfo.asp**

New York State Department of Environmental Conservation, Pollution Prevention Unit: (800) 241-7246 or **www.dec.state.ny.us**

Material Data Safety Sheets: **http://msds.pdc.cornell.edu/msdssrch.asp**

Section 6 Purchasing for Energy Efficiency

6.1 ENERGY STAR®
6.2 Lighting
6.3 Building Improvements
6.4 Technical Assistance

Section 6 Checklist: Increasing Efficiency Reduces Energy Costs

6.0 Purchasing for Energy Efficiency

OBJECTIVES:

- **Understand energy efficiency as part of an EPP program.**
- **Become familiar with available technical resources.**

Effective energy management can significantly reduce your Agency's annual electricity costs and is an integral part of an EPP program. Purchases of energy efficient products, including lighting and office equipment, could make funds available for your Agency to pursue new projects. Even if your Agency operations are housed in leased space, you may be responsible for the cost of utility services. Consider working with the Department of Citywide Administrative Services (DCAS) Office of Real Estate Services to negotiate energy efficiency improvements as part of your lease renewal.

When you think about energy issues, also think about pollution. According to the USEPA, more than 85 percent of the energy consumed in the United States is produced from the combustion of fossil fuels. As they burn, these fuels emit pollutants and carbon dioxide (CO_2), a major contributor to global warming. In fact, the energy consumed by commercial and residential buildings produces about one-third of the country's annual CO_2 emissions. Emissions from industry and transportation each account for another one-third. Fortunately, City Agencies can use the purchasing process to ensure that their equipment uses energy resources efficiently.

6.1 Energy Star®

Energy Star® is a voluntary partnership between USEPA and the U.S. Department of Energy. The program promotes energy efficient products through product labeling and consumer education. Products that carry the Energy Star® label use less energy and reduce both energy costs and environmental impacts. A related program, Green Lights, promotes energy efficient lighting.

Since 1992, USEPA has worked with manufacturers to develop energy-efficiency guidelines for products for the office and home. Equipment in 29 product categories now qualify for the Energy Star® label. The Energy Star® Purchasing Initiative website, **www.epa.gov/appdstar/purchasing**,

provides information that can make it simple for you to purchase energy efficient products.

Visit the area of the website devoted to each product category to locate the criteria that designate the product as energy efficient. Then, incorporate similar procurement language into future bids to ensure that vendors provide products that meet your energy efficiency standards. If you want to compare the costs of energy efficient equipment with those of conventional models, use the savings calculator—a tool that allows you to calculate potential savings based on the Agency-specific data you provide. You will also find product information, including the specific model numbers of energy efficient equipment. See Appendix 4 for sample specifications and procurement language for energy efficient computers and copiers from the Commonwealth of Massachusetts Environmentally Preferable Purchasing program.

City Agencies can use ENERGY STAR® guidelines to purchase:

- Computers
- Monitors
- Copiers
- Printers
- Fax machines
- Scanners
- Ballasts
- Fluorescent lighting
- HID (high-intensity discharge) lighting
- Exit signs
- Boilers
- Chillers
- Furnaces
- Heat pumps
- Air conditioners
- Electric motors
- Transformers
- Roofing

6.2 Lighting

Increasing the efficiency of lighting means reducing the number of lamps needed and/or increasing the life expectancy of the lamps, reducing both replacement and labor costs. Lights also generate heat, so increasing the efficiency of lighting may provide an unexpected benefit in reduced summer cooling costs.

Fluorescent lamps are one of the most practical, energy efficient lighting options available for City Agencies. Almost 90% of the energy used by an incandescent bulb is released as heat rather than light. Fluorescent lamps use 75% to 80% less energy while lasting 10 to 15 times longer than incandescents. Fluorescent lighting includes long fluorescent tubes for overhead light fixtures, as well as compact fluorescent lamps (CFLs) that can replace traditional incandescent bulbs in task lighting.

For overhead light fixtures, consider replacing conventional 40 watt T-12 fluorescent tubes with lower wattage 32 or 34 watt T-12 tubes that can reduce energy use by 15 to 20%. Or, increase energy savings by purchasing the reduced diameter T-8 or T-5 lamp sizes. These smaller tubes give off more light and use even less energy than conventional fluorescent lamps.

For task lighting, CFLs are available in shapes and sizes that fit all types of fixtures. If you replace a 60 watt incandescent bulb with a 15 watt compact fluorescent, the CFL will last 10 times longer, require fewer lamp changes, and use less energy, while delivering the same amount of light.* CFLs also are now available in dimmable varieties and outdoor models.

The ballast is an integral part of a fluorescent fixture, providing proper starting and running voltage and current for the lamps. Magnetic ballasts that meet Federal energy efficiency standards are labeled with an **E**. Rather than use *magnetic* ballasts however, you should consider using *electronic* ballasts.

Electronic ballasts use 10 to 30% less energy to create the same amount of light as magnetic ballasts. They also generate less heat, operate at a higher frequency (which reduces flickering) and create less noise. Electronic ballasts can easily replace magnetic ballasts—they snap into the lighting fixture and vary according to the type/size of the lighting tube in use.

Also consider purchasing and installing timers and occupancy sensors that activate lighting when it is needed. Your energy efficiency may benefit from these inexpensive devices that will turn lights on and off for a specific period of time or during periods of use. Some locations where sensors could be installed include restrooms, stockrooms, and conference rooms.

For restrooms, stockrooms, and conference rooms, consider purchasing and installing occupancy sensors that activate lighting only when it is needed.

6.3 Building Improvements

Although building improvements may be spearheaded by staff in offices other than purchasing, it is important to understand that considerations in selecting the most efficient energy-saving equipment for your Agency are part of an overall EPP program. According to the Energy Cost Savings Council (an organization that promotes the benefits of retrofitting commercial and industrial buildings with energy efficient products),

* *How to Reduce Your Energy Costs.* Insights, Inc. (Boston) 1991. p. 17.

upgrading facilities with more energy efficient products can reduce energy costs by one dollar per square foot per year, for the life of the improvements. Building upgrades include any or all of the following:

- Installing efficient lamps, ballasts, and lighting controls.
- Improving HVAC (heating, ventilation, and air conditioning) equipment.
- Installing new motors and drives.
- Installing automated lighting or HVAC monitoring systems.
- Adding weatherstripping and caulking.
- Insulating and pressurizing the building envelope.
- Replacing windows and doors with insulated, thermal pane, and airtight substitutes.
- Metering energy use.

Energy upgrades also reduce maintenance costs, since newer equipment needs less attention. Sharing EPP goals throughout your Agency will help ensure that the most environmentally preferable products and services are considered for all purchasing decisions.

6.4 Technical Assistance

The DCAS Office of Energy Conservation oversees the City's Energy Cost Reduction or ENCORE Program. In cooperation with the New York Power Authority, which provides low cost financing, ENCORE performs energy studies and implements energy projects ranging from installation of high efficiency lighting to boiler replacement or upgrading insulation.

You are not alone in your quest to identify and select the most energy efficient equipment and products for your Agency. The DCAS Office of Energy Conservation oversees the City's Energy Cost Reduction or ENCORE Program. In cooperation with the New York Power Authority, which provides low cost financing, ENCORE performs energy studies and implements energy projects ranging from installation of high efficiency lighting to boiler replacement or upgrading insulation. For further information, contact Richard Appelbaum at (212) 669-8709.

The New York State Energy Research and Development Authority also offers assistance through its FlexTech Program. Visit them on the web at **www.nyserda.org**.

Section 6 Purchasing for Energy Efficiency

Increasing Efficiency Reduces Energy Costs

Applying energy conservation requirements over a wide range of products will reduce energy use and save money.

Completed	Task
☐	1. Is there an opportunity to conserve energy through this procurement?
☐	2. Is there an energy conservation claim made by the product manufacturer? Does the equipment have the ENERGY STAR® designation?
☐	3. Are there opportunities to improve building energy performance by purchasing and installing energy saving products and technologies?
☐	4. Do the specifications for leased equipment include requirements and targets for energy savings?

Energy Efficiency On-Line Resources

Federal Programs

US Environmental Protection Agency's ENERGY STAR® Program: **http://www.energystar.gov**

US Department of Energy's Energy Efficiency and Renewable Energy Network:
http://www.eren.doe.gov

US Department of Energy's Federal Energy Management Program:
http://www.eren.doe.gov/femp

US Department of Energy's Energy Information Administration:
http://www.eia.doe.gov/emeu/consumption

State Programs

California Energy Commission: **http://www.energy.ca.gov**

California Board for Energy Efficiency: **http://www.cbee.org**

Colorado Governor's Office of Energy Management and Conservation:
http://www.state.co.us/oemc

New Mexico Energy and Management Division: **http://www.emnrd.state.nm.us/ecmd**

New York State Energy Research Development Authority's principal goal is to help businesses, municipalities, and residents of New York State solve their energy and environmental problems:
http://www.nyserda.org/programs.html

Oregon Office of Energy Program: **http://www.energy.state.or.us**

Organizations

CEERT is a unique collaboration of major environmental organizations, public interest groups, and clean technology companies working to achieve a more sustainable energy future:
http://www.cleanpower.org

Solstice is the on-line resource for information about renewable energy, efficiency, and sustainable development: **http://solstice.crest.org/common/crestinfo.shtml**

United Nations Development Programme, Sustainable Energy and Environment Division:
http://www.undp.org/seed

Section 7 Agency Environmentally Preferable Purchasing Policy

7.1 Procurement Policy Statement
7.2 Definitions
7.3 Policy Implementation
7.4 Precedence
7.5 Reasonable Price
7.6 Applicability
7.7 Reporting

Section 7 Checklist: A Bold Approach to EPP

7.0 Agency Environmentally Preferable Purchasing Policy

OBJECTIVE:

- **Identify EPP policy objectives and elements appropriate for City Agencies.**

This manual has introduced a number of opportunities to enhance the environmental purchasing performance of your Agency. The next step is to develop an Agency-wide EPP policy to guide your Agency's efforts to achieve waste prevention, toxicity reduction, and energy efficiency. A clearly stated EPP policy establishes a framework for your program and expresses to vendors, suppliers, and contractors your Agency's intent to purchase environmentally preferable and recycled content products. The policy can state your Agency's strong commitment to specific program goals. A flexible approach to achieving those goals can be outlined in guidelines for policy implementation. An Agency EPP policy provides the foundation for a consistent, successful Environmentally Preferable Purchasing program. Appendix 5 offers sample text for an Agency policy.

Input from Agency staff, including your Waste Prevention Coordinator, is essential to the development of a policy statement that clearly and definitively states the Agency's goals and supports future purchasing efforts. An Agency EPP policy may contain any or all of the following elements.

7.1 Procurement Policy Statement

The policy statement is the core of your Agency's EPP program. It indicates the Agency's intent to purchase products and services that prevent waste, reduce toxicity exposure and contain the highest amount practicable of post-consumer recycled content. The policy statement specifies that environmentally preferable products must meet the user's performance standards, and that these products must meet reasonable standards for quality, price and availability.

For example, your Environmentally Preferable Purchasing policy statement might read:

It is the policy of the New York City Department of _____ to purchase recycled content products and environmentally preferable products and services. This

*includes waste preventing products and services; remanufactured, reusable, and rechargeable products; and services that reduce the use and disposal of toxic chemicals. This policy will be carried out to the extent possible, consistent with the Department's obligations and purpose.**

The Commissioner of the Department of Business Services issued an Agency Waste Prevention and Recycling Policy in April 1999.

The policy statement also may include an explanation of your Agency's goals and purposes in establishing an EPP program:

The New York City Department of _____ is committed to resource conservation and waste prevention. Through the environmentally preferable purchasing process, the New York City Department of _____ can reduce the quantity of solid waste generated by the Department and strengthen the markets for New York City's recyclable materials.

7.2 Definitions

This section of the policy statement provides definitions for the terms that your Agency will use in writing bid specifications and in making selections of environmentally preferable products. Ensure that these definitions are consistent with those used in other City procurements and with the Procurement Policy Board Rules. See Section 2.5 of this manual for suggested definitions.

7.3 Policy Implementation

This section provides instructions on implementing the EPP policy. Describe the chain of staff responsibility. For example:

- Who will designate products and services as environmentally preferable?
- Who will establish recycled content standards?
- Who will develop specifications for the procurement and use of environmentally preferable products?
- Who will ensure that purchasing procedures do not discriminate against environmentally preferable products?

*Adapted from *Resourceful Purchasing.* Alameda County Source Reduction and Recycling Board. 1996.

7.4 Precedence

Sometimes, purchasers may face a choice among environmentally preferable products. For example, one manufacturer may offer a product in a waste preventing model, while a different manufacturer offers a model with post-consumer recycled content. It is important to clarify your Agency's preferences. For example, if your Agency purchases a lot of janitorial products, then reducing toxicity will be a high concern. If your Agency uses a lot of batteries, then you will want to emphasize reusability. This section of the policy statement provides guidance in selecting among or ranking different environmental attributes to assist staff with purchasing decisions.

7.5 Reasonable Price

Many factors enter into a determination of the life-span cost of a product or service, and waste preventing products may offer benefits that are difficult to quantify. Agency policy can direct purchasers to select waste preventing and recycled products when they are available at a reasonable price, and recognize that Agency purchasers are authorized to specify recycled content products and to buy them without price comparison to the non-recycled alternative.

7.6 Applicability

Most Mayoral Agencies have a designated purchasing staff, but also authorize other Agency employees to buy office and other supplies. For this reason, this section can clarify who is expected to comply with the EPP policy. In some Agencies, all personnel may need to be aware of the policy and how to implement it; in others, only staff with specific purchasing responsibilities will implement the policy.

In addition, contractors may purchase products and materials on your Agency's behalf. For example, printers may purchase paper and other supplies for Agency publications. You may want to consider and state whether these organizations also are subject to the Agency's purchasing policy.

7.7 Reporting

Your Agency may wish to include a summary of annual purchases of environmentally preferable products in your annual report to the Mayor's Office of Operations as required by Mayoral Directive 96-2. Guidance for monitoring and tracking your purchases is provided in Section 9.

Section 7 Agency Environmentally Preferable Purchasing Policy

A Bold Approach to EPP

Environmentally Preferable Purchasing programs demand a rigorous commitment by purchasing staff, who must be supported by dedicated management and clear policies.

Completed	Task
☐	1. Is there a clear policy directing you to purchase environmentally preferable products and services?
☐	2. Are definitions in place to guide you in developing bid specification language for EPP?
☐	3. Has your Agency determined which EPP criteria it wishes to emphasize in purchasing decisions? See the list of options on the back of this checklist.
☐	4. Is there a policy and procedure for comparing similar products and services to ensure the purchase of the most environmentally preferable alternative?
☐	5. Do the policy and procedures include a reporting mechanism to track EPP progress?

What are your Agency's priorities for Environmentally Preferable Purchasing?

- Reusable
- Remanufactured
- Recycled content
- Recyclability
- Reduced toxicity
- Energy efficiency

On-Line Resources

City of Seattle Environmentally Responsible Purchasing Policy, adopted February 2000:
http://www.ci.seattle.wa.us/environment/GreenPurchasing.htm

National Association of Counties, draft Purchasing Resolution:
www.naco.org/programs/environ/purchase.cfm

State of Minnesota Solid Waste Management Coordinating Board:
www.swmcb.org/EPPG/1_1.htm

Section 8 Developing Bids for Environmentally Preferable Products and Services

8.1 Best Value or Life-span Analysis
8.2 Using Life-span Analysis to Support EPP
Exhibit 8A: Sample Life-span Analysis for Air Filters
8.3 Calculations for Economic Analysis
Exhibit 8B: Calculations for Economic Analysis
Exhibit 8C: Sample Life-span Analysis for Sign Manufacturing
8.4 Bid and Contracting Procedures
8.4.1 Identify the Potential Environmental Attributes of the Product
8.4.2 Review and Revise Specifications
8.5 Review and Revise Purchasing Documents
8.6 Contractor and Grantee Requirements
Exhibit 8D: EPP Checklist
Exhibit 8E: Vendor Recycled Product Certification

Section 8 Checklist: Well-written Specifications Are the Foundation of an EPP Program

8.0 Developing Bids for Environmentally Preferable Products and Services

OBJECTIVE:

- **Review approaches to incorporating environmental concepts into bid specifications.**

New York City's competitive bidding process is designed to ensure that City Agencies obtain quality goods and services at a reasonable price. The Procurement Policy Board (PPB) Rules encourage the use of competitive sealed bids and require Agencies to accept the lowest responsible and responsive bid. In addition, Agencies can seek approval for a special case purchase, when circumstances warrant. These special case circumstances might apply when "testing, experimentation, or evaluation is required to determine the feasibility and application of an innovative product, approach, or technology not currently used by the City" (PPB Rules, Chapter 3-01d 2 (iv)).

PPB Rules should not be perceived as a barrier to purchasing environmentally preferable products and services for your Agency.

It is not illegal, impossible, or even difficult to purchase environmentally preferable and recycled content products. Vendors will submit responsive bids for environmentally preferable products and services in response to the specifications set forth in Agency Invitations to Bid. Through well-crafted bid documents, Agencies can specify the environmental attributes or the level of recycled content they want in individual products, and accept no alternatives. Product research and evaluation of life-span costs can guide the design of bid specifications that present a level playing field for all bidders, while introducing environmental alternatives.

8.1 Best Value or Life-span Analysis

Best Value or Life-span Analysis is designed to minimize City expenditures by basing purchasing decisions on a variety of factors affecting the cost over the life of a product, rather than the initial purchase price alone. While two or more products may perform essentially the same function and be offered to the City at comparable prices, one of the products may actually represent a better buy either because it lasts longer, uses less energy, or produces less waste. If purchasing decisions do not reflect the cost to the City of using, replacing, and disposing of the product, in addition to the initial cost of purchase, the City may not be getting the best value for its money.

If purchasing decisions do not reflect the cost to the City of using, replacing, and disposing the product, in addition to the initial cost of purchase, the City may not be getting the best value for its limited purchasing dollars.

The factors considered in life-span analysis will vary depending on the product or material under consideration. Generally, life-span analyses may compare such elements as: initial costs, training costs, operating and maintenance costs, and disposal costs. Each of these elements is discussed below.

- **Initial costs** refers to the expenditures to acquire and establish use of a product. Specifically, the purchase price, shipping fees, and installation costs, which include any necessary costs associated with providing access to water and electricity.

- **Training costs** may include materials and labor to educate current and future employees on how to use the product or material properly.

- **Operating and maintenance (O&M) costs** refer to the annual expenditures for parts, labor, and supplies for routine operations, as well as for preventive maintenance and repairs over the life of the product or equipment. O&M also includes the costs of gas, electricity, and water to operate equipment. A crucial element in determining O&M costs is the anticipated usable life of the product or equipment. Product life can be estimated based on both vendor warranties and user experience.

- **Disposal costs** cover the handling of discarded operating and maintenance supplies, as well as associated packaging wastes during the functional life of the product. This expense also includes the costs associated with the final disposal of the product or equipment when it is no longer operational or needed.

8.2 Using Life-span Analysis to Support EPP

Use life-span analysis to support an environmentally preferable procurement or to compare responsive bids that meet your EPP criteria. Be sure that the technical evaluation factors contain sufficient detail so vendors responding to a solicitation offer comparable, environmentally preferable products.

To support their effort to purchase a more durable, longer-life battery, the State of Georgia required bidders responding to vehicle battery solicitations to apply a formula based on the initial purchase price plus factors related to

warranty conditions, assuming that a battery with a longer warranty is more durable than a battery with a shorter warranty period. This example demonstrates how states are factoring warranty periods into the cost of products. Bids must be supported with technical data confirming the battery's reserve capacity and warranty. For more information, contact the Georgia State Purchasing Office at (404) 651-9288 or **www.state.ga.us/Departments/DOAS**.

Formula for Vehicle Battery Bid

Life-Cycle Cost	=	(P+RC+$50) x (12/WP)
P	=	Quoted Price
RC	=	Replacement Cost of failed battery
$50	=	Labor to replace failed battery
WP	=	Quoted Warranty Period (months)

Exhibit 8A provides an example of a simple life-span analysis that documents the environmentally preferable, lowest cost product. This type of analysis can be used to support EPP specifications that an Agency wishes to include in an Invitation to Bid.

Exhibit 8A Sample Life-span Analysis for Air Filters*

Staff of a local government facility purchased, used, and discarded **100 single-use filters per month** from the facility's air circulation system. They sought a more durable, environmentally preferable substitute, and used life-span analysis to guide their purchasing decision. They compared the **annual costs** for 1) single-use filters, 2) disposable filter medium in reusable steel frames, and 3) completely reusable aluminum filters.

YEAR ONE	**Single-use filters**	**Reusable frame**	**Reusable filters**
Purchase price	1200 @ $0.98 = $1,176	Reusable frames 100 x $10 + Filter medium 1200 @ $0.47 = $1,564	200 (1 in service & 1 back-up per slot) x $10.58 = $2,116
Agency labor	15 minutes per filter change (for 1200 filters) @ $18/hr. = $5,400	10 minutes per filter medium change (for 1200 filter mediums) @ $18/hr. = $3,600	10 minutes per filter exchange and clean (1200 times per year) @ $18/hr. = $3,600
Solid waste‡	1 lb per filter + 1 lb pkg. per 12 filters = 1300 lbs @ $151/ton = $98	2 oz. per filter medium or 150 lbs @ $151/ton = $11	$0
Year One TOTAL	**$6,674**	**$5,175**	**$5,716**

YEAR TWO	**Single-use filters**	**Reusable frame**	**Reusable filters**
Purchase price	1200 @ $0.98 = $1,176	Filter medium 1200 @ $0.47 = $564	$0
Agency labor	15 minutes per filter change @ $18/hr. = $5,400	10 minutes per filter medium change @ $18/hr. = $3,600	10 minutes per filter exchange and clean @ $18/hr. = $3,600
Solid waste‡	1 lb per filter + 1 lb pkg. per 12 filters = 1300 lbs @ $151/ton = $98	2 oz. per filter medium or 150 lbs @ $151/ton = $11	$0
Year Two TOTAL	**$6,674**	**$4,175**	**$3,600**

*Adapted from Brown, Kenneth. *Source Reduction Now.* Minnesota Office of Environmental Assistance. 1996.

‡The Department of Sanitation estimates that on average it costs $151/ton to collect and dispose of waste that it handles from City agencies, institutions, and residents.

In this example, the savings that result from using washable, reusable aluminum filters are apparent in the first year but become even greater in the second year. The purchase price of the reusable filter is initially higher than the cost to purchase the reusable frame with the disposable filter medium. Over time, however, the cost savings associated with the fully reusable product become evident. The environmental benefit of eliminating the waste associated with these filters is a bonus!

Use this analysis to convince Agency staff that, while the reusable filters are initially more expensive, a bid to purchase reusable filters will reduce costs over time and will not have a negative impact on staff time. Or, use this format to compare responsive bids submitted by vendors of reusable filters to select the lowest cost product.

8.3 Calculations for Economic Analysis

To perform a simple analysis, begin by accumulating all of the information necessary to your calculations. This will include initial and ongoing cost data as well as information concerning the anticipated usable life of the product and any environmental issues of concern to your Agency. For example, before you start to compare costs, you will want to review each product's warranty. What is the fully warranted life of the product, or for how long will the manufacturer either refund the full purchase price or replace the product? Can you purchase an extended warranty and, if so, what are the additional costs and benefits?

Exhibit 8B below can be used as a reference for determining the cost data you can use to compare competing products. Remember that you are considering both the initial costs and the ongoing costs of each product

Exhibit 8B Calculations for Economic Analysis

A	Initial costs (one-time or start-up costs)	Purchase price (including cost of extended warranty, if applicable) + Installation costs (including delivery, power hook-ups, new plumbing, etc.) + Staff training time and materials (if any).
B	Labor (operations, waste management, additional training)	Hours x Rate
C	Parts and supplies for regular use	Cost x Number purchased per year
D	Utilities (gas, electricity, water)	Cost x Kilowatt hours or cubic feet per year
E	Disposal‡	(Pounds of waste (including packaging)/2000) x $151
F	Recurring costs	Labor + Parts & Supplies + Utilities + Disposal (B + C + D + E)
G	First-year cost of operations	Initial costs + Recurring costs (A + F)
H	Subsequent year(s) cost of operations	Recurring costs x Warranted life of product

‡ The Department of Sanitation estimates that on average it costs $151/ton to collect and dispose of waste that it handles from City agencies, institutions, and residents.

under consideration. Some of the ongoing costs listed (such as disposal and utility costs) will be hard to factor in when making purchasing decisions because most City Agencies do not directly pay for these out of their budgets. These costs are included in the chart below because an essential part of an EPP program involves considering *all* the costs associated with the use and disposal of a product, even those we normally do not see.

In Exhibit 8C, a government Agency wishes to reduce emissions of VOCs (volatile organic compounds) in its sign operation and uses the calculations from Exhibit 8B to compare three different techniques for applying decorative patterns to signs: painting, stick-on decals, and vinyl transfers. The analysis is based on production of 120 signs per year.

Option 1, continuing the current painting operation with a substitute paint product, is initially the least expensive since it does not require a capital investment in equipment. However, the vinyl application equipment also eliminates VOCs and reduces recurring costs over the life of the product.

Some of the factors that may influence your purchasing decisions cannot be quantified. For example, if your goal is to replace a hazardous product with a non-hazardous alternative, the presence or absence of toxic constituents may be more important to your selection than a potential minor increase in the initial cost of the product. Other variables to consider include: reduced labor needs, freeing sign painters and custodial staff to complete other projects, and improved health and safety conditions for the staff.

Exhibit 8C Sample Life-span Analysis for Sign Manufacturing

Analysis	Option 1 Low VOC Paint	Option 2 Decal	Option 3 Vinyl
Initial costs	$0	$45,000 to purchase computer and equipment & train staff	$5,000 for equipment and training
Agency labor	72 hrs x $20/hr. = $1,440	12 hrs. x $20/hr. = $240	12 hrs. x $20/hr. = $240
Supplies	$3 x 120 signs = $360	$10 x 120 signs = $1,200	$10 x 120 signs = $1,200
Disposal	120 lbs. @ $151/ton = $9	$0 minimal waste	$0 minimal waste
Recurring costs	$1,809	$1,440	$1,440
First-year cost of operation	$1,809	$46,440	$6,440
Subsequent years	$1,809	$1,440	$1,440

8.4 Bid and Contracting Procedures

You will not have to do all of the work outlined in this section every time you bid. Once you have a process in place, you can subject each proposed bid to an environmental review. The checklist in Exhibit 8D (in Section 8.6 below) can be used as a model on which to base your Agency review documents. Using the Checklist Tabs for Sections 3 through 6 as a guide, consider incorporating the steps discussed below into your Environmentally Preferable Purchasing process.

8.4.1 Identify the Potential Environmental Attributes of the Product

This step may require you to perform some research and analysis and refer to the resources provided in Section 10. Through this effort you will determine whether there is an environmentally preferable product or service that you can evaluate to see if it meets your performance standards.

Begin by looking for those durable, reusable, and/or remanufactured alternatives that eliminate waste.

Begin by looking for those durable, reusable, and/or remanufactured alternatives that eliminate waste.

- Check with your current vendors who may offer alternative products.
- Consider issuing a Request for Information asking vendors and others, such as trade associations, for information about environmentally preferable alternatives for a specific product or group of products.
- Talk with other City Agencies who perform similar services and may already be buying a waste preventing product.
- Look at catalogs and websites to see what kinds of products others have purchased and found satisfactory, then follow up with manufacturers who can provide specific performance details for their products.
- Don't forget to ask whether vendors can supply the product that you select with minimal packaging.

Second, consider whether this product can be purchased with recycled content.

Consider whether this product can be purchased with recycled content.

- Again, check with your current vendors to see if they can provide the same product manufactured with recycled content.
- Consider issuing a Request for Information asking vendors and others,

such as the Buy Recycled Business Alliance of New York, for information about recycled content alternatives for a specific product or group of products.

- Is there a USEPA Procurement Guideline that specifies a range of recycled content? Check USEPA's vendor lists.
- Also, check to see whether the recycled product is available through a New York State contract.

Is the product recyclable in New York City?

Finally, is the product recyclable in New York City?

- Can the spent product, product packaging, and/or product container be source separated and included with other recyclable materials for DOS collection?
- Will a private vendor pick up the material at one or more locations to recycle it?
- Can your Agency deliver the material to a vendor or processor so that it can be recycled?

If not, consider making specification changes that can enhance the recyclability of your product choice.

8.4.2 Review and Revise Specifications

The next step is the specification. Your environmentally preferable product performance requirements probably will not differ significantly from the performance requirements for the current product. However, there are a few issues to consider.

Revisions to Current Requirements: *Mayoral Directive 96-2* urges Agencies to review and revise their procurement specifications and policies to incorporate waste prevention. You will want to evaluate your Agency's bid specifications and **eliminate** any of the following requirements, since they commonly act as barriers to buying environmentally preferable products:

- New products only.
- Virgin content only.
- No recycled content.
- High brightness levels for paper.

Additional Performance Requirements: You probably do not need additional, complex performance requirements in specifications for environmentally preferable products. Generally, you can simply add your waste prevention or recycled content requirements to the specification language currently used by your Agency or DCAS.

> **For example, in modifying the specifications for Absorbent Compound: Floor (Oil and Water), DCAS added the following language prior to the Chemical and Physical Requirements:**
>
> **3.1 Oil and water absorbents shall be produced from recycled organic materials.**
> **3.2 Oil and water absorbents shall consist of a uniform mixture of natural and/or recycled organic materials processed to conform to this specification. Silicate-based materials shall not be acceptable.**
> **3.3 Oil and water absorbent products shall be non-toxic.**

Review the current specification and talk with key staff as you prepare to purchase any new waste preventing or recycled content product. Ask staff how they use the product and what problems they have experienced that they want to avoid. This discussion will help you identify their concerns, as well as identify any perceptual barriers that might interfere with acceptance of environmentally preferable product substitutes.

> **For example, staff from City garages complained that the absorbent compound purchased through DCAS clumped and became unusable. In response, DCAS added the following language to their specification:**
>
> **3.4 Oil and waste absorbent material shall be stable during storage and shall not cake on exposure to humid atmospheres in open containers.**

You will want to assure Agency staff that the performance requirements for the environmentally preferable product are identical to those for the product they are currently using. If you have technical information concerning the environmentally preferable product on hand, you will feel more comfortable discussing the attributes of that product.

New York City no longer operates extensive testing facilities. It is not economically feasible to test every environmentally preferable product against complex technical specifications. However, most companies test their products regularly and have test data to share if you request it. Many companies test products to meet standards and certifications from trade

associations or standards-setting organizations. If you have difficulty getting test results or certification information from a company, you may want to seek other suppliers.

If you need to test a product's performance, you can ask Agency staff to conduct simple on-site tests. Staff can give you excellent test suggestions for individual products, based on how they use the item. You may find useful data from tests conducted at County or State testing facilities. Other jurisdictions may have tested a product you are considering and have contacts who are willing to talk about their experience. You do not need much test data for the more common recycled products on the market today, if you buy from responsible companies.

Standard GMA pallets (48" x 40") can be reused at the DCAS Storehouse and are the most desirable for pallet reuse and recycling programs.

Packaging Specifications: Bid specifications offer an outstanding opportunity to insert waste prevention requirements for packaging. Suppliers appreciate explicit directions concerning packaging, so state exactly what you want. For example, standard GMA pallets (48" x 40") can be reused at the DCAS Storehouse and are the most desirable for pallet reuse and recycling programs. Ask suppliers to deliver their product on standard pallets whenever possible. Reusable shipping crates or totes that the vendor will take back on a return trip are preferable to packaging that your Agency will need to manage and discard. Also, consider consolidating multiple small deliveries into a single weekly delivery.

Training: If the use of the environmentally preferable product requires users to alter the way they perform routine tasks, such as parts cleaning or maintenance activities, you may wish to consider requiring that the vendor provide on-site training for your staff. Even something as simple as a copy machine set to default to double-sided copying may be more readily accepted if the staff receives basic instruction in the use of unfamiliar features. You may wish to incorporate a training requirement into your standard terms and conditions.

8.5 Review and Revise Purchasing Documents

Review your Agency's standard terms and conditions, as well as any special terms and conditions or instructions used to purchase the product. Boilerplate language may appear in pre-printed forms or in standard clauses

used for all contracts. The following clauses, adapted from Alameda County, CA, may support your environmentally preferable purchasing efforts.

Policy Clause: Prominently state your Agency's commitment to environmentally preferable products. For example, you might state the following:

> *The New York City Department of _____ is committed to waste prevention. It is the policy of the Department to use the purchasing process to reduce the quantity and toxicity of solid waste generated by the Department by increasing purchases of durable, reusable, remanufactured, less-toxic, and recycled content products.*

Warranty Clause: Some warranty clauses explicitly discriminate against recycled or remanufactured products by requiring that the original manufacturer's equipment or supplies be used. Review your warranty clause and adjust it as needed. You can use a variation of the following:

> *Equipment warranties shall not discriminate against remanufactured products or components used for standard maintenance, nor against remanufactured or recycled products used in the operation or maintenance of the equipment.*

Termination and Damage Provision Clauses: New York City uses these standard clauses to protect itself from unsatisfactory service or products that do not meet specifications. These clauses can be extended to include certifications of environmentally preferable properties, such as reduced toxicity or recycled content.

Packaging Clause: Packaging clauses provide another opportunity to alert vendors to your waste reduction goals and encourage them to be creative in reducing packaging waste. The following clause currently is included in New York City contracts:

> *Whenever practicable, packaging shall eliminate waste; reduce waste by weight, volume, and toxicity without substituting a material that is not recyclable; and should contain recycled content.*

You may want to consider incorporating additional language addressing your Agency's desire to encourage its vendors to reduce waste volume and toxicity by using environmentally preferable packaging options whenever possible.

Options may include backhauling product packaging to the supplier for reuse or recycling, shipping in bulk or reduced packaging, using vegetable-based inks for packaging printing, using reusable product packaging, as well as using recycled content or recyclable packaging material.

Definitions: If you stipulate reduced toxicity or recycled content, provide explicit directions as to what constitutes an acceptable response. Once you have adopted specific definitions in your policy statement, the corresponding terms can be incorporated into your bid documents.

Certification: Bidders are expected to sign a certification of environmentally preferable properties such as recycled content. Certifications help you get what you ordered. The certification should be signed by a responsible person in the company. Vendors who are distributors may not have first hand knowledge of recycled content or waste preventing properties. These vendors can obtain certification signatures from the manufacturers. Have them include the manufacturer's telephone number so you can verify information directly, if necessary.

The City of New York requires completed certifications at the time bids are submitted so they can award the contract with confidence that certified characteristics will be met. Exhibit 8E in Section 8.6 below provides a sample of New York City's certification forms.

Labeling: Labeling products with their recycled content will help to educate staff, customers, and New York City residents in general. Labeling is especially important for printed matter and promotional items that receive wide distribution. Other products, like copy paper and re-refined oil, can be labeled on the packaging. Insert a clause requiring that products be labeled with the percentage of total and post-consumer recovered material used to make the product (e.g., "30% total recycled fiber; 20% post-consumer fiber.")

Vendor Reporting: If your monitoring program depends on vendor reports of recycled products sold to you, then you need a clause that establishes reporting procedures. See Section 9: Monitoring Your Progress, for more information. Vendors track sales to specific customers for their own internal stocking and invoicing procedures. They may be able to give you a report on your purchases in a format that is useful to you. At a minimum, you can require reports that total the number of units of the same item sold to your Agency during the reporting period.

Vendor reporting requirements will differ from one contract to the next. If only a few products are on contract, the requirements will be simpler than if there are hundreds. Sophisticated vendors have their own computer tracking systems. Talk with them to develop the easiest reporting system for you both.

8.6 Contractor and Grantee Requirements

Encourage your contractors and grantees to adopt your environmentally preferable purchasing policies. Use Requests for Proposals and Grant Applications to spell out the requirements. *Mayoral Directive 96-2* requires that responses to RFPs be single-spaced and double-sided, and suggests limiting the number of copies of responses to reduce paper use. Consider adding a requirement that Contractors and Grantees use recycled paper that meets New York City's recycled content standards, and that the first page of all printed documents be labeled according to a standard format, such as *"printed on recycled paper."*

If you have established recycled content standards for individual products, consider requiring contractors and grantees to meet these same standards. Reinforce your position by providing a table of your recycled content standards in solicitation documents or grant applications.

Don't forget to ask contractors and grantees to report on their purchases of waste preventing and recycled products. For example, printing contractors and copy companies are likely to have good data about supplies used for your contract.

Exhibit 8D Environmentally Preferable Purchasing Checklist

Purchaser's Name: _____Telephone Number:_____

Product Description: _____Intended Use: _____

Replacing: (Is this product currently obtained from the DCAS Central Storehouse or via a New York City Requirements Contract? ❑ yes ❑ no

If yes, please provide Contract or Catalog reference number.)

ENVIRONMENTAL ATTRIBUTES

Is the product: Reusable Rechargeable Remanufactured (Circle one)

Other (please specify)

Is the product less toxic? ❑ yes ❑ no

Specify toxic constituent(s) reduced or eliminated.

Does the product contain recycled content material? ❑ yes ❑ no

Specify the material and percentage of pre- and post-consumer recycled content.

Is the product recyclable through one of the following: ❑ yes ❑ no

DOS Collection, DCAS Salvage, Private Vendor, Other (please specify)

Is the product packaging recyclable through one of the following: ❑ yes ❑ no

DOS Collection, DCAS Salvage, Private Vendor, Other (please specify)?

Is there an opportunity to reduce transportation/delivery packaging? ❑ yes ❑ no

Vendor will take back packaging, Reusable packaging, Reduced packaging,

Other (please specify)

For leased products/ equipment, how does the vendor manage the product when it is returned?

Remanufactured Recycled Refurbished Other (please specify)

PERFORMANCE CRITERIA/SPECIFICATIONS

Meets all critical performance criteria. ❑ yes ❑ no

Test data established and testing scheduled or performed. ❑ yes ❑ no

Waste prevention requirements incorporated into specification. ❑ yes ❑ no

Recycled content requirements incorporated into specification. ❑ yes ❑ no

INVITATION TO BID

Labeling requirements incorporated into Invitation to Bid. ❑ yes ❑ no

Certification requirements incorporated into Invitation to Bid. ❑ yes ❑ no

User training requirements incorporated into Invitation to Bid. ❑ yes ❑ no

Reporting requirements incorporated into Invitation to Bid. ❑ yes ❑ no

Other requirements incorporated into Invitation to Bid (please specify). ❑ yes ❑ no

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Exhibit 8E Vendor Recycled Product Certification

BIDDER'S CERTIFICATE — NON-PAPER PRODUCTS

This is to certify that I, [_____], will provide the items listed below manufactured with Minimum Recycled Content as specified in the columns below, containing Recycled Material as defined in the bid, certified by the manufacturer below, in compliance with the requirements in the bid documents and/or the New York City specifications incorporated therein for these items.

Bid Item Number	Brand Offered	% Recycled Material of Total Item Weight/Category (Recovered)	(Post-consumer)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Bidder Company _____

Signature: _____

Title: _____

If the bidder is not the manufacturer, bidder must obtain the manufacturer's certification.

MANUFACTURER'S CERTIFICATE

The material provided for the above items will be/is manufactured by this firm to contain not less than the Minimum Recycled Content specified above.

It is agreed that a representative of the City of New York shall have access to the mill/plant and production records any time during working hours for the purpose of verifying percentages and use of recovered material in the items specified above.

Name of Manufacturer: _____

Address: _____

_____

Plant Official Signature: _____

Title: _____

Telephone Number: _____ **Date:** _____

Section 8 Developing Bids for Environmentally Preferable Products and Services

Well-written Specifications Are the Foundation of an EPP Program

Use bid language to ensure vendors offer comparable products that meet Agency EPP guidelines.

Completed	Task
☐	1. Have you identified the potential environmental attributes of the product and/or service?
☐	2. Have you identified the other elements that might be used to compare responsive products and services (e.g., initial costs, training costs, operating & maintenance costs, disposal costs, etc.)?
☐	3. Do the technical evaluation factors contain sufficient detail to ensure your ability to compare responsive products?
☐	4. Have you removed any language in the Invitation to Bid that may serve to prohibit the offer of EPP products?
☐	5. Are there any requirements to minimize the quantity of primary and secondary packaging?
☐	6. Have you included the NYC Bidder's Certification for products with recycled content? See the back of this checklist.

NYC Bidder's Certificate

BIDDER'S CERTIFICATE — NON-PAPER PRODUCTS

This is to certify that I, [_____], will provide the items listed below manufactured with Minimum Recycled Content as specified in the columns below, containing Recycled Material as defined in the bid, certified by the manufacturer below, in compliance with the requirements in the bid documents and/or the New York City specifications incorporated therein for these items.

Bid Item Number	Brand Offered	% Recycled Material of Total Item Weight/Category (Recovered)	(Post-consumer)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Bidder Company _____

Signature: _____

Title: _____

If the bidder is not the manufacturer, bidder must obtain the manufacturer's certification.

MANUFACTURER'S CERTIFICATE

The material provided for the above items will be/is manufactured by this firm to contain not less than the Minimum Recycled Content specified above.

It is agreed that a representative of the City of New York shall have access to the mill/plant and production records any time during working hours for the purpose of verifying percentages and use of recovered material in the items specified above.

Name of Manufacturer: _____

Address: _____

_____

Plant Official Signature: _____

Title: _____

Telephone Number: _____ **Date:** _____

Section 9 Monitoring Your Progress

9.1 Developing Baseline Data
9.2 Environmentally Preferable Products Data
9.3 Fiscal Year Summary
9.4 Vendor Reports

Section 9 Checklist: Determining EPP Program Success

9.0 Monitoring Your Progress

OBJECTIVES:

- **Understand the importance of tracking environmental purchases.**
- **Provide guidance in developing a tracking system.**

Tracking your Agency's progress toward meeting its environmentally preferable purchasing goals provides the data necessary to assess the effectiveness of your EPP efforts and justify any short-term costs associated with establishing the EPP program. Tracking the environmental and economic impacts of purchases of specific products and services allows each Agency to quantify measurable results and identify successes. Developing an annual summary of your EPP program's environmental and economic accomplishments can enhance the public perception of your Agency's commitment. You will need to gather data and develop reports.

9.1 Developing Baseline Data

To create a database, begin by identifying the information categories you will need to produce reports and case studies. Then, enter data for each product or service currently purchased for which you might seek an environmentally preferable alternative. This is the baseline data against which you will measure your purchases of waste preventing and recycled content products. The following is a list of suggested information fields:

- **Order Number:** The contract, agreement, P.O., or other order number you assign to the transaction.
- **Date:** The date of the order.
- **Vendor:** The name of the vendor from whom you order.
- **Buyer:** The name of the person placing the order.
- **Item Number:** The commodity code, if any.
- **Item Description:** Purchase description or specifications.
- **Environmentally preferable characteristic(s) of item:** (if applicable) Reusable, remanufactured, reduced toxicity, reduced packaging.
- **Percentage of post-consumer recycled content:** (if applicable)
- **Percentage of total recycled content:** (if applicable)
- **Unit of Measure:** The unit in which you order the item, e.g., each,

dozen. If the unit of measure is box, case, carton, ream, or other variable, designate the number of items in each unit.

- **Unit Weight:** The weight of the item, box, carton, ream, or other variable.
- **Packaging Description:** The material(s), units, and sizes of packaging
- **Packaging Weight:** The weight of the packaging for the item, box, carton, ream, or other variable.
- **Quantity:** The total amount you ordered in the past fiscal year.
- **Unit Price:** The price you pay for the product by unit.
- **Other Costs:** Costs for training, labor, utilities, etc. related to the use of this product.

9.2 Environmentally Preferable Products Data

As you begin to purchase environmentally preferable products, enter the same categories of information about those purchases.

9.3 Fiscal Year Summary

At the end of the fiscal year, compare your baseline purchases to your purchases of environmentally preferable products and compute results for the fiscal year. For example, an Agency could replace the cartridges from the original equipment manufacturer (OEM) that were discarded as waste with a contract to recycle spent cartridges and purchase remanufactured cartridges.

In the baseline data, the Agency would record the total number of new cartridges purchased and the total cost of those purchases, as well as the weight of a representative cartridge and the packaging. Calculate the amount of waste by multiplying the number of cartridges purchased times the weight of a cartridge. Hopefully, the corrugated cardboard packaging has been recycled. Then, calculate the cost of waste management based on the cost of staff labor to collect the waste and DOS collection and disposal costs of $151 per ton (assuming your waste is collected by DOS).

Now, calculate the number of remanufactured cartridges purchased, and multiply that amount times the weight of a representative cartridge and its packaging. Through this process you can calculate the approximate amount of waste you prevented.

Compare the total cost to purchase the new cartridges to the cost of purchasing remanufactured cartridges. That difference constitutes your cost savings. The example below compares costs and savings for one City operation.

The Department of Sanitation's Bureau of Waste Prevention, Reuse and Recycling recycles spent toner cartridges through Laser Save, a New Jersey vendor. Since the office is small, the waste disposal associated with this activity is only 30 pounds. However, DOS documented their cost savings over one year.

Product	Vendor	Unit	Quantity	Unit Price
OEM Lexmark Toner Cartridge 13802150	Staples	1 cartridge	15	$161.25
Remanufactured Lexmark toner cartridge	Laser Save	1 cartridge	15	$111.00
Savings per Cartridge				$50.25
Annual Savings				$753.75

You also will want to include a brief narrative in your report. You might note instances in which you have reduced or eliminated quantities of an individual product within a broad category due to a waste prevention initiative. In the example above, the Lexmark cartridges were discarded as solid waste; the remanufactured cartridges are collected by the vendor and remanufactured. Such waste prevention might not be apparent if you merely reported the numbers. You also may include a discussion of the performance of each environmentally preferable product, based on user comments and measurable impacts (both positive and negative) on waste disposed, recycled content, recyclability, labor, utility use, and toxicity.

Market conditions, reorganization or changes in City government, and/or new programs or program eliminations within your Agency can result in confusing year-to-year changes. You may want to document circumstances like these to explain unusual differences in purchasing trends from year to year.

9.4 Vendor Reports

To make vendor reports a viable source of information on purchases of environmentally preferable products, consider including detailed, specific reporting requirements in both your Invitation to Bid and the resulting

purchasing agreements. Consult Agency legal counsel to develop appropriate reporting language for bids, contracts, and agreements.
Once Agency reporting requirements are established, incorporate them into new contracts and agreements as they occur. You may want to design a report format for each contract or request that the reported data be submitted on disk in a format consistent with your internal tracking system. Both current and potential vendors may be willing to support Agency reporting requirements.

A process to verify information submitted by vendors can be included in standard terms and conditions, to ensure access to vendor files and records for auditing purposes.

Sample Reporting Requirements Language:

The vendor shall report the subtotal dollar and unit volume of the environmentally preferable [insert item] supplied to this Agency as well as the total dollar and unit volume of [insert item] sold to the City of New York under this contract. The reports shall show the name of the firm and the contract number, and be signed by the vendor, indicating that the vendor certifies the accuracy of all information.

The vendor shall submit reports to [specify whom] at [include address] within 30 days of the end of each year. Failure to provide complete, accurate, and timely reports may result in the City of New York withholding payment until such time as the vendor has remedied the failure.

These clauses allow you to be as explicit as you want to be. In some cases you will need information according to product category; in other cases you may want data about a specific item.

Section 9 Monitoring Your Progress

Determining EPP Program Success

Tracking and monitoring EPP program performance provides data that can be used to support future initiatives and to improve performance.

Completed		Task
☐	1.	Consider establishing an Agency-wide or operation-specific mechanism to record and track purchases of specific goods and services, beyond just total dollars spent in general categories.
☐	2.	Have you established baseline data for current Agency purchases?
☐	3.	Have you contacted vendors to obtain data regarding the environmental performance of their products or services?
☐	4.	Have you created a database to track EPP program performance? See the back of this checklist for suggested information fields.
☐	5.	Can your Agency track the purchase of specific environmentally preferable products and services?
☐	6.	Can your Agency document progress in EPP over time?

Suggested Information Fields for Tracking Environmentally Preferable Purchases

Order number: The contract, agreement, P.O., or other order number you assign to the transaction.

Date: The date of the order.

Vendor: The name of the vendor from whom you order.

Buyer: The name of the person placing the order.

Item number: The commodity code, if any.

Item description: Purchase description or specification.

Environmentally preferable characteristic(s) of item: (if applicable) Reusable, remanufactured, reduced toxicity, reduced packaging.

Percentage of post-consumer recycled content: (if applicable)

Percentage of total recycled content: (if applicable)

Unit of measure: The unit in which you order the item, e.g., each, dozen. If the unit of measure is box, case, carton, ream, or other variable, designate the number of items in each unit.

Unit weight: The weight of the item, box, carton, ream, or other variable.

Packaging description: The material(s), units, and sizes of packaging.

Packaging weight: The weight of the packaging for the item, box, carton, ream, or other variable.

Quantity: The total amount you ordered in the past fiscal year.

Unit price: The price you pay for the product by unit.

Other costs: Costs for training, labor, utilities, etc., related to the use of this product.

Section 10 Resources

10.1 Staff Within Your Agency
10.2 State and Local Government Resources
10.3 Federal Government Resources
10.4 Other Resources

10.0 Resources

There are literally hundreds of written and web-based resources for environmentally preferable purchasing. Many offer lists of products, specification language, and user analyses. Don't reinvent the wheel. Take advantage of the hard work of Federal, state, and local government environmental and purchasing professionals. The following list will get you started.

10.1 Staff Within Your Agency

Remember that the Agency staff who use the products and equipment are one of your best resources. The people in your Agencies who actually work with the products you buy for them have a lot of practical experience and usually know exactly what they want. Staff who understand the goals of your environmentally preferable purchasing program are less likely to resist your efforts. They recycle at home, so they understand the concept of source separation of recyclable materials.

When they understand how products they buy and use support the markets for recyclable materials, they may be more receptive to trying recycled content products. When they learn how expensive waste management is and how those costs affect your Agency's programs, they will support your waste prevention efforts, too. Often staff have great ideas about waste prevention that they have been waiting to share.

Your Agency staff learns about waste preventing products and projects as well as recycled content products from contacts in their own fields and in other Agencies with similar operations. Encourage them to share these ideas with you and with other interested staff. An internal E-mail bulletin is one avenue for distributing information on new products or new ways to perform tasks. Be sure to recognize the contributions of those staff members who step forward to share ideas and results with you. When your Agency employees realize that they will be acknowledged for their use of waste preventing or recycled products, they may participate in your program more enthusiastically.

10.2 State and Local Government Resources

Alameda County Waste Management Authority
www.stopwaste.org

At this site, the user may download or order free publications from Alameda County, California, including the *Resourceful Purchasing Manual* and the *Sustainable Building Guidelines*.

California Integrated Waste Management Board
www.ciwmb.ca.gov

Includes a description of the state's Buy Recycled program and a database of recycled content products.

City of Santa Monica
www.ci.santa-monica.ca.us/environment/policy

Learn about Santa Monica's innovative Sustainable City program. This site includes the City's policies, program descriptions, environmental purchasing criteria for janitorial products, and their Integrated Pest Management system.

Commonwealth of Massachusetts
Environmentally Preferable Purchasing Program
www.magnet.state.ma.us/osd/enviro/enviro.htm
www.magnet.state.ma.us/osd/enviro/products.htm

Includes state contracts for environmental products, reports on state agency pilot projects with various recycled products, and a description of Massachusetts' efforts to increase the purchase of environmentally preferable products through training and outreach.

Janitorial Products Pollution Prevention Project
www.westp2net.org/Janitorial/jp4.htm

Information, fact sheets, product sample kits, purchasing specifications, and other outreach materials to advise users on the health, safety, and environmental consequences of their janitorial product choices.

King County, Washington
www.metrokc.gov/procure/green/

Resources from King County, Washington's Green Purchasing program include a policy statement, bid and contract specifications for recycled and waste preventing products and descriptions of staff experiences in using these products. Specifications, products and vendors for green construction projects, including paints, are available at **http://dnr.metrokc.gov/market/map/index.htm**.

Local Government Environmental Assistance Network
www.lgean.org/html/p2-6.cfm
A forum and clearinghouse of environmental information for local government, including purchasing practices that support pollution prevention.

State of Minnesota
Solid Waste Management Coordinating Board
www.moea.state.mn.us/lc/purchasing/index.cfm
Minnesota's EPP site includes advice on establishing environmental criteria and examples of model programs.

State of Minnesota
Solid Waste Management Coordinating Board
www.swmcb.org/EPPG/1_1.htm
The Environmentally Preferable Purchasing Guide is an easy-to-use reference tool for 30 "green" products, including less-toxic cleaners, refurbished furniture, and water-efficient bathroom fixtures, as well as sample specifications and contract language.

National Association of Counties
www.naco.org/programs/environ/purchase.cfm
Obtain the NACO EPP starter kit, which includes program implementation strategies, case studies, and a resource list.

National Association of State Purchasing Officials
www.naspo.org
Includes a searchable database of contract specifications for recovered content products.

New York CitySen$e Project
http://www.nycwasteless.com/citysense/index.htm
Learn how New York City Agencies successfully reduced waste and access City-specific environmentally preferable purchasing guidance through the *NYCitySen$e* program, sponsored by the Department of Sanitation, the Mayor's Office of Operations, and the New York State Energy Research and Development Authority.

New York State Energy Research and Development Authority (NYSERDA)
www.nyserda.org/ntisothr.html
Information on energy efficient and environmentally preferable products through the Data Sources Directory for Purchasing Officials.

Pacific Northwest Pollution Prevention Resource Center (PPRC)
http://www.pprc.org/pprc/pubs/topics/envpurch.html
Applicable to the entire United States, this site provides information that can assist in identifying "green" products, setting up an environmental purchasing program, general and specific resources that are available to purchasers, guides for locating green products, and examples of procurement programs.

Pennsylvania Resources Council Buyer's Guide to Recycled Products
http://www.prc.org/guide/prodindx.htm
Co-sponsored by the Pennsylvania Department of Environmental Protection, this site offers an easy-to-access list of recycled products and an alphabetical list of product manufacturers.

10.3 Federal Government Resources

Comprehensive Procurement Guideline
www.epa.gov/epaoswer/non-hw/procure
Recovered materials advisory notices for the recycled products designated by USEPA.

Defense Logistics Agency
www.dscr.dla.mil/catalogs/catalog.htm
Source for the *Environmentally Preferred Products* and *Energy Efficient Lighting* Catalogs which list those items (out of the more than 7 million catalogued in the Federal Logistics Information System) that have been evaluated and determined to be environmentally preferred over other, similar products. These environmentally preferable products have passed the rigid certifying requirements of either the Department of Energy (DOE), USEPA, or other certifying agencies.

ENERGY STAR®
http://www.epa.gov/nrgystar/purchasing
The ENERGY STAR® purchasing website offers product information and tools to enhance energy efficiency, including savings calculators and drop-in specifications for 21 energy efficient products.

Enviro$ense
http://es.epa.gov
A single repository for pollution prevention information including access to extensive solvent substitution data systems.

Government Services Administration (GSA)
www.fss.gsa.gov/environ
Learn about the Federal Supply Service's environmental programs and access the *Environmental Products Guide* to help you choose more environmentally preferable alternative products.

Joint Services Pollution Prevention Technical Library
http://enviro.nfesc.navy.mil/p2library
Access fact sheets, including cost/benefit analyses and user and vendor contact information about environmentally preferable products and services currently used successfully by the U.S. Armed Forces.

Office of the Federal Environmental Executive
www.ofee.gov
Information on the latest Federal government efforts to implement recycled content and environmentally preferable purchasing among federal agencies.

USEPA Environmentally Preferable Purchasing Program
www.epa.gov/opptintr/epp
EPA's Environmentally Preferable Purchasing site offers guidance, descriptions of pilot projects, success stories, and access to the latest program updates, including a searchable EPP Contracts and Standards database. It also features an EPP Promising Practices Guide, an on-line source for green purchasing tips, strategies, success stories, and the multimedia EPP training tool.

10.4 Other Resources

Buy Recycled Business Alliance
http://brba.nrc-recycle.org
Access to case studies, fact sheets, and a *Buy Recycled Guide*.

Green Order
http://greenorder.com
A directory of product manufacturers and distributors tailored to the needs of institutional purchasers, especially government buyers. Offers recycled content, energy efficient, biobased, and environmentally preferable products.

GreenSeal
www.greenseal.org
Non-profit organization that provides independent certification of the environmental attributes of various product categories. This website includes

search capability for their products database and allows access to the product standards used for certification.

Inform
www.informinc.org/wawgate.htm
Inform's publication, *Waste at Work: Prevention Strategies for the Bottom Line*, includes an extensive section on Purchasing for Waste Prevention.

National Electrical Manufacturers Association
www.nema.org/lamprecycle
The Lamp Section of NEMA represents virtually all manufacturers of mercury-containing lamps that sell these lamps in the U.S. This site has information on benefits, regulations, and contacts for recycling spent fluorescent lamps.

Northwest Product Stewardship Council
http://www.govlink.org/nwpsc
Access the *Guide to Environmentally Preferable Computer Purchasing* to learn more about environmentally preferable products and additional resources for model criteria and contracts.

Office Furniture Recycler's Forum
www.ofdanet.org
This is the trade association for the office furniture recycling, refurbishing, and remanufacturing industry and a resource for information on furniture exchange opportunities, and on the purchase of remanufactured name brand office furniture.

Recycling Data Management Corp.
www.RecyclingMarkets.net
Subscription access to *The Official Recycled Products Guide,* listing more than 650 manufacturers and distributors marketing more than 4,000 recycled products in 700 categories.

Section 11 Appendices

Appendix 1: USEPA Comprehensive Procurement Guidelines for Recovered Material Content Requirements
Appendix 2: Reading a Material Safety Data Sheet (MSDS)
Appendix 3: Fluorescent Lamp Recycling Service Providers
Appendix 4: Sample Contract Specifications from the Commonwealth of Massachusetts
Appendix 5: Model Procurement Policy for Waste Preventing and Recycled Products

11.0 Appendices

Appendix 1: USEPA Comprehensive Procurement Guidelines

Recommended Recovered Material Content Requirements

Product	Recovered Material Content
PAPER PRODUCTS	
Printing and writing papers	
Reprographic	30% post-consumer; 30% total
Offset	30% post-consumer; 30% total
Tablet	30% post-consumer; 30% total
Forms bond	30% post-consumer; 30% total
Envelope	
Wove	30% post-consumer; 30% total
Kraft white & colored including manila	10-20% post-consumer; 10-20% total
Kraft, unbleached	10% post-consumer; 10% total
Cotton fiber	30% post-consumer; 30% total
Text and cover	30% post-consumer; 30% total
Check safety	10% post-consumer; 10% total
Carbonless forms	30% post-consumer; 30% total
File folders, manila or colored	30% post-consumer; 30% total
Index and card stock	20% post-consumer; 50% total
Newsprint	20-85% post-consumer; 20-100% total
Commercial sanitary tissue	
Bathroom tissue	20-60% post-consumer; 20-100% total
Paper towels	40-60% post-consumer; 40-100% total
Paper napkins	30-60% post-consumer; 30-100% total
Facial tissue	10-15% post-consumer; 10-100% total
Industrial wipers	40% post-consumer; 40-100% total
Paperboard and packaging	
Corrugated containers	25-50% post-consumer; 25-50% total
Solid fiber boxes	40% post-consumer; 40% total
Folding cartons	40-80% post-consumer; 100% total
Industrial paperboard	45-100% post-consumer; 100% total
Padded mailers	5-15% post-consumer; 5-15% total
Brown papers	5-20% post-consumer; 5-40% total
Miscellaneous	
Tray liners	50-75% post-consumer; 100% total
NON-PAPER OFFICE PRODUCTS	
Recycling containers and waste receptacles	
Plastic	20-100% post-consumer
Steel†	16 or 67% post-consumer; 25-30 or 100% total

† Steel from Basic Oxygen Furnace contains 25-30% recovered content, of which 16% is post-consumer; steel from Electric Arc Furnace contains 100% recovered steel, of which 67% is post-consumer.

USEPA CPG

Product	Recovered Material Content
Recycling containers and waste receptacles (continued)	
Paper	
Corrugated	25-50% post-consumer; 25-50% total
Solid fiber	40% post-consumer
Industrial paperboard	40-80% post-consumer; 100% total
Plastic desktop accessories	
desk organizers, sorters & trays, memo, note and pencil holders	25-80% post-consumer
Binders	
Plastic covered	25-50%
Paper covered	75-100% post-consumer; 90-100% total
Pressboard	20% post-consumer; 50% total
Solid plastic	
HDPE	90% post-consumer; 90% total
PE	30-50% post-consumer; 30-50% total
PET	100% post-consumer; 100% total
Miscellaneous plastics	80% post-consumer; 80% total
Trash bags (plastic)	10-100% post-consumer
Toner cartridges	Return used toner cartridges for remanufacturing, and reuse and purchase remanufactured or recycled-content replacement cartridges.
Printer ribbons	Purchase reinked or reloaded printer ribbons or printer ribbon reinking or reloading services.
Plastic envelopes	25% post-consumer; 25-35% total
Plastic clipboards	
HDPE	90% post-consumer; 90% total
PS	50% post-consumer; 50% total
Miscellaneous plastics	15% post-consumer; 15-80% total
Plastic file folders	
HDPE	90% post-consumer; 90% total
Plastic clip portfolios	
HDPE	90% post-consumer; 90% total
Plastic presentation folders	
HDPE	90% post-consumer; 90% total

MISCELLANEOUS PRODUCTS

Awards and plaques	
Glass	75-100% post-consumer; 100% total
Wood	100% total
Paper	40-100% post-consumer
Plastic and plastic/wood composites	50-100% post-consumer; 95-100% total
Industrial drums	
Steel†	16% post-consumer; 25-30% total
Plastic (HDPE)	30-100% post-consumer
Fiber (paper)	100% post-consumer

† Steel from Basic Oxygen Furnace contains 25-30% recovered content, of which 16% is post-consumer; steel from Electric Arc Furnace contains 100% recovered steel, of which 67% is post-consumer.

USEPA CPG

Product	Recovered Material Content
Mats	
Rubber	75-100% post-consumer; 85-100% total
Plastic	10-100% post-consumer; 100% total
Rubber/plastic composite	100% post-consumer
Pallets	
Wood	95-100% post-consumer
Plastic	100% post-consumer
Thermoformed	25-50% post-consumer
Paperboard	50% post-consumer
Signage	
Plastic	80-100% post-consumer
Aluminum	25% post-consumer
Plastic posts/supports	80-100% post-consumer
Steel posts/supports†	16 or 67% post-consumer; 25-30 or 100% total
Sorbents	
Paper	90-100% post-consumer; 100% total
Textiles	95-100% post-consumer
Plastics	25-100% total
Wood	100% total
Other organics/multi-materials	100% total
Manual grade strapping	
Polyester	50-85% post-consumer
Polypropylene	10-40% total
Steel†	16 or 67% post-consumer; 25-30 or 100% total

LANDSCAPING PRODUCTS

Hydraulic mulch	
Paper	100% post-consumer
Wood/paper	100% total
Compost from yard trimmings and/or food waste	Purchase or use compost for landscaping, mulch, erosion control, and soil reclamation. Where adequate volume and space, implement a composting program for these materials.
Garden hose	
Rubber and/or plastic	60-70% post-consumer
Soaker hose	
Rubber and/or plastic	60-65% post-consumer
Lawn and garden edging	
Rubber and/or plastic	30-100% post-consumer; 30-100% total
Landscaping timber and posts	
HDPE	25-100% post-consumer; 75-100% total
Mixed plastic/sawdust	50% post-consumer; 100% total
HDPE/Fiberglass	75% post-consumer; 95% total
Other mixed resins	50-100% post-consumer; 95-100% total

† Steel from Basic Oxygen Furnace contains 25-30% recovered content, of which 16% is post-consumer; steel from Electric Arc Furnace contains 100% recovered steel, of which 67% is post-consumer.

Product	Recovered Material Content
PARK & RECREATION PRODUCTS	
Park benches and picnic tables	
Plastic*	90-100% post-consumer; 100% total
Plastic composites	50-100% post-consumer; 100% total
Aluminum	25% post-consumer
Concrete	15-40% total
Steel†	16 or 67% post-consumer; 25-30 or 100% total
Plastic fencing (to control snow or drifting sand, or as a safety barrier)	60-100% post-consumer; 90-100% total
Playground equipment	
Plastic	90-100% post-consumer; 100% total
Plastic composites	50-75% post-consumer; 95-100% total
Steel†	16 or 67% post-consumer; 25-30 or 100% total
Aluminum	25% post-consumer; 25% total
Playground surfaces	
Plastic or rubber	90-100% post-consumer
Running tracks	
Plastic or rubber	90-100% post-consumer
VEHICULAR PRODUCTS	
Re-refined oil	25% or more re-refined base stock for lubricating oils, hydraulic fluids, and gear oils.
Retread tires	Purchase retread tires or tire retreading services for vehicular (highway) tires.
Engine coolants	Reclaim coolants on site or contract for off-site services. Buy reclaimed coolant through direct purchase and request that commercial services use reclaimed coolant.
TRANSPORTATION PRODUCTS	
Traffic cones	
Plastic (PVC and LDPE)	50-100%
Crumb rubber	50-100%
Traffic barricades (Types I & II only)	
Plastic (HDPE, LDPE, PET)	80-100% post-consumer; 100% total
Steel†	16 or 67% post-consumer; 25-30 or 100% total
Fiberglass	100%
Parking stops	
Plastic and/or rubber	100%
Concrete containing coal fly ash	generally 20-30%
Concrete w/ground granulated blast furnace slag	25-70%
Traffic control devices	
Channelizers	
Plastic	25-95% post-consumer
Rubber (base only)	100% post-consumer

* Includes both single and mixed plastic resins. Products made with recovered plastic also may contain other recovered materials such as sawdust, wood, or fiberglass.

† Steel from Basic Oxygen Furnace contains 25-30% recovered content, of which 16% is post-consumer; steel from Electric Arc Furnace contains 100% recovered steel, of which 67% is post-consumer.

Product	Recovered Material Content
Traffic control devices, continued	
Delineators	
Plastic	25-90% post-consumer
Rubber (base only)	100% post-consumer
Steel† (base only)	16 or 67% post-consumer; 25-30 or 100% total
Flexible delineators	25-85% post-consumer

Product	Recycled Material	Recovered Material Content
CONSTRUCTION PRODUCTS		
Building insulation products		
Structural fiberboard	recovered material	100% post-consumer; 80-100% total
Laminated paperboard	post-consumer paper	100% total
Rock wool	slag	75% total
Fiberglass	glass cullet	20-25% total
Cellulose (loose-fill/spray on)	post-consumer paper	75% post-consumer; 75% total
Perlite composite board	post-consumer paper	23% post-consumer; 23% total
Plastic rigid foam	recovered material	9% total
Phenolic rigid foam	recovered material	5% total
Foam-in-place	recovered material	5% total
Glass fiber reinforced	recovered material	6% total
Floor tiles	rubber	90-100% post-consumer
	plastic	90-100% total
Patio blocks	rubber/rubber blends	90-100% post-consumer
	plastic/plastic blends	90-100% total
Polyester carpet	PET resin	25-100% post-consumer; 25-100% total
Carpet cushion		
Bonded polyurethane	old carpet cushion	15-50% post-consumer; 15-50% total
Jute	burlap	40% post-consumer; 40% total
Synthetic fibers	carpet fabrication scrap	100% total
Rubber	tire rubber	60-90% post-consumer; 60-90% total
Shower and restroom partitions	plastic	20-100% post-consumer; 20-100% total
	steel†	16 or 67% post-consumer, 25-30 or 100% total
Latex paint		
Consolidated (graffiti cover)	recovered material	100% postconsumer; 100% total
Reprocessed (interior/exterior)		
White, off-white, pastel	recovered material	20% post-consumer; 20% total
Grey, brown, dark colors	recovered material	50-99% post-consumer; 50-99% total
Railroad grade crossing surface		
Concrete	coal fly ash	15-20% total
Rubber	tire rubber	85-95% total
Steel	steel†	16 or 67% post-consumer; 25-30 or 100% total

† Steel from Basic Oxygen Furnace contains 25-30% recovered content, of which 16% is post-consumer; steel from Electric Arc Furnace contains 100% recovered steel, of which 67% is post-consumer.

Appendix 2: Reading a Material Safety Data Sheet (MSDS)*

MSDSs come in different formats and may not always be organized in the same way or have the same number of sections. However, each MSDS provides basic information on the hazardous ingredients, health effects, legal and recommended exposure limits, physical properties, and control methods for the product.

Section I—Material Identification or Product Identification

This section provides the chemical name as well as the trade, brand, or common name of the product. It also provides the name, address, and emergency telephone number of the manufacturer. The trade name usually appears on the product label, but it does not tell you what chemicals are in the product.

Section II—Hazardous Ingredients/Identity Information

You will find the names of the product's **hazardous ingredients** and their percentage of the total product weight in Section II. The MSDS must list the chemical name of all hazardous ingredients that make up more than 1% of the mixture (or 0.1% for cancer-causing substances). The MSDS may provide the percentage concentration of each substance in a mixture; however, this is not always required by state law. Chemicals are often recognized by both a generic name, describing the family or group of chemicals, and a specific chemical name. For example, toluene diisocyanate is a member of the isocyanate family. Use the specific chemical name to access information on the health effects and how to protect yourself.

Section II also provides information on **exposure limits,** stated as TLV (Threshold Limit Value) or PEL (Permissible Exposure Limit). The TLV is the maximum average concentration over an 8-hour workday, as recommended by the American Conference of Governmental Industrial Hygienists (ACGIH). The TLV-STEL, or short-term exposure limit, expresses the maximum exposure for a period of 15 minutes. Only four such 15-minute periods are allowed per day, with at least 60 minutes between exposure periods. Total exposure during these four 15-minute periods should not exceed the daily TLV. TLV-C refers to the absolute ceiling for exposure.

*Adapted from the American Lung Association website at **www.lungusa.org/occupational/ read.html**, 2000.

Permissible Exposure Limit (PEL) is the exposure limit over an 8-hour workday set by the Occupational Safety and Health Administration (OSHA). The PEL is enforceable by OSHA.

The notation Skin or S sometimes accompanies TLV or PEL, indicating that the substance may be absorbed through the skin or the mucous membranes. This additional exposure should be added to the total.

The **CAS Number** is the number assigned to each chemical by the Chemical Abstract Service. While different chemicals may have the same name, each has its own CAS number, which can be used to look up information.

The manufacturer may be able to withhold ingredient information from the MSDS if any ingredients are considered **Proprietary Information** or trade secrets. Under most Right-to-Know laws, the manufacturer must provide even proprietary ingredient information to health care professionals and/or workers if they have a need to know the information, or in a medical emergency.

Section III—Physical/Chemical Characteristics

This section describes the chemical's characteristics, including the appearance and odor, as well as physical properties: whether it is liquid, solid, or gas at room temperature, how much vapor it forms, whether that vapor rises or settles, and whether the chemical dissolves in water.

Appearance and odor: This information may help to identify a material.

Boiling point: The lower the boiling point, the quicker the chemical evaporates and the easier it is to inhale. Chemicals with boiling points below 100°C (or 212°F) require special caution.

Vapor pressure: Measured in millimeters of mercury, a high vapor pressure indicates that a liquid is volatile and will evaporate easily. Air concentrations can build up quickly, even though the substance is in liquid form. Liquids with high vapor pressures require good ventilation, as they may be especially hazardous if staff is working with them in an enclosed area.

Vapor density: Air has been assigned a density of 1. If the vapor density of the chemical is less than 1, it will tend to rise in air. If the vapor density

is greater than 1, it will fall and concentrate along the floor, in the bottom of tanks, or in confined spaces, where it may present fire or health hazards.

Specific gravity: If the specific gravity is greater than 1, the substance will sink in water; if less than 1, it will float on water.

Evaporation rate: This is the rate at which a substance evaporates, as compared to a known substance: either ether, which evaporates quickly, or butyl acetate, which evaporates slowly. If the substance has an evaporation rate greater than 1, it evaporates faster than the comparison substance. Chemicals that evaporate quickly can release hazardous vapors into the air.

Solubility in water: The quantity of a substance that will dissolve in water at room temperature. This is useful for developing spill cleanup procedures and understanding potential health impacts.

Percent volatile: The percent of a liquid or a solid (by volume) that will evaporate at an ambient temperature of 70°F.

Section IV—Fire and Explosion Hazard

This section should provide information on the fire hazards of a product and special precautions necessary to extinguish a fire involving the product.

Flash point: This is the lowest temperature at which the material will burst into flames when exposed to an ignition source. A flash point near or below room temperature indicates that the material is especially dangerous because explosive vapors can form without additional heat. Liquids with flash points below 100°F are considered flammable, and liquids with flash points between 100° and 200°F are considered to be combustible. Flammable and combustible liquids require special handling and storage precautions.

Explosive limits: The lowest and highest concentrations of vapor or gas in the air (by percent volume) that will ignite when exposed to a spark or flame.

Extinguishing media: What to use to put out a fire: water, fog, foam, alcohol foam, carbon dioxide, or dry chemicals.

Special firefighting procedures and unusual fire and explosion hazards: Fires involving some chemicals, such as corrosives, must not be extinguished with water. This section will alert you to any special hazards.

Section V—Reactivity Data

If stored or handled improperly, some chemicals can react with other chemicals and release toxic gases or create a pressure buildup in a container. This section describes the reaction of a product under particular circumstances.

Stability: Indicates whether the substance may decompose over time. This information is used to determine where and how the product should be stored.

Incompatibility/Materials to avoid: Indicates chemicals that should not come into contact with this product.

Hazardous decomposition products: Hazardous materials that may be released as a result of product aging.

Hazardous polymerization: Polymerization is a chemical reaction in which small molecules combine to form larger ones. If this reaction produces an uncontrolled release of energy, the polymerization is considered hazardous. This section should include storage procedures and the shelf life of the product or its chemical constituents.

Section VI—Health Hazard Data

This section describes the health hazards of the product and the ways that exposure may occur. The signs and symptoms of acute (short-term) and chronic (long-term) effects of exposure should be included, although acute exposure data are usually more detailed than chronic data. This section should include information on target organs (e.g., liver, kidneys, or central nervous system) as well as medical conditions generally aggravated by exposure.

Routes of entry (inhalation, skin contact, swallowing) and emergency and first aid procedures must also be included.

LD50 refers to the lethal dose concentration that kills 50 percent of the test animals in experiments. The lower the LD50, the more toxic the substance.

Section VII—Precautions for Safe Handling and Use (Spill or Leak Procedures)

This section contains information on proper equipment to use and what precautions to follow if a spill or leak occurs. It also should describe safe waste disposal methods and precautions to take in handling and storing the product.

Section VIII—Protective/Control Measures

The MSDS must list measures that can reduce or eliminate hazards associated with the product, including ventilation and other engineering controls, safe work practices, and appropriate personal protective equipment to safely handle the product.

Respirators, eye protection, gloves, boots, and other protective equipment should be specified by type and material.

Section IX—Special Precautions

Miscellaneous information about storage, handling, labeling, and other precautions not covered elsewhere are included in this section.

Appendix 3: Fluorescent Lamp Recycling Service Providers

Company Name and Contact Information	Area Serviced	Products Serviced	Cost per Unit (per foot, lamp, ballast, weight, or volume)	Minimum Quantities	Collection	Shipping & Packaging Requirements	Tracking & Certification Provided	How are Lamps & Ballasts Processed?
ALR—American Lamp Recycling *Stacy Wilson* 22 Stage Door Road Fishkill, NY 12524 (800) 315-6262 Fax: (203) 757-4933	All five boroughs of NYC	All types	**Tubular fluorescents:** 7.5 cents / linear ft. **Compact bulbs:** 98 cents-$1.40 / bulb **Incandescent bulbs:** 25 cents / bulb **High-intensity discharge bulbs:** 85 cents / bulb **Ballasts:** 59 cents / pound	None	Vendor will provide pickup service for an additional charge.	• Lamps can be put in original packaging or vendor can supply boxes or drums. • Ballasts must be packaged in a DOT-approved 55-gallon drum.	• Land Disposal Restriction Form • Certificate of Recycling • Lamps transported on bill of lading destined for recycling.	• Metal and glass are separated and sold for use in recycled products. • The mercury-containing phosphate powder is sent to a retort company for recovery and reuse.
Mercury Waste Solutions *Aaron Mars* *Storage Facility:* 26 Railroad Ave. Albany, NY 12205 (800) 741-3343 Fax: (518) 664-1579 Email: Amars@mwsi.com *Recycling Facility:* 21211 Durand Ave. Union Grove, WI 53182 Fax: (262) 878-2699	All five boroughs of NYC	All types	**Tubular fluorescents:** 7.5 cents / linear ft. **Ballasts:** 48 cents / pound **Non-PCB**	None—but large quantities are more cost effective.	No pickup; however, they can arrange transportation.	Packaging guidelines are provided.	• Land Disposal Restriction Form • Certificate of Recycling • Lamps transported on bill of lading destined for recycling.	• Materials are sent to their Wisconsin recycling facility. • The glass and aluminum ends caps are recycled. • The mercury-containing phosphate powder is rendered non-hazardous and discarded in a solid waste landfill.

Company Name and Contact Information	Area Serviced	Products Serviced	Cost per Unit (per foot, lamp, ballast, weight, or volume)	Minimum Quantities	Collection	Shipping & Packaging Requirements	Tracking & Certification Provided	How are Lamps & Ballasts Processed?
Northeast Lamp Recycling *Ray Graczyk* 250 Main Street East Windsor, CT 06088 (860) 292-1992 Fax: (860) 292-1114 Email: NLRRWG@aol.com	All five boroughs of NYC	All types	Cost based on volume. **Tubular fluorescents:** 8-10 cents / linear ft. for 500 lamps or less	None	They are a fully licensed hazardous waste transporter.	Lamps can be put in original packaging or supply containers can be provided.	• Land Disposal Restriction Form • Certificate of Recycling • Lamps transported on bill of lading destined for recycling.	• Metal and glass are separated and reprocessed for use in new recycled products. • The mercury-containing phosphate powder is sent to a retort company for recovery and reuse.
Full Circle Ballast Recyclers *Bill Sanchez* 509 Manida Street Bronx, NY 10474 (718) 328-4667 Fax: (718) 328-4462 **www.fcballast.com**	All five boroughs of NYC	All types	**Tubular fluorescents:** 7-10 cents / linear ft. **Compact bulbs:** 50-80cents / bulb **PCB Ballasts:** 45-55 cents / pound **Non-PCB Ballasts:** 25-35 cents / pound	None	Provide pickup service.	Lamps can be put in original packaging or supply containers can be provided.	• Land Disposal Restriction Form • Certificate of Recycling • Lamps transported on bill of lading destined for recycling.	• Metal and glass are separated and sold for use in recycled products. • The phosphate powder is sent to a retort company for recovery and reuse. • Ballasts, capacitor, and potting material are sent for incineration, and all metals are recycled for reuse.

Company Name and Contact Information	Area Serviced	Products Serviced	Cost per Unit (per foot, lamp, ballast, weight, or volume)	Minimum Quantities	Collection	Shipping & Packaging Requirements	Tracking & Certification Provided	How are Lamps & Ballasts Processed?
Advanced Environmental Recycling, Corp. *Bonnie Swavely* 2591 Mitchell Ave. Allentown, PA 18103 (800) 554-AERC Fax: (610) 797-7696 **www.aerc-mti.com**	All five boroughs of NYC	All types	Cost based on project specifics such as location, volume, etc. Call for cost estimates.	None	Provide pickup and drop-off service.	Lamps can be put in original packaging or supply containers can be provided.	• Land Disposal Restriction Form • Certificate of Recycling • Lamps transported on bill of lading destined for recycling. Recycling facilities located in PA, FL, CA.	• Metal and glass are separated and sold for use in recycled products. • The phosphate powder is retorted on site.
USA Lamp & Ballast Recyclers *Roger Dunn* 5366 Este Ave. Cincinnati, OH 45232 (800) 778-6645 Fax: (513) 641-4156 **www.usalamp.com/....**	All five boroughs of NYC	All types	Cost is dependent on volume.	None	No pickup; however, they can arrange transportation	Lamps can be put in original packaging or supply containers can be provided	• Land Disposal Restriction Form • Certificate of Recycling • Lamps transported on bill of lading destined for recycling.	• Metal and glass are separated and sold for use in recycled products. • The phosphate powder is sent to a retort company for recovery and reuse.

Appendix 4: Sample Contract Specifications from the Commonwealth of Massachusetts

PLEASE PAY PARTICULAR ATTENTION TO THE FOLLOWING CONTRACT SECTIONS:

"ENERGY SAVING EQUIPMENT"
"OTHER ENVIRONMENTAL FEATURES"
"TRAINING AND TECHNICAL SUPPORT SERVICES"

OSD Update **The Operational Services Division**
One Ashburton Place, Room 1017
Boston, MA 02108

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To: **All State Departments and Authorities, Cities, Towns, Chief Financial Officers, MMARS Liaisons, and Procurement Officers**

From: **Elba Mendez, Deputy Procurement Team Leader; Paul Trainor, Procurement Team Leader; and The Office Equipment, Supplies, and Services Procurement Team**

Date: **September 17, 1998**

Subj: **PHOTOCOPIER EQUIPMENT, SERVICE/MAINTENANCE & SUPPLIES - Statewide Contract #OFF02 Contract Term: June 1O, 1998 to June 1O, 2003**
 # OFF02 - Photocopy Equipment, and Supplies Purchases
 # ST9L461 - Maintenance/Service Plan
 # ST9L261 - Term Lease & Rental of Equipment
Tax-Exempt Lease Purchase (TELP) - Object Code L06

The Operational Services Division and the Photocopier Procurement Management Team are pleased to announce the award of the new **Statewide Contract for Photocopier Equipment, Supplies, and Services.** For the first time, the Commonwealth has a comprehensive contract, which includes: 1) analog, digital, and color photocopiers; 2) specialty items such as engineering and remanufactured equipment; 3) various acquisition options, i.e., outright purchase, term lease, rental, and tax-exempt lease purchase; and 4) service/maintenance for over nine brands of equipment. The Statewide Photocopier Contract offers these features and more, all at great prices.

This OSD Update will serve as the official handbook. It includes all the contract details listed by topics such as **Term Lease Versus Ownership,**

Financial Analysis, Customer Guide — Determining Life-cycle Costs, Copying Applications Checklist, and much more. Use the Table of Contents on the following page to make your search for information easier.

This contract will be constantly changing in order to stay abreast of the new evolving digital technology. Customers can obtain up-to-date information through Comm-PASS and/or our OSD homepage. **For extra copies of this OSD Update, Contractor Cost Sheets, and Forms, visit our Internet site at www.comm-pass.com.** Once there, click on "Closed Solicitation," then "Office Equipment, Supplies, and Services", then "OFF02". On this page is a section entitled "Related Files". Or use the Comm-PASS search engine and search for the contract reference number "OFF02". All contract information will be listed there and forms will be available to download. If you require assistance in downloading documents or navigating through CommPass, please contact the Comm-Pass Help Desk at 1-888/627-8283.

A standard customer survey and a Comments/Complaint Form has been developed for this contract. These forms are available on the Comm-PASS website and listed as a separate file with this Handbook.

EQUIPMENT PERFORMANCE: In the event that any equipment is inoperative due to equipment failure, through no fault or negligence of the eligible entity, and the total number of hours of downtime exceeds ten percent (10%) of the total productive use of time for three consecutive calendar months, the entity can require a Contractor to replace the equipment or terminate the order with no termination or removal charges being assessed to the entity. The Contractor must be notified in writing of the deficiency. After such notice, the Contractor **is required** to remove and replace the defective product(s) within ten (10) business days, at no cost to the Commonwealth.

The effectiveness level for any equipment is computed by the formula: one (1) minus the total number of hours downtime divided by the total productive time in the month. Total productive time shall be computed by multiplying 8 hours per day by the number of working days in the month (weekends, Federal, and State Holidays excluded). Contractors are required to provide a complete repair history upon request.

The Contractor shall grant a credit to the entity for any equipment which fails to perform at an effectiveness level of ninety percent (90%) during any month or out of service for more than one consecutive day.

This contract does not allow for equipment failure to be attributed to the use of recycled paper, generic supplies available on this contract, and/or recycled/remanufactured supplies, as long as those products are available on this statewide contract. The contract has procedures to be taken by the Contractor and the Commonwealth to resolve any suspected failures caused by recycled paper, generic supplies, and/or recycled/remanufactured supplies.

Contractors are required to respond in good faith to a notice of deficiency. Otherwise, customers should use the Comment/Complaint form to file a formal complaint to the PMT for corrective action.

REPLACEMENT OF UNSATISFACTORY EQUIPMENT: Payment credits for replacement equipment shall be not less than the payments already made from the date of installation of the original equipment, regardless of whether the replacement is made at the request of the entity or for the convenience of the Contractor.

ENERGY SAVING EQUIPMENT: All equipment is ENERGY STAR® compliant including such features as the ability to power-down when not in use to conserve electrical energy and default to duplex in medium/ high speed models to save paper. Equipment 20 copies per minute or greater **is required** to be preset with the duplex mode as default (optional on equipment with a range of 19 CPM or less) and with the ENERGY STAR® low-power feature activated or enabled. See Training Services below for more information.

OTHER ENVIRONMENTAL FEATURES: Several Contractors have existing return/recycling supply programs. Other Contractors are working with OSD to establish a return/recycling program. Eligible entities are strongly encouraged to take recycling programs into consideration when selecting a Contractor. OSD strongly encourages Eligible Entities to take advantage of the recycling programs and should inquire with Contractors for information about their return/recycling program and how it works.

Equipment manufacturers are being encouraged to “design for recyclability” in new equipment models (allowing for easy disassembly of used equipment for recycling).

Warranties and service contracts cannot fault the use of recycled paper and/or remanufactured toner cartridges or other supplies for equipment failures. Use of packaging materials with recycled content is encouraged.

Contractors are encouraged to develop a fact sheet and/or brochure to leave with customers concerning environmental features and benefits.

TRAINING & TECHNICAL SUPPORT SERVICES: Within two (2) days after the delivery and installation contractors and/or authorized distributor are required to provide sufficient instructions to ensure that the equipment is operated and maintained so as to perform to the full extent of its performance capabilities. Contractors are required to include information on: 1) all environmental features such as energy efficiency modes and their operation, double-sided copying operations, and double-sided default programming, 2) any other environmental and economic benefits of all features, and 3) provide unlimited personnel training upon request along with as many copies of instructional manuals as may be needed.

PROMOTIONS/INCENTIVES: All promotions/incentives offered must be approved by OSD and/or the PMT. Contractors offering any promotions/incentives must show proof of approval. Approved promotions/incentives must be applied uniformly to all transactions of any of the Commonwealth eligible entities using this contract.

AUTHORIZED DISTRIBUTORS: Several Prime Contractors have authorized distributors that have been approved to represent them on this contract. Prime Contractors are fully responsible for meeting all of the terms of the contract and have full responsibility for any authorized distributor performance. Authorized distributor information is available on each Contractor's Profile of this Handbook. Orders, payments, and invoicing for all transactions must be made directly to and from the Prime Contractors.

WARRANTY: The minimum warranty on all equipment is 90 days. See each Contractor's Profile for extended warranties beyond 90 days. The **warranty period** shall be governed by the Commonwealth's definition of **"acceptance date."** This confirmation of the acceptance of the equipment shall be made by the Department's execution of the Confirmation Form indicating the date of acceptance, a copy of which shall be faxed to the Contractor.

PROMPT PAYMENT DISCOUNTS: See Contractor Profile for Contractors offering prompt payment discounts on outright purchases of equipment and supplies.

PAYMENTS/BILLING/INVOICING: Payments and invoicing for all transactions must be made directly to and from the Prime Contractors. For further payment and invoicing information see Contractor Profiles.
Invoicing and billing options include:
1. Billing for Maintenance/Service is required to be done either monthly or quarterly, upon the customer's request.
2. Contractors are required to provide, upon request of the customer, consolidated billing. All equipment, supplies, and service billing **must** each have a separate line item within the invoice.
3. Invoices for purchases and software fees are not due and payable until successful completion of any applicable acceptance testing. Invoices for services are not due and payable until after services are rendered.

Appendix 5: Model Procurement Policy for Waste Preventing and Recycled Products

STATEMENT OF PURPOSE [Optional]

[New York City Department of _____] supports the conservation of natural resources and reduction of energy use and pollution through the development of a less wasteful materials use program;

[New York City Department of _____] recognizes the need to strengthen markets for materials collected in New York City's recycling collection program;

[New York City Department of _____] desires to maximize reduction of discarded materials;

[New York City Department of _____] encourages economic development through attracting and retaining recycled and waste preventing product manufacturers and distributors.

1.O STATEMENT OF POLICY

1. It is the policy of [New York City Department of _____] to purchase waste preventing products and/or recycled products containing the highest amount of post-consumer material practicable or, when post-consumer material is impracticable for a specific type of product, containing substantial amounts of recovered material. Such products must meet reasonable performance standards, be available at a reasonable price, and be available within a reasonable time.

1.2 All equipment bought, leased, or rented shall be compatible with the use of waste preventing and recycled products.

1.3 [New York City Department of _____] shall promote its use of waste preventing and recycled products whenever feasible.

2.0 DEFINITIONS

2.1 "Buyer" means anyone authorized to purchase on behalf of [New York City Department of _____].

2.2 "Contractor" means any person, group of persons, business, consultant, designing architect, association, partnership, corporation, supplier, vendor, or other entity that has a contract with [New York City Department of _____] or serves in a subcontracting capacity with an entity having a contract with [New York City Department of _____] for the provision of goods or services.

2.3 "Ownership Cost" means total ownership costs during a product's life cycle, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs, and expected lifetime, compared to other alternatives.

2.4 "Post-consumer Material" means a finished material which would normally be disposed of as a solid waste, having completed its life cycle as a consumer item, and does not include manufacturing or converting wastes.

2.5 "Pre-consumer Material" means material or by-products generated after manufacture of a product is completed but before the product reaches the end-use consumer. Pre-consumer material does not include mill broke and manufacturing trim or scrap that is generated at a manufacturing site and commonly reused on site in the same or another manufacturing process.

2.6 "Price Preference" means the percentage allowance for a recycled product that costs more than a comparable virgin product. In bid situations, it is the percentage above the lowest cost of a comparable virgin product allowed for a recycled product when both bidders are responsible and responsive.

2.7 "Purchasing Documents" means all documents used to solicit bids and purchase products, including but not limited to: invitations for bids, requests for proposals, requests for quotations, and purchase orders.

2.8 "Recovered Material" means fragments of products or finished products of a manufacturing process, that has converted a resource into a

commodity of real economic value, and includes pre-consumer and post-consumer material, but does not include excess resources of the manufacturing process.

2.9 "Recycled Content" means the percentage of recovered material, including pre-consumer and post-consumer materials, in a product.

2.10 "Recycled Content Standards" means the minimum or maximum level of recovered material and/or post-consumer material necessary for products to qualify as "recycled products," as established by [jurisdiction].

2.11 "Recycled Product" means a product that meets [New York City Department of _____]'s recycled content policy objectives for post-consumer, pre-consumer, and recovered material.

2.12 "Remanufactured Product" means any product diverted from the supply of discarded materials by refurbishing and marketing said product without substantial change to its original form.

2.13 "Reused Product" means any product designed to be used many times for the same or other purposes without additional processing except for specific requirements such as cleaning, painting, or minor repairs.

2.14 "Waste Preventing Product" means a product that results in a net reduction in the generation of waste compared to the previous or alternate version, and includes durable, reusable, and remanufactured products; products with no, or reduced, toxic constituents; and products marketed with no, or reduced, packaging.

3.0 POLICY IMPLEMENTATION

3.1 The [Commissioner or authorized representative] shall, in cooperation with [ACCO and Waste Prevention Coordinator] and any other relevant departments, develop administrative guidelines to implement this policy.

3.2 The [ACCO] shall ensure that purchasing documents, specifications, and contracting procedures do not discriminate against waste preventing or recycled products.

3.3 The [ACCO] shall establish recycled content standards and is

authorized to raise or lower them to meet the objectives of this policy. The decision to change any recycled content standard shall be substantiated in the annual report.

3.4 The [ACCO] is authorized to exempt product categories from this policy in cases when all products contain recycled content [such as metals], or when health or safety may be jeopardized [such as pharmaceuticals], or when multiple complex components or the nature of the product make certification of recycled content impracticable [such as automobiles, computers, and software]. The [Director of Purchasing] shall maintain a list of products exempted from this policy.

3.5 The [purchasing entity] is authorized to participate in, and encourage others to participate in, cooperative purchasing agreements.

4.0 PRECEDENCE

4.1 When conflicts occur in product selections, the following hierarchy shall be used:
1. Reduction in quantity, volume, weight, or toxicity;
2. Reusability;
3. Recycled content.

Buyers shall maximize this hierarchy whenever possible. Products shall also be evaluated for recyclability.

4.2 All [New York City Department of _____] Bureaus and operations may evaluate environmental benefits and ownership cost when evaluating prices to determine the lowest responsible bid.

5.0 REASONABLE PRICE

[For Agencies authorizing buyers to specify only recycled and waste preventing products in appropriate cases]:

5.1 Buyers shall buy recycled and waste preventing products whenever possible.

5.2 On a case-by-case basis, the [ACCO] is authorized to purchase recycled or waste preventing products at more than the lowest cost when the following conditions are met:

a. The price differential is no greater than [x percent or x dollars] over non-recycled or non-waste preventing products,

b. The bidder is responsive and responsible,

c. The [ACCO] determines in writing that the additional cost is in the best interests of [New York City Department of _____], and

d. No substantial budget impact would result.

6.0 APPLICATION

6.1 All [New York City Department of _____] Bureaus, operations, offices, vendors, and contractors shall comply with this policy.

7.0 REPORTS

7.1 The [ACCO or authorized representative] shall report to the Department of Citywide Administrative Services annually on both recycled and waste preventing purchases, annual dollar expenditures, percentage change from previous years, percentage of total purchasing budget, total savings or cost for using recycled or waste preventing purchases, and the number of product types bought in each category. The annual report shall also include identification and discussion of instances in which this policy has been waived or found impracticable, a discussion of other barriers to the procurement of recycled products, and any instances when recycled content standards or price preferences were adjusted.

[Adjust this list to fit Agency and City information needs and reporting capabilities.]

8.0 EFFECTIVE DATES

8.1 This policy shall take effect on [date].

8.2 The [Commissioner] shall issue implementation guidelines within one year following the effective date of this policy.

Section 12 Exercises

A. Who Wants to Save a Million?
(Exercise for Sections 1 and 2)

B. Obtaining Information from a Material Safety Data Sheet
(Exercise for Section 5)

C. Reviewing EPP Strategies
(Exercise for Sections 3 through 6)

D. Agency EPP Policy
(Exercise for Section 7)

E. Developing Bid Specifications for EPP
(Exercise for Section 8)

F. Challenges to Tracking EPP
(Exercise for Sections 9 and 10)

12.0 Exercises

Who Wants to Save A Million?

Exercise A for Sections 1-2

1. What is the largest waste stream produced by City Agencies?
   - Wood
   - Paper
   - Metal
   - Electronics

2. What is the current cost to collect, transport, and dispose of one ton of waste from a City Agency?
   - $25
   - $42.50
   - $110
   - $151

3. How many pounds of waste does one City employee generate in a year?
   - 300
   - 600
   - 1,200
   - 2,000

4. Who collects the waste from City Agencies?
   - The Department of Environmental Protection (DEP)
   - The Department of Sanitation
   - The Department of Environmental Conservation (DEC)
   - A private carting company

5. Name the City Agency that purchases most of the supplies and materials you use at work.
   - Mayor's Office of Contracts (MOC)
   - Financial Information Services (FISA)
   - DCAS Division of Municipal Supply Services (DMSS)
   - None of the above

6. Which materials are City Agencies *required* to recycle?
- White paper
- Mixed office paper
- Food & beverage containers (glass, metal, plastic)
- Bulk metals
- All of the above
- None of the above

7. Federal government agencies must purchase only the recycled version of certain items. According to the USEPA Comprehensive Procurement Guidelines, what items are NOT required to contain recycled material?
- Letterhead
- Looseleaf binders
- Plastic "in" box
- Carpet
- Motor oil
- None of the above

8. If a City Agency spends more than a certain amount per year on an EPA-designated product, and any of those funds are Federal appropriated funds, the Agency MUST purchase the item with recycled content. What is that dollar amount?
- $1,000,000
- $100,000
- $10,000
- $1,000

9. The requirement that City Agencies "purchase products manufactured with recycled materials whenever practicable" is found in
- Local Law 19
- Executive Order 13101
- DCAS Rules
- Mayoral Directive 96-2

10. Rules for purchasing goods and services for New York City Agencies are established and administered by
- DCAS Division of Municipal Supply Services
- Procurement Policy Board
- Mayor's Office of Contracts
- Mayor's Office of Operations

Obtaining Information from a Material Safety Data Sheet

Exercise B for Section 5

Use Appendix 2 in your manual, **Reading a Material Safety Data Sheet,** to help you find the following information in the two MSDS provided.

1. What are the hazardous ingredients in this product?

Product 1: **Product 2:**

2. What human health risks are associated with this product?

Product 1: **Product 2:**

3. What is the flash point of this product? Is the product flammable or combustible?

Product 1: **Product 2:**

4. Is the product reactive? Are there any storage issues?

Product 1: **Product 2:**

5. Which of these products represents an environmentally preferable choice? Why?

Reviewing Environmentally Preferable Purchasing Strategies

Exercise C for Sections 3-6
Instruction Sheet

Listed below are four types of commodities commonly purchased by City Agencies.

- **Office Supplies/Equipment**
- **Vehicle Maintenance Products**
- **Building/Construction Materials**
- **Furniture/Carpeting/Fixtures**

For each of the products in the commodity type to which you are assigned, indicate which Environmentally Preferable Purchasing strategies may apply, and describe possible approaches to ensure you purchase the most environmentally preferable product. See the Answer Sheet on the next page for an example.

Commodity Type: Office Supplies/Equipment

- Paper
- Printers
- Computers
- Binders

Commodity Type: Vehicle Maintenance Products

- Absorbents
- Engine oil
- Towels
- Antifreeze

Commodity Type: Building/Construction Materials

- Paint
- Windows
- Insulation
- Rubber flooring

Commodity Type: Furniture/Carpeting/Fixtures

- Desk/chair
- Carpet
- Lighting and fixtures
- Washer/dryer

Reviewing Environmentally Preferable Purchasing Strategies

Exercise C for Sections 3-6 Answer Sheet

Directions: For each specified product, indicate which Environmentally Preferable Purchasing strategies may apply, and describe possible approaches to ensure that you purchase the most environmentally preferable product.

Commodity	Energy Efficiency	Waste Preventing Strategy	Buy Recycled	Toxic Reduction	Recyclability
Ex: General Cleaning Product	Not applicable.	Purchase in largest size available. Purchase concentrates. Specify delivery with least packaging.	Specify product containers manufactured with recycled content.	Specify "non-toxic" in requests for bids. Include a list of chemicals that are not acceptable.	Ensure product container can be recycled in your Agency's recycling program.
1.					
2.					
3.					
4.					

Agency Environmentally Preferable Purchasing Policy

Exercise D for Section 7
Worksheet

Agency EPP Policy:

Developing Bid Specifications for Environmentally Preferable Purchasing

Exercise E for Section 8, Part I

What environmental criteria could you include in the specifications for the following products?

Deskside container for paper recycling

Fluorescent lighting

Janitorial cleaning products

Printing and writing paper

Printer toner cartridges

Exercise E for Section 8, Part II

Background:

Agency X experiences spills of 7,000 gallons per year of oily liquids from routine daily operations. The Department currently purchases a clay absorbent similar to "kitty litter" to collect spilled liquids. Staff members shovel the absorbent from a container onto each spill. Staff then collect the used absorbent and dispose of it as solid waste. Because the wet absorbent represents a significant waste stream, the Agency is interested in replacing it with an environmentally preferable product.

Two products have been proposed:

1. an absorbent made from a recycled product, or
2. a spill vacuum.

The recycled content product absorbs more liquid per pound of absorbent than the current product, reducing the quantity of absorbent used and discarded per year. The vacuum is a reusable product that virtually eliminates solid waste. The oily liquid captured in the vacuum can be recycled with other used oils. Various city agencies currently receive a rebate of $.01 to $.05 per gallon of recyclable oil when collected in bulk.

Assumptions:

CLAY ABSORBENT (product currently used)

- Clay absorbent is delivered in 40 pound bags at a cost of $6.90 per bag
- Each bag absorbs 4 gallons of liquid.
- Agency X purchased 1,750 bags of clay absorbent in the previous calendar year.
- Annual labor for collecting spills using the clay absorbent is 2,000 hours.
- The cost of labor is $20 per hour.
- When wet, the clay absorbent weighs 76 pounds per bag.

RECYCLED ABSORBENT

- Recycled absorbent is delivered in 20 pound bags at a cost of $5.15 per bag.
- Each bag absorbs 6 gallons of liquid.
- Agency X would purchase a minimum of 1,167 bags.
- Annual labor for collecting spills with the recycled absorbent is 1,750 hours.
- Wet recycled absorbent weighs 65 pounds per bag.

SPILL VACUUM

EXERCISE E
SECTION 8

- The initial purchase price of the spill vacuum is $4,000.
- Annual labor for collecting spilled liquid with the spill vacuum is 800 hours.
- Annual cost of vacuum maintenance is $1,400.
- Electricity to run the vacuum will cost $56 per year.

YEAR 1	Clay absorbent	Recycled absorbent	Spill vacuum
Unit cost			
Number of units			
Annual initial purchase cost			
Labor hours			
Cost of labor @ $20/hour			
Solid waste generated*			
Waste disposal cost @ $151/ton			
Other costs			
TOTAL			

*To calculate solid waste generated, multiply the number of bags of absorbent times the wet weight. Divide by 2,000 to obtain the number of tons.

YEAR 2	Clay absorbent	Recycled absorbent	Spill vacuum
Unit cost			
Number of units			
Annual purchase/ maintenance cost			
Labor hours			
Cost of labor @ $20/hour			
Solid waste generated*			
Waste disposal cost @ $151/ton			
Other costs			
TOTAL			

*To calculate solid waste generated, multiply the number of bags of absorbent times the wet weight. Divide by 2,000 to obtain the number of tons.

Challenges to Tracking Environmentally Preferable Purchasing

Exercise F for Sections 9-10

How might your Agency respond to these challenges to tracking Environmentally Preferable Purchasing? Record your solutions in the Response column below.

Barrier	Response
Difficulty obtaining data on specific quantities of an item purchased.	
Determining weight of product or packaging.	
Quantifying "other costs"—costs for training, labor, utilities, etc.—related to use of a specified product.	
Confirming environmental characteristics of products.	
Staff time to create and maintain database.	
Other.	