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Environmentally Preferable Purchasing:

A Getting Started Guide

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The National Wildlife Federation (NWF) is the largest conservation organization in the United States with one million members. Founded in 1936, its mission is to inspire Americans to protect wildlife for our children's future.

For more information about National Wildlife Federation's mercury campaign, go to www.nwf.org/mercury.

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Preface

State and local governments nationwide are one of the largest consumer groups in the United States. From computers to janitorial supplies, government procurement officers make purchasing decisions every day that can have far reaching impacts.

For the past decade, the National Wildlife Federation (NWF) has been dedicated to protecting America's wildlife heritage from toxic mercury pollution. Its Clean the Rain Campaign is working to eliminate the largest sources of mercury pollution, trying to reverse widespread contamination that has become commonplace. With 45 states issuing mercury fish advisories, and one in six women at risk of giving birth to a child with neurodevelopmental delays due to mercury exposure, the problem has grown to such proportions that decision makers nationwide are exploring all options for phasing out significant sources of mercury.

Mercury use in products presents a major opportunity for making significant progress in eliminating mercury, as safe and affordable alternatives exist. Every year, nearly 200 tons of mercury is used in the production of consumer products, from fluorescent bulbs to computers. For this reason, NWF embarked on developing a guidebook to assist procurement officers with implementing "environmentally preferable purchasing" programs. Recognizing, however, that procurement officers make purchases that have broader environmental implications, this guide provides resources to assist with implementing environmentally preferable purchasing efforts that extend beyond mercury products.

The *Environmentally Preferable Purchasing: A Getting Started Guide* represents a natural extension of NWF's work on mercury and other persistent toxics to address the full range of environmental impacts that purchasing decisions affect.

Introduction

State procurement officers have a tremendous opportunity to safeguard public health and the environment by taking steps to lessen the environmental impacts of their purchasing decisions. An effective Environmentally Preferable Purchasing program builds upon existing initiatives encouraging the purchase of environmentally friendly goods, such as recycled paper, to include multiple products and services. These programs also provide managers with a framework to evaluate the overall financial and environmental costs and benefits of their purchasing decisions.

This comprehensive guide provides procurement officers the information they need to begin implementing green purchasing in their state or locality. Designed to serve as a one-stop-shop, this guide includes technical information on green alternatives to commonly purchased goods, as well as contract language, policies, ordinances, and other resources for implementing an Environmentally Preferable Purchasing program. These materials complement the work of other non-profit organizations, such as INFORM, Inc., and Center for a New American Dream, that have provided many of the materials contained herein, have technical staff who are skilled in evaluating environmental attributes of products, and can assist states with implementing green purchasing programs.

Environmentally Preferable Purchasing (EPP):

Background

Environmentally preferable purchasing has its origins in early recycling programs. These programs prompted the sale of products containing recycled content, and efforts to support purchases of such products shortly followed. Today, environmental purchasing has been expanded to encompass a variety of environmental attributes from energy efficiency and low-toxicity to biodegradability.

> *"About 11 years ago, the State of Massachusetts decided that in order to promote recycling they needed to hire some people in the purchasing office to focus on recycled products procurement. It wasn't long before we recognized that if we could do this with recycled products we could do it with other products to achieve our policy goals and priorities in the state. That led to looking at energy and energy efficiency, toxics, water issues and so forth."*
>
> *- Eric Friedman, Director of State Sustainability for the Executive Office of Environmental Affairs of the Commonwealth of Massachusetts.*

With this increase in scope, single-product environmentally preferable purchasing initiatives are giving way to expanded Environmentally Preferable Purchasing programs. Recognizing that a more comprehensive approach to environmentally preferable purchasing is needed, these programs allow procurement officers to better account for progress both in terms of environmental impacts and cost savings. Such programs help procurement officers allocate scarce resources effectively to high-priority product categories.

Several states and cities have institutionalized environmentally preferable purchasing through policy mandates and the establishment of formal EPP programs. For example, Massachusetts and Minnesota have well-documented EPP programs, as do the cities of Santa Monica, CA; Seattle, WA; and Boulder, CO.

An increasing number of organizations, such as INFORM, Inc., Center for a New American Dream, and other non-profits focusing on pollution prevention, have

formed to assist in the adoption of these programs. The U.S. Environmental Protection Agency (EPA) has an extensive program and database on Environmentally Preferable Purchasing and provides "Comprehensive Procurement Guidelines" (see http://www.epa.gov/opptintr/epp/ and http://www.epa.gov/cpg/index.htm).

The private sector has recognized the opportunity to capitalize on demand for green products. Companies like Interface, Inc., the world's largest commercial carpet manufacturer, now offer several products made from recycled components. Trade associations have made setting standards for environmentally friendly products within their industries a top priority. For example, the Forest Stewardship Council is an international labeling program for timber products that certifies that the product comes from a forest that meets internationally recognized standards for sustainable logging.

EPP Today

The EPA defines Environmentally Preferable Purchasing as selecting "products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose."[1]

There are several environmental criteria to consider when comparing products. Frequently cited attributes include:[2]

- Biobased
- Biodegradable
- Carcinogen-free
- Chlorofluorocarbon (CFC)-free
- Compostable
- Durable
- Energy efficiency
- Lead-free
- Less hazardous
- Locally manufactured
- Low volatile organic compound (VOC) content
- Low-toxicity
- Mercury-free
- Persistent bioaccumulative toxics (PBT)-free
- (Rapidly) renewable materials
- Recyclable
- Recycled content
- Reduced greenhouse gas emissions
- Reduced packaging
- Refurbished
- Renewable energy
- Resource efficiency
- Upgradeable
- Waste preventing
- Water efficient

When appropriate, multiple criteria should be considered when evaluating a single product. In choosing which criteria to use, the purchasing agency should consider what current policies are in place. For example, many states already have laws that ban the purchase of lead-containing products. The Minnesota Office of Environmental Assistance has developed a web page dedicated to setting purchasing criteria (http://www.moea.state.mn.us/lc/purchasing/criteria.cfm).

"Another reason that Massachusetts has been successful is because it has dedicated [environmental] staff in the purchasing office. I think that has been really important because vendors coming in know where to go. It means that people with questions know where to go. There is someone coordinating the program and doing the research, finding out who else is using the products.

If you don't have that, things just get sort of lost and there is no one taking charge, no one spreading the word, no one doing the research. Having an environmental specialist in the procurement office would be one of my first and primary recommendations to any large organization considering starting an EPP program."

~ Eric Friedman

With the assistance of environmental staff, purchasing managers can analyze the content and environmental impacts of current purchases and make changes to requests for services and products based on targeted environmental attributes. In addition to using in-house expertise, purchasing managers can rely on the work of several government, non-profit, and private entities that have begun to develop standards and labels for various environmental attributes.

The EPPnet listserv coordinated by the Northeast Recycling Council (http://www.nerc.org/eppnet.html) is also an important source for EPP product information, such as availability of product specifications, vendors of particular products, pricing information, and strategies to achieve recycled product procurement goals and federal procurement policies. The listserv links federal, state, local and private procurement and environmental officials charged with purchasing environmentally preferable products and services, and developing policies for the procurement of these products.

State and local governments that have adopted EPP programs report both environmental benefits and cost savings. A few examples of reported benefits include:

- Four projects through the Ohio Energy Services program were estimated to save the state over $10 million. Its Performance-Based Contract Program allows state agencies to use energy savings to pay for building improvements.[3]
- Santa Monica, California, estimates that its green cleaning product purchases have eliminated 3,200 pounds of hazardous materials annually and saved the city approximately 5 percent on annual cleaning product expenses.[4]
- Cape May County, New Jersey, saved $45,000 between 1993 and 1998 by adopting an Integrated Pest Management approach to minimize the environmental impacts associated with use of chemicals to control unwanted insects, rodents, and weeds.[5]

In addition to reduced environmental impacts, benefits of an EPP program can include:

- Purchase price cost savings
- Reduced repair and replacement costs when using more durable and repairable products
- Improved product design and performance of the product(s)
- Increased employee safety and health
- Improved employee morale and public/taxpayer support of government activities

Cost savings from EPP programs are achieved when materials can be purchased at a lower price (e.g., remanufactured products), operational costs are reduced (e.g., energy efficiency), disposal costs are reduced (e.g., more durable products) and hazardous management costs are reduced (e.g., less toxic products). Environmentally preferable purchasing can also reduce an organization's future liabilities related to risks associated with storing hazardous materials and complying with environmental regulations.

Importance of State EPP Programs

Like federal agencies and other large institutions, such as universities and hospitals, state purchasing agencies exert tremendous purchasing power. State and local governments will spend more than $500 billion on goods and services in 2006.[6] This purchasing power combined with ecologically sound purchasing criteria provides state procurement departments with the potential to greatly reduce adverse environmental impacts. In addition, some states, including Minnesota and Ohio, make purchases on behalf of local municipalities and townships through cooperative purchasing ventures, further increasing state purchasing power and the potential to affect environmental improvements.
The large purchasing volume of institutions gives procurement officers the ability to influence what products and services are offered in end markets. By increasing demand for environmentally preferable goods such as recycled products, renewable energy, energy-efficient products, non-toxic cleaners and sustainably harvested wood, such institutions can promote the availability of cleaner products and processes to the broader public.

The transparency of government purchasing programs also allows state EPP programs to serve as a model for private companies and organizations that are considering adopting an EPP program. Because state purchasing offices must comply with public document disclosure laws (to ensure that their purchasing decisions are fair and prudent), environmentally preferable purchasing policies and requests for bids that include specifications for environmentally preferable products are available to the public and can be used to shape private EPP programs.

Finally, as public institutions, state purchasing agencies can provide better tax payer accountability by supporting environmental protection through purchasing.

Implementing an EPP Program:

Guidelines

The U.S. Environmental Protection Agency provides the following guidelines for establishing an EPP program:[7]

- **Environment + Price + Performance = EPP.**
  Environmental considerations should become part of normal purchasing practices, consistent with such traditional factors as product safety, price, performance, and availability.

- **Pollution Prevention.**
  Consideration of environmental preferability should begin early in the acquisition process and be rooted in the ethic of pollution prevention, which strives to eliminate or reduce, up-front, potential risks to human health and the environment.

- **Life Cycle Perspective/Multiple Attributes.**
  A product or service's environmental preferability is a function of multiple attributes from a life cycle perspective.[8]

- **Comparison of Environmental Impacts.**
  Determining environmental preferability might involve comparing environmental impacts. In comparing environmental impacts, federal agencies should consider the reversibility and geographic scale of the environmental impacts, the degree of difference among competing products or services, and the overriding importance of protecting human health.

- **Environmental Performance Information.**
  Comprehensive, accurate, and meaningful information about the environmental performance of products or services is necessary in order to determine environmental preferability.

Strategies

In addition to these guidelines, we have identified the following important strategies that can help procurement officers develop successful EPP programs or policies:

Secure Senior Management Support.

Few programs will survive without support from the top. Securing executive support is aided by the establishment of legislation and/or Executive Orders that mandate environmental preferable purchasing. Several examples are included throughout this guide.

Establish Written Policy.

Many programs fail due to a lack of well-conceived written policies. Written policy provides procurement staff a source from which they can clarify the intent of the EPP program. Policies might include guidance for purchasing decisions such as allowing for price preferences or "best value" purchases. The Center for a New American Dream recently completed a study that examined written policies at over 60 state and local governments. Available from their website (http://www.newdream.org), this is a valuable resource for states that are just getting their programs off the ground, or are looking to update or revamp their programs.

Establish Project Leadership.

Successful implementation often is the result of strong leadership. It is recommended that someone with strong operational and people skills and knowledge of environmental issues be selected for this position.

Establish a "Green Team".

In addition to a project leader, a green team should be formed with members from various functional areas who traditionally have a role in purchasing decisions (senior management, end-users, specifiers, environmental, health and safety staff, waste management, etc.). The green team helps ensure commitment to the program throughout the organization.

Establish Short Term and Long Term Program Objectives.

Short term objectives should include targeting key product categories and one or two environmental attributes. Long term objectives should include targeting several, if not all, product categories and multiple environmental attributes.

Provide Employee Training.

Whether as part of routine training or as stand-alone sessions, employee training for EPP should be required of all purchasing staff. These sessions should ensure that procurement professionals understand the importance of key environmental attributes and have access to relevant resources and program policies.

"I think measuring your progress is really important. We have a graph that shows the number and volume of environmental products that we purchase and that is really useful to show to people. Also, measure the environmental benefits to give people a reason why you are doing this. We are working on a state sustainability report, which will include a piece on procurement. We can always do a better job measuring and tracking the things that we do and it's important that we do that."

~ Eric Friedman

Provide Incentives.

Reward purchasing employees that make efforts to help operationalize an EPP program. Recognize departments that achieve better than expected results.

Establish Standard Accounting and Reporting Procedures.

In order to evaluate the effectiveness of EPP programs, agencies should establish standard accounting and reporting procedures for environmentally preferable purchases.

Celebrate and Demonstrate Success.

Environmentally preferable purchasing programs need widespread support to maintain continued enthusiasm. Purchasing departments should highlight the results of their EPP programs in performance reports and regular staff communications.

Overcoming Obstacles

Even the best intentioned managers may face challenges to establishing an effective and long-lasting environmental purchasing program. Some of the more common obstacles are discussed below, along with suggestions for overcoming them.

"Overcoming these perceptions takes a multifaceted approach. It's about not forcing things down peoples' throats. It's trying to understand what they heard or why they think what they think. If you think you need to give them something to try out or a pilot program to overcome these perceptions, that's a good approach. If you need to find someone who is a fleet manager in another state who has been using re-refined oil for seven years to talk to your person making the purchases to let him or her know that using re-refined oil doesn't void the warranties of the vehicles because he has already talked to Ford and GM about it, then that's what you have to do."

~ Eric Friedman

Obstacle:

"There is perception that EPP products don't work, that they are too expensive, and that they will not meet the needs of our end users"

Recommendations:

- *Demonstrate products through pilot programs*
- *Talk to other states that have used the products*
- *Work with your end users to better understand their needs*

Obstacle:

"We started an EPP program years ago but now it's no longer effective."

Recommendations:

EPP programs require long-term commitment. To ensure sustained effectiveness:

- *Establish written policy*
- *Provide incentives*
- *Establish metrics to prove program's value after initial activity has slowed*
- *Link the program's benefits to priorities of other state agencies*
- *Pass legislation or issue an Executive Order to require it and allocate funding for it.*

Obstacle:

"These decisions are too complex and therefore too time consuming for our purchasing staff."

Recommendations:

Simplify your EPP program by:

- *Targeting specific attributes*
- *Establishing "approved/preferable" products*
- *Identifying specific product labeling*
- *Providing resources to access information*
- *Conducting life cycle costs and environmental assessments prior to implementing the program.*

"I think linking up with other agencies in your state that have environmental or public health priorities is a good idea. You get institutional support this way. It makes the procurement process integral to the state's other priorities."

~ Eric Friedman

Obstacle:

"We are in a state budget crunch and cannot afford to implement an EPP program."

Recommendations:

EPP programs can be implemented over time:

- *Simplify the program and choose only one product or service where EPP principles will be incorporated.*
- *Try a pilot project that targets highest cost savings, e.g. energy efficiency*

"You need to start by going to the sources and sites that you trust. You start with the federal government to see what kind of recommendations they have. There are lots of folks out there who are doing education and research on EPP. There are places like The Center for a New American Dream that have links to their own information and other states and procurement programs. You can ask questions to purchasers rather than getting information from the vendors. I think it's tough when you get information from vendors and you don't know if you can trust it or not."

~ Eric Friedman

Obstacle:

"Our state accounting practices do not reflect the financial benefits of EPP."

Recommendations:

The purchase price is not the only cost related to the product.:

- *Integrate "total cost assessment" procedures into contracts with service and product providers.*
- *Adjust financial evaluation procedures to consider costs and benefits beyond the purchase price of a product or service.*

"Generally, procurement offices are not in a position to suddenly make all of their products environmentally preferred products. I think it makes a lot of sense to start with a couple of products that you feel comfortable with and that will have some success."

~ Eric Friedman

3. Our Approach

Priority Areas

For any given institution, a process of reviewing environmental and product priorities, environmental and cost impacts, and other criteria will be necessary to identify the best place to begin an EPP program or approach. As we review the experiences that states, municipalities and other organizations have had in implementing a wide range of environmental purchasing policies, however, a short list of EPP programs emerges. The approaches or products that have been more widely and effectively implemented may be a particularly useful place to begin EPP activities. These approaches include:

- broad purchasing policies which address mercury or other persistent bioaccumulative toxic (PBT) chemicals such as lead;
- broad purchasing policies which increase energy efficiency;
- product specific policies to improve the environmental impact of cleaning supplies, computer equipment, paper, and paper products.

In this guide we provide an overview of each of these high priority areas as well as links to environmental purchasing information on a wide range of other potential product and procurement areas.

Purchasing Mercury and PBT-Free Products

Like lead, mercury is a powerful neurotoxin that should be eliminated from purchases. Purchasing departments can drastically reduce the acquisition of new mercury-containing products with widely available mercury-free alternatives. States have approached reducing mercury and other PBTs both through broad agreements that require the state to avoid mercury, lead, or other persistent toxics in all products procured, and through specific mercury-free policies targeting key products where use is more common. In Section One we provide examples both of these broad agreements and specific mercury product policies, including low-mercury lighting, automobiles and medical products.

Purchasing for Energy Efficiency

Energy efficiency achieves significant cost savings and reduces multiple pollutants simultaneously that are generated in the production of electricity. Energy efficient purchasing has grown in popularity nationwide among institutions and homeowners with the emergence of EPA's Energy Star program. Sample procurement language and other resources are found in Section Two.

Top Product Categories

Working with a variety of organizations who have aided in the development of state level EPP programs, we have identified the top three purchasing categories where states have been most successful in reducing environmental impacts through purchasing preferences. For each product, sample procurement language, contracts, statutes, and reference material is provided (see Sections Three and Four).

Computers – Computers are filled with hazardous components, including mercury and CFC's. Because the technology is constantly advancing, old systems quickly become obsolete, thereby creating a significant waste problem. Purchasing decisions should favor products that are less toxic, energy efficient and built using recycled materials.

Cleaning Supplies – To reduce exposure to toxic chemicals found in many cleaning products, several purchasing departments across the country award contracts to suppliers of less toxic cleaning products. Purchasing safer cleaning supplies reduces risks to custodial workers and employees through reduced exposure to cleaners, solvents, paints, and other hazardous materials, and reduces releases to public water supplies and landfills.

Paper and Paper Products – Recycled papers are nearly identical from their non-recycled counterparts, with similar performance, color and cost. Compared to virgin paper manufacturing, paper produced from recycled material creates less air pollution and uses a great deal less energy and water. In addition, using recycled paper reduces the total amount of waste paper sent to a landfill or incinerator.

4. This Guide

What You'll Find in the Guide:

NWF's EPP guide is intended to provide representative information on select product categories and more generally on EPP programs adopted by select state and local governments. It does not attempt to include the entire set of materials available on these subjects. We hope that you will find these materials helpful as you embark on instituting environmentally preferable purchasing decisions at your institution.

Below is a detailed list of what you will find in this guide.

Section One: Purchasing Mercury-Free Products

General Resources

- Mercury-containing products and alternatives – INFORM, Inc.
- Mercury: Managing, recycling, Disposing; A business guide to conducting a mercury audit – P3 Erie
- Mercury-free industrial thermometers, manometers, thermostats, and switches fact sheet – INFORM, Inc.
- Shedding light on mercury in fluorescents – INFORM, Inc.

Mercury & Fluorescent Lamps

- Mercury disclosure requirements and the New Jersey lamp contract – INFORM, Inc.
- Recommended specification for lamp purchasing contracts – INFORM, Inc.
- Fluorescent lamp recycling: 10 steps to a successful program – H2E Program
- King County, WA Executive Order – Mercury-containing lamp recycling
- Massachusetts Contract Award – Collection and recycling of fluorescent lamps and mercury-containing devices and/or cathode ray tubes, computers and electronics

Mercury & Vehicles

- Purchasing cleaner vehicles: Questions and answers for fleet buyers and vehicle purchasers – INFORM, Inc.
- Purchasing cleaner vehicles: Recommended purchasing specifications for vehicle bids
- Minnesota moves to drive mercury out of environment – INFORM, Inc.
- Minnesota Request for Bid – Automobiles, passenger vehicles and cargo vans

Mercury & Hospitals

- Massachusetts rids mercury from state hospitals – INFORM, Inc.
- Mercury-free resolutions and purchasing policies – Sustainable Hospitals

Sample Policies, Resolutions and Executive Orders

- Maryland Regulation 21.11.07.07 – Mercury and products that contain mercury
- Connecticut Mercury Education and Reduction Act – Elemental mercury purchasing and disposal requirements
- Amherst College Mercury Use Reduction Policy
- Seattle, WA Resolution No. 30487 – Stating Seattle's intent to reduce its use of PBTs, and setting forth a work program
- Washington Executive Order No. 04-01 – Persistent toxic chemicals

Section Two: Purchasing for Energy Efficiency

General Resources

- Energy Star institutional purchasing – EPA
- Finding money for energy efficiency – EPA
- Energy efficiency procurement resources – EnergyIdeas Clearinghouse
- Additional energy resources

Sample Contract Language, Specifications, and Policies

- NY City Council Policy 536-A – Energy efficient products
- Energy Star office products: Sample procurement language

Section Three: Top Product Categories

Computers

General Resources

- Guide to environmentally preferable computer purchasing – Northwest Product Stewardship Council
- Electronic equipment and product stewardship – Northwest Product Stewardship Council
- Additional computer resources – Center for a New American Dream

Cleaning Supplies

General Resources

- General purpose cleaners – Green Seal
- Approved products – Center for a New American Dream
- Additional cleaning products resources – Center for a New American Dream

Sample Contract Language, Specifications, and Policies

- NY City Council Policy Int. No. 552 – Less toxic custodial products

Paper Products

General Resources

- Buying better copy paper – Scot Case
- Additional environmentally preferable paper links – Center for a New American Dream

(cont.)

Sample Contract Language, Specifications, and Policies

- Minnesota Statute 16B.122

Section Four: State EPP Examples

Laws, Resolutions, Executive Orders, Ordinances

- Minnesota Executive Order 99-4 – Implementation of pollution prevention and resource conservation by state government
- Minnesota Statutes 2004 – Purchase of recycled, repairable, and durable materials
- California Bill No. AB498 – Environmentally preferable purchasing
- Cincinnati, OH Ordinance No. 141-1994 – Environmentally preferable purchasing
- Buffalo, NY Resolution – PBT-Free Purchasing
- Sarasota County, FL Resolution No. 02-119, 2002 – Environmentally preferable purchasing, energy efficiency, sustainable stewardship
- Boulder, CO Environmental Purchasing Policy Directive
- Kansas City, MO Green Purchasing Ordinance
- Seattle, WA Environmental Policies & Procedures – Environmentally responsible purchasing
- Illinois Executive Order No. 6 (2000) – Establishing the Green Illinois government coordinating council

Model policies & initiatives

- Maine Environmentally preferable procurement program
- Minnesota Product stewardship policy initiative
- Alameda County, CA Environmentally preferable purchasing model policy & Implementation guidance for model policy
- Sample purchasing resolution – NACO's Environmental purchasing starter kit

Other resources

- Links to State EPP Resources

References

[1] Executive Order 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition (September 14, 1998) and its predecessor, Executive Order 12873, Federal Acquisition, Recycling, and Waste Prevention (October 20, 1993), http://www.ofee.gov/.

[2] See, for example, Case, S. Environmental Purchasing Policies 101: An Overview of Current Environmentally Preferable Purchasing Policies, March 25, 2004, http://newdream.org/procure/policy/policy101.pdf

[3] Ohio Department of Administrative Services, 2004 Annual Report, http://das.ohio.gov/ASD/PDFs/DASAR2004-6-30-05FINALWebversion.pdf

[4] U.S. Environmental Protection Agency (EPA), State and Local Government Pioneers: How State and Local Governments Are Implementing Environmentally Preferable Purchasing Practices, EPA742-R-00-004, November, 2000, http://www.epa.gov/opptintr/epp/pubs/statenlocal.pdf

[5] Ibid.

[6] Governing.com, The State and Local Market, http://www.governing.com/mediakit/market.pdf

[7] U.S. EPA, U.S. EPA, Environmentally Preferable Purchasing: The Five Guiding Principles, http://www.epa.gov/opptintr/epp/pubs/guidance/fivegp.htm

[8] See also U.S. EPA, Life-Cycle Assessment, http://www.epa.gov/ORD/NRMRL/lcaccess/

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Section One:

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General Resources

INFORM
Strategies for a
better environment

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New York, NY 10005-4001

212 361-2400 Fax 212 361-2412
www.informinc.org

Mercury-Containing Products and Alternatives

Product	Applications	Substitute	Resources
Fluorescent Lamps	Indoor office lighting, compact fluorescent bulbs used to replace regular light bulbs, halo-shaped indoor bulbs, small fluorescent lights in backlit LCD displays in devices, appliances, navigational systems, etc.	All mercury-containing lamps should be recycled instead of thrown away at the end of their life. Take care not to break the lamps during transport and choose a qualified recycler. Office lamps: Although fluorescents contain mercury, they are preferred over incandescents because they are much more energy-efficient. Light-emitting diode (LED) systems can replace backlit LCD panels where visualization of information in a dark room is necessary. Energy-efficient LED exit signs can also replace signs that use halogen or fluorescent lighting. High-intensity discharge lamps: Mercury vapor lamps are the oldest and least efficient in this category. Sylvania makes a mercury-free high-pressure sodium lamp called the Lumalux Mercury Free/Eco lamp.	See http://www.lamprecycle.org for a list of companies nationwide accepting lamps for recycling. See http://yosemite.epa.gov/estar/consumers.nsf/content/exitsigns.htm and http://www.buildinggreen.com/products/ledexit.html for information on LED exit signs.
High-Intensity Discharge Lamps (mercury vapor, high-pressure sodium and metal halide)	Security lighting, outdoor and parking lot lights, warehouses		
Ultraviolet Lamps and Some Neon Lamps	Tanning beds, laboratory, medical, theatrical, signs, special purposes		
Manometers, Carburetor Synchronizers, Other Pressure-Measuring Devices	Laboratories, machine shops, auto repair areas (used for motor calibration)	Aneroid and electronic manometers and analog gauges (also known as vacuum gauges) are available at comparable prices for most uses from many vendors.	See http://abe.www.ecn.purdue.edu/~mercury/src/devicepage.htm for information on mercury manometer removal techniques.
Sphygmomanometers (blood pressure equipment)	Hospitals, school nurse offices	Aneroid and electronic devices are just as accurate when regularly calibrated.	See http://www.sustainablehospitals.org for a list of brand name mercury-free sphygmomanometers and calibrating equipment.

Product	Applications	Substitute	Resources
Barometers	Schools, doctors' offices, weather stations	Digital and other mercury-free barometers are available.	See http://abe.www.ecn.purdue.edu/~mercury/src/devicepage.htm for information on removal and alternatives.
Sink Sewage Traps (mercury in traps can evaporate and cause elevated mercury levels in the air around the sink)	Sinks in places where mercury may have been used: schools, hospitals, machine shops, industrial areas, etc.	All drains must be cleaned out properly and within regulations, and this process may require a hazardous materials professional. Mercury in traps could be adding large amounts of mercury to the facility's wastewater.	See http://www.masco.org/mercury/infra/pp6.html for trap cleaning protocol.
Elemental Mercury and Laboratory Solutions	School science laboratories, other industrial areas	For educational uses, mercury-free experiments or computer simulations are available. Mercury-free laboratory reagent substitutes are also available for many products.	For schools, see http://www.mercury-k12.org/. Hospitals and laboratories can contact their vendors for information on mercury-free substitutes.
Batteries (mercuric oxide, most zinc-air, alkalines manufactured before 1996, and foreign-made alkalines)	Rechargeable devices, battery-operated devices	Mercury-containing batteries should always be recycled. Choose battery-free devices when available.	The Rechargeable Battery Recycling Corp. takes rechargeable batteries for recycling (http://www.rbrc.org). Also see the EPA at http://www.epa.gov/epr/products/batteries.html for information on battery disposal and recycling.
Thermostats	On walls, in radiators, in devices that must maintain a constant or changing temperature such as incubators, refrigerators, freezers, and cold rooms. In most devices, you can remove the front plate and easily see the mercury switch inside.	Mercury-free electronic thermostats are available at comparable prices for all uses. Mercury thermostats must be discarded as hazardous waste.	Mercury wall thermostats can be returned for recycling via the Thermostat Recycling Corp. See http://www.nema.org/index_nema.cfm/664/ for return locations; see http://abe.www.ecn.purdue.edu/~mercury/src/devicepage.htm for information on removal and alternatives.
Outdated Mercury-Containing Equipment	Storage areas, basements, equipment rooms	Mercury-containing equipment that is no longer useful should be sent to a mercury recycling firm immediately to limit the risk of a mercury spill.	For a list of mercury product recyclers, see http://www.almr.org/members.htm or http://abe.www.ecn.purdue.edu/~mercury/src/recyclers.htm.

Product	Applications	Substitute	Resources
Float Switches	Septic tanks, sump pumps, industrial liquid tanks, and sewage plant systems	"Bubble troll," float-tilt, and electronic devices are now available.	See http://abe.www.ecn.purdue.edu/~mercury/src/floatswitch.htm for more information on identifying mercury float switches. Non-mercury replacement switches and equipment with non-mercury float switches are available from many manufacturers. Ask your vendor.
Switches in Electrical Equipment, Relays, Boilers, Cooling and Heating Equipment, Mercury-Containing Wall-Mounted Light Switches Manufactured Before 1991("silent switches")	Electrical equipment, HVAC systems, utility rooms, older small electrical devices, electric warming devices, other equipment with electrical switches	When buying replacement or new equipment, specify mercury-free switches, temperature devices, and relays, and buy gas equipment with *electronic* ignitions. For existing equipment, label all mercury-containing parts with bright tags so proper measures can be taken if something breaks or equipment must be discarded. If current equipment has a history of mercury spills, contact vendor to see if a mercury-free part is available to switch out.	See http://www.state.ma.us/ota/pubs/eppdec00.htm#mercury, http://www.sustainablehospitals.org/HTMLSrc/IP_Mercurygauges.html, and http://abe.www.ecn.purdue.edu/~mercury/src/devicepage.htm for more guidance. A fact sheet on mercury in appliances is available at http://www.aham.org/aric/aric.cfm.
Vehicles	Switches in trunk and hood lights, some four-wheel-drive antilock braking system (ABS) switches, mercury vapor (HID) headlamps	All foreign manufacturers phased out mercury-containing convenience lighting switches and ABS switches in 1993. All domestic models are expected to be free of these mercury components in 2002. Of current concern is the increasing use of mercury in other car applications. Where possible, avoid high-intensity discharge headlamps as well as backlit LCD dashboard displays and family entertainment systems, which may contain mercury. When going out for bid, require vendors to disclose all mercury-containing components.	It is estimated that 200 tons of mercury are present in vehicles on the road today. Before sending cars for recycling, ensure that the recycler will remove mercury components before crushing. For more information on the mercury content of specific models, see http://www.cleancarcampaign.org/mercury.html.
Gas-Fired Appliances, Boilers, and Heating Equipment	Gas appliances with standing pilot lights, chest freezers with internal lid light, pre-1972 washing machines with lid on/off switch, and older appliances such as irons and blenders may have mercury in the on/off switch.	Buy gas appliances with *electronic* ignitions to avoid standing pilot lights with mercury flame sensors. Buy chest freezers with lights in the body, not the lid.	A fact sheet on mercury in appliances is available at http://www.aham.org/aric/aric.cfm. More information is also available at http://abe.www.ecn.purdue.edu/~mercury/src/old_gas_range.htm.

Product	Applications	Substitute	Resources
Thermometers	Outdoor walls, hospitals, school nurses' offices, laboratories, incubators, temperature-controling equipment	Electronic thermometers are most often used in health care settings and in laboratory equipment. Alcohol and other types of non-mercury liquid thermometers are most often used in laboratories and weather stations.	See http://www.sustainablehospitals.org for information on medical, laboratory, and industrial mercury-free thermometers. Many states and localities are restricting the sale of mercury fever and industrial thermometers. See http://www.mercurypolicy.org for updated information on sales restrictions.
Laboratory and Institutional Size Ovens, Refrigerators, Stoves, and Freezers	Many industrial ovens and refrigerators/freezers have mercury temperature control devices. Gas stoves with standing pilot lights have mercury flame-sensor devices.	Specify gas appliances with *electronic* ignitions to avoid mercury flame sensors. Other equipment may use hard-contact switches, solid-state switches, electro-optical switches, inductive sensors, capacitive sensors, photoelectric sensors, and ultrasonic sensors instead of mercury.	See http://abe.www.ecn.purdue.edu/~mercury/src/devicepage.htm for information on removal and alternatives.
Cleaning Chemicals	Custodial closets, classrooms, laboratories	Bleach and other cleaning chemicals can contain trace contaminant mercury. Unless your facility is having mercury discharge violations with the local water treatment facility, pursuing mercury-free products may not be worthwhile.	See http://www.masco.org/mercury for case studies of Boston-area hospitals that had to find mercury-free cleaners to avoid mercury discharge violations with the local water treatment facility.
Flow Meters	Water and sewer plants, power stations, and heating plants may use mercury flow meters. Some household gas meters made before 1961 contain a mercury regulator attached to the gas meter.	For most uses your supplier will have a mercury-free model.	Specify mercury-free models when buying this type of equipment. See http://abe.www.ecn.purdue.edu/~mercury/src/flowmeter.htm for information on removal and disposal of existing mercury flow meters.
Demolition Waste	When remodeling, remove all hazardous components before dismantling structures. Mercury may be present in drain traps, light switches, and other locations.	When remodeling, specify mercury-free switches and other equipment for new purchases.	See http://www.enveng.ufl.edu/homepp/townsend/Research/DemoHW/Guide/DHW99_12_30.pdf for guidelines on removing hazardous materials before demolition.

Source: This table was compiled from many sources, including documents from the Sustainable Hospitals Project, Florida Center for Solid and Hazardous Waste Management, Purdue University/EPA Region 5 Mercury In Buildings, and the Massachusetts Office of Technical Assistance.

For more information contact Cameron S. Lory, Green Building Specialist, at (212) 361-2400 or lory@informinc.or g.

Mercury

Managing, Recycling, Disposing

A Business Guide to Conducting a Mercury Audit

MercERIE—sponsored by the Pollution Prevention Partnership for Environmental Responsibility in Erie (P^3ERIE)—is a project that encourages businesses and organizations to prevent mercury from contaminating our environment and Lake Erie by conducting an internal mercury audit.

Mercury is a useful but toxic substance that accumulates in higher levels of the food chain. Nationwide, mercury is represented in more fish consumption advisories than any other chemical. The Great Lakes Binational Toxics Strategy calls for the United States and Canada to work on the virtual elimination of persistent toxic substances, including mercury, in the Great Lakes Basin. The United States' goal is to reduce mercury use and release to the environment by 50 percent.

MercERIE supports this goal by helping businesses and organizations conduct internal mercury audits to determine the amount of mercury in their facility.

MercERIE

Use this audit brochure to help you:

- *Identify items that contain mercury.*
- *Consider alternatives for mercury-containing items.*
- *Manage and recycle mercury properly.*
- *Determine the mercury content of industrial chemicals that may contain residual mercury.*
- *Manage energy efficiently.*

What are Common Mercury-Containing Items?

Mercury is being phased out of many industrial and consumer applications. However, mercury-containing items and chemicals are still used, and old equipment and processes containing mercury may still be used in some facilities.

Inventory your facility for the following items that may contain mercury. Note the location and quantity of the devices and consider acceptable mercury-free substitutes where applicable and properly manage and recycle the mercury where acceptable substitutes do not exist.

- **Accustats**
- **Automatic Car Wash Equipment** *(contact the manufacturer)*
- **Barometers**
- **Batteries:** *mercuric oxide or button.*
- **Catalysts for Urethane and Vinyl Production**
- **Cinnabar**
- **Conveyor Counterweights**
- **Counterweights for Old Grandfather Clocks**
- **Dental Amalgam and Amalgam Capsules**
- **DC Watt Hour Meters**
- **Displacement/Plunger Relays**
- **Electroplating Solutions and Processes:** *Zinc-mercury plating, steel coloring, mercuric chloride, mercuric sulfate, mercuric nitrate, mercuric cyanide, mercuric oxide and mercuric dichromate have been used in the past in the metal finishing industry.*
- **Elemental Mercury** *for demonstrations, displays or refilling mercury-containing equipment.*
- **Flame Sensors** *sometimes found in the pilot light and burner assembly on gas-fired furnaces, boilers, unit heaters, space heaters, residential and commercial cooking equipment, commercial hot water heaters, industrial ovens and in central air conditioning systems.*
- **Flow Meters**
- **Feeding Tubes**
- **Gas Extraction Apparatus**
- **Gas Regulators**
- **Gastrointestinal Diagnostic Equipment**
- **Gyroscopes**
- **Hydrometers with Thermometers**
- **Hydronic and Warm Air Controls** *with tilt switches such as aquastats, pressurestats, firestats, fan limit controls and pressureflow controls on air handling units.*
- **Industrial Chemicals** *(see the Industrial Chemical Connection): caustic soda, sulfuric acid, potassium hydroxide, muriatic acid and ferric chloride.*
- **Laboratory Chemicals:** *histological fixatives, mercury chloride, mercury (II) chloride, mercury iodide, mercury nitrate, mercury (II) oxide, mercury (II) sulfate, nessler reagent, zenker's solution and dozens of other less commonly used laboratory chemicals.*
- **Lamps:** *fluorescent, high-pressure sodium, metal halide, ultraviolet and neon (except red, orange and pink).*
- **Level and Rotation Sensors**
- **Lighthouse Lamp Bearings**
- **Manometers and Vacuum Gauges**
- **Mercury Displacement Relays** *sometimes found in street lighting, resistance heating, plastics molding equipment, motors, pipe organs and commercial electric cooking appliances such as pizza ovens and deep fryers.*
- **Mercury-Sealed Pistons**
- **Microwave Relays/Transmitters**
- **Permeters**
- **Pesticides Manufactured Before 1994** *(seed preservatives and fungus control for turf)*
- **Pharmaceuticals:** *Look for "mer" or "merc" in the name. Mercury is used as a preservative in some pharmaceutical products.*
- **Pressure-trols**
- **Rectifiers**
- **Ring Balances**
- **Semiconductors, Solar Cells, Thin Film Transistors, Infrared Detectors and Ultrasonic Amplifiers** *may contain mercury-cadmium-telluride, mercury-selenide or mercury-telluride that can contaminate electroplating baths.*
- **Shunt Trips**
- **Sphygmomanometers** *(blood pressure meters)*
- **Stokes Gauges**
- **Switches and Relays:** *fire alarm box switch, pressure control switches (mounted on bourdon tube or diaphragm), silent light switch, relay switches, switches in pneumatic tube and conveyor belt message systems, phase splitters, sump pump, bilge pump and other float controls, tilt switches, etc.*
- **Thermometers** *including industrial dial face thermometers with capillary tubes.*
- **Thermostats and Thermoregulators**
- **Wastewater Treatment Plant Pivot Arm Bearings**

What is P^{3}ERIE?

P^{3}ERIE is a voluntary pollution prevention initiative comprised of businesses, educational institutions, local government in the greater Erie community and the Pennsylvania Department of Environmental Protection's Office of Pollution Prevention and Compliance Assistance (OPPCA). P^3 stands for Pollution Prevention Partnership and ERIE stands for Environmental Responsibility In Erie. P^{3}ERIE's mission is to prevent pollution by raising awareness of pollution issues and implementing projects that reduce the amount of persistent toxins used and released into the greater Erie environment, especially the Lake Erie watershed.

P^{3}ERIE is funded through a grant from the United States Environmental Protection Agency's Great Lakes National Program Office.

Thanks to Stephanie Vogler and the Edinboro State University Graphic Arts Department for their initial conceptualization of this brochure. Thanks to Western Lake Superior Sanitary District for the use of their Blue Print for Mercury Reduction as a model for portions of this brochure and to John Gilbeson of the Minnesota Office of Environmental Assistance for his technical assistance with this brochure. For a complete list of references, contact the Pennsylvania Department of Environmental Protection at 814 332-6839.

Take the Mercury Audit

Mercury Sources

Refer to the list of mercury-containing items in this brochure to identify mercury sources located or used in your work area. List the mercury-containing items used or stored in your workplace:

_____

_____

_____

_____

_____

_____

_____

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_____

_____

Mercury Management

Answer the following questions to help you access your management of mercury.

Is staff trained on the health and environmental concerns of mercury? **Yes** ☐ **No** ☐

Is staff trained on mercury spill prevention and management? **Yes** ☐ **No** ☐

Is there a mercury spill clean-up kit on site? **Yes** ☐ **No** ☐

Do you have a procedure to report mercury spills? **Yes** ☐ **No** ☐

Have your sewer drain traps or catch basins been checked for mercury and cleaned to remove mercury? **Yes** ☐ **No** ☐

Has your facility tested all wastewater discharges for mercury? **Yes** ☐ **No** ☐

Does your facility currently recycle mercury? **Yes** ☐ **No** ☐

If your business or institution is involved with demolition, remodeling, HVAC or automobile scrapping, are mercury-containing items (thermostats, switches, etc.) removed and recycled? **Yes** ☐ **No** ☐

Is mercury phased out during retrofitting or new facility construction? **Yes** ☐ **No** ☐

Does your facility have a policy on purchasing mercury-containing products? **Yes** ☐ **No** ☐

Does your purchasing department currently require a disclosure by your vendors of mercury concentrations in chemicals? (If not, then refer to the last page of this brochure to see a sample letter you can use with your vendors to request a mercury certificate of analysis) **Yes** ☐ **No** ☐

Evaluating Your Audit

If you answered "No" to any of these questions, or could not answer a question, then you may be improperly managing, recycling or disposing mercury in your workplace. For more information or assistance regarding proper mercury management, contact:

- *Pennsylvania Department of Environmental Protection at 814 332-6839*
- *Or, visit the DEP Web site at http://www.dep.state.pa.us. Click on* ***Pollution Prevention and Compliance Assistance*** *then select* ***P^{3}Erie.***

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- **Level and Rotation Sensors**
- **Lighthouse Lamp Bearings**
- **Manometers and Vacuum Gauges**
- **Mercury Displacement Relays** *sometimes found in street lighting, resistance heating, plastics molding equipment, motors, pipe organs and commercial electric cooking appliances such as pizza ovens and deep fryers.*
- **Mercury-Sealed Pistons**
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- **Pharmaceuticals:** *Look for "mer" or "merc" in the name. Mercury is used as a preservative in some pharmaceutical products.*
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- **Rectifiers**
- **Ring Balances**
- **Semiconductors, Solar Cells, Thin Film Transistors, Infrared Detectors and Ultrasonic Amplifiers** *may contain mercury-cadmium-telluride, mercury-zelenide or mercury-telluride that can contaminate electroplating baths.*
- **Shunt Trips**
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- **Thermometers** *including industrial dial face thermometers with capillary tubes.*
- **Thermostats and Thermoregulators**
- **Wastewater Treatment Plant Pivot Arm Bearings**

The Industrial Chemical Connection

Widely used industrial chemicals such as caustic soda (sodium hydroxide) and sulfuric acid may contain mercury below the 10,000 parts per million (ppm) listing requirement for Material Safety Data Sheets but in concentrations high enough to affect the environment and municipal wastewater treatment plant regulatory requirements. The mercury content of caustic soda and sulfuric acid is dependent upon the chemical's manufacturing process. Caustic soda is produced by the electrolysis of salt brine using the porous-diaphragm process, ion-exchange membrane process or the mercury-cell process. Most caustic soda is produced with the diaphragm process. Approximately 13 percent of all caustic soda is produced by the mercury-cell process.

The mercury cell process uses mercury as a cathode. Caustic soda produced by the mercury-cell process can contain mercury in the hundreds of parts per billion range as a contaminant. Over one dozen chemical plants in the United States and in Mexico use the mercury-cell process. Other chemicals manufactured by the mercury-cell process include potassium hydroxide, chlorine, and muriatic acid. Mercury grade caustic soda is high-quality grade (low salt) and is more expensive than diaphragm-grade caustic. Typically, mercury grade caustic soda and membrane grade caustic soda (also high quality) are used for water conditioning for boilers, ion-exchange regeneration, synthesis process and other processes requiring low-salt caustic.

Sulfuric acid is sometimes produced as a secondary product of lead and copper smelting. Sulfuric acid produced as a byproduct of lead or copper smelting can contain mercury up to the tens of thousands parts per million range as a contaminant.

Although the mercury concentrations in these industrial chemicals may be relatively low, the mass of mercury reaching a wastewater treatment plant can be large. The amount of chemicals used, and the wastewater flow from the industry, determines the mercury loading. The mercury may be discharged from the wastewater treatment plant's effluent or the mercury captured in the wastewater treatment plant sludge may be released into the air if the sludge is incinerated. The City of Erie Wastewater Treatment Plant incinerates its sludge. Mercury released into the air can be deposited in the Great Lakes or other bodies of water.

Caustic soda users should evaluate their caustic uses and needs and determine if high-quality grade is necessary. Mercury levels in raw materials can vary depending upon the source. Sources for raw materials vary from one region of the country to another. Industries should specify low-mercury chemicals and request certificates of analysis from all chemical suppliers when purchasing materials. The certificate of analysis should list the mercury content in parts per billion (ppb), not as a percentage. A Material Safety Data Sheet is not the equivalent of a certificate of analysis.

The Energy Connection

Coal contains small amounts of naturally occurring mercury. Coal-fired power plants are a major source of mercury emissions that can ultimately be deposited in the Great Lakes and other bodies of water. Reducing demand for electric power means less mercury is emitted into the environment from power plants.

Understand your facilities electric use and implement an energy-efficiency program. Using energy efficient and reduced mercury fluorescent lamps instead of incandescent light bulbs are examples of ways to reduce energy use. DEP has a fluorescent lamp recycling pilot program that treats fluorescent lamps as a universal waste. For more information concerning the fluorescent lamp recycling program, energy efficiency or energy cost savings, please contact DEP at 814 332-6839.

Case Study

International Paper

Scott Newell, Environmental Engineer at International Paper's Erie Mill and a P^{3}ERIE steering committee member, completed an internal mercury audit at International Paper's Erie Mill. The mill is an integrated pulp and paper mill that employs approximately 950 people and produces over 300 tons of fine paper per day. The Erie Mill's wastewater discharge accounts for approximately one-fourth of the flow to the City of Erie Wastewater Treatment Plant (POTW). The first thing Scott did in his mercury audit was review the mill's record of mercury analysis for the mill influent to the POTW from 1992 to 1997. The influent to the POTW was analyzed by a local analytical laboratory to a detection level of 0.0001 mg/l. No mercury was detected. Scott also analyzed in-plant wastestreams from production areas with the highest potential for mercury content. These tests also showed mercury to be below the detection level. An inventory of the facility discovered two mercury manometers in the process line and elemental mercury at the mill's laboratory. The mercury manometers were removed and replaced with acceptable substitutes. The mercury-containing items and elemental mercury were recycled. Scott also checked the sources of caustic soda and acids used at the mill. The pulp and paper industry uses about 20 percent of the total United States production of caustic soda for pulping wood chip and other processes. International Paper's Erie Mill does not purchase any caustic soda made from the mercury-cell process or

any acids manufactured from sulfur ide captured from smelters.

Convinced of the importance of the MercERIE campaign, International P supported the project by internally announcing a mercury collection for public and businesses on Earth Day 1998. Scott Newell also participated local radio talk show in April 1998 to cuss the environmental problems as ated with mercury and International Paper's internal mercury audit. International Paper's mercury audit a zero mercury discharge demonstrat company's commitment to being an ronmental as well as industry leader International Paper's proactive appro to protecting Lake Erie from mercur vides an excellent model for all busi es and institutions to follow.

Sample Letter Requesting a Certificate of Analysis for Industrial Chemicals

Mary Smith
Director of Sales
XYZ Industrial Chemicals
30 Caustic Drive
Niagara Falls, NY 55555

Subject: Certificate of Analysis

Dear Ms. Smith:

Mercury is ever increasingly becoming a concern as an environmental pollutant. Mercury released from air and water sources is transformed into methylmercury in lakes or rivers. The methylmercury bioaccumulates in the aquatic food chain making consumption of contaminated fish hazardous to organisms high on the food chain, including humans.

Because of this knowledge, and our concern for the environment, our institution has instituted a mercury reduction policy. This policy requires the elimination or minimization of mercury in all our purchases. Low-level concentrations of mercury in products (less than 10,000 ppm) are not required to be listed on Material Safety Data Sheets. The contribution from the sum of these low-concentration sources account for a large fraction of the mercury in the wastewater stream. In order for our purchasing department to be able to make an informed choice on mercury concentration within the products that it buys, we are requesting that all vendors supply us with a certificate of analysis and/or a notarized affidavit which describes product mercury concentration and the detection method used in the analysis. This information will be used along with other criteria in the selection process of our vendors.

Please submit the above mentioned information on all products that you intend to supply our institution. Thank you for your assistance in this matter.

Sincerely,

John Doe
Purchasing
Acme Manufacturing

Sample Certificate of Analysis

ABC Acids
30 Smelter Drive
Newark, NJ 55554

Customer: Acme Manufacturing

Product Grade: Sulfuric Acid 93%
B/L Number: 00008650
Customer P.O No.: C125062
Routing:
Tank Car/Tank Truck No.: UTLX 125021

Shipment Date: 12/7/97
Quantity: 100,400 Tons

The analysis below is representative of the quality of product loaded into the above shipment.

Parameter	Analysis	Specification
Strength (% H2S04)	93.67	93.19 MIN
Color (HU)	11	40 MAX
Iron (ppm Fe)	9	50 MAX
Sulfur Dioxide (ppm S02)	10	50 MAX
Appearance (%T)	100	
Oxides of Nitrogen (ppm N03)	1	10 MAX
POM (ml 0.02 KMn04	1.00	10 MAX
Mercury (ppm Hg)	0.060	

Analyst: Joe Jones

P3ERIE "A Partnership for Greater Erie"
consists of:

Department of Environmental Protection
www.dep.state.pa.us

Erie County Recycling Program
Erie County Health Department

Erie County Dental Association

GANNON UNIVERSITY

GE Transportation Systems

Hamot

INTERNATIONAL PAPER

PENNSTATE Erie

Sea Grant Pennsylvania

Strong Vincent High School
Erie City School District

Wastewater Treatment Plant

INFORM
Strategies for a
better environment

120 Wall Street, 16th Floor
New York, NY 10005-4001

212 361-2400 Fax 212 361-2412
www.informinc.org

Purchasing for Pollution Prevention

Mercury-Free Industrial Thermometers, Manometers, Thermostats, and Switches Fact Sheet

Mercury-containing switches and gauges are used in facilities from cold rooms to power plants and in equipment from kitchen devices to boilers. For most applications, mercury-free alternatives are readily available and cost-competitive. By removing mercury-containing products from their purchasing contracts and specifying non-mercury alternatives, agencies at all levels of government can reduce their liability and hazardous waste disposal costs and support the market for mercury-free products. For information on suppliers of HVAC and other building equipment without mercury components, see Specifying and Sourcing Mercury-Free HVAC and Building Equipment at http://www.informinc.org/fact_P3hvac.php.

Why should governments buy mercury-free equipment and supplies?

In many mercury-containing devices the mercury is contained, but glass mercury thermometers can easily break and mercury manometers (pressure gauges) can easily spill, releasing mercury to the environment. In addition, mercury-containing devices are often improperly disposed of at end of life, resulting in mercury emissions from trash incinerators and landfills.

Mercury-free industrial thermometers

Industrial thermometers are used in power plants, water treatment plants, and refrigeration units, among many other applications. Some thermometers bought by state agencies are replacement parts for existing equipment. Numerous types of non-mercury alternatives are available, including bimetal thermometers with dial displays and electronic models with digital displays. Mineral spirit thermometers (which often resemble glass mercury thermometers) are also available, but should be avoided because the filling may be flammable and toxic.

- **Performance**. Available mercury-free thermometers meet a variety of accuracy requirements -- and can be as accurate, or more accurate, than mercury models. When choosing a new thermometer, buyers should specify the temperature range and accuracy requirements of the application, so vendors will be able to help them select the appropriate non-mercury model.
- **Price.** As of 2001, the price of a mercury-free industrial thermometer ranged from a few dollars to $100. Mercury-containing industrial thermometers generally range from $15 to more than $60. Depending on the application, buyers should be able to find a non-mercury thermometer with similar performance qualities for the same price or cheaper than a comparable mercury thermometer.

Mercury-free manometers (pressure gauges)

Manometers (devices that measure pressure) are used in power plants, gas and water delivery systems, and other applications. There are two principal types: digital manometers and tube manometers, which consist of a tube with markings designating the pressure values. Tube manometers can be filled with mercury, water, or mineral spirits. Any device that requires users to handle elemental mercury creates a high risk of mercury spills and exposure. Care should also be taken when using mineral spirits, which may be flammable and toxic.

- **Performance**. For most applications, tube manometers filled with mineral spirits or water meet the same needs as mercury devices with equal or better accuracy. However, there is one exception: unlike some mercury-filled manometers, water and mineral spirit models cannot measure extremely high pressures. Thus, government agencies using manometers for applications in which very high pressure values are measured may find that only digital models can replace their mercury-filled tube manometers.

For more information contact Cameron S. Lory, Research Associate, 212-361-2400 x232, lory@informinc.org

- **PRICE.** As of 2001, tube manometers ranged in price from $25 to $60 (mercury-filled models are slightly more expensive than non-mercury models because the mercury has to purchased separately). Digital manometers started at just over $200. Thus, for most applications, water- or mineral spirit-filled manometers cost the same or less than their mercury-filled equivalents. Government agencies wishing to replace mercury manometers in high-pressure applications may have to pay 10 times more for digital models. However, because they have such a high degree of accuracy, digital manometers may already be the devices of choice in these applications.

Mercury-free thermostats

Thermostats are used to control the temperature not only in buildings, but also in equipment, cold rooms, water treatment facilities, and other locations. Digital and electromechanical alternatives are available.

- **PERFORMANCE.** Both digital and electromechanical thermostats can be as accurate or more accurate than mercury devices.
- **PRICE.** Depending on the application, mercury-free thermostats may be cheaper than their mercury equivalents. In 2001, the price of a non-mercury building thermostat ranged from approximately $16 to $34, while mercury thermostats cost from $25 to $35.

Mercury-free switches

On/off switches and internal switches used in various types of equipment may contain mercury. Switches in industrial boilers may contain pounds of mercury, whereas small switches in old kitchen blenders may contain just a few grams. Most switches purchased by government agencies are replacements for faulty devices in existing equipment. The type of switch that can be used depends on the specific equipment, and some may require continued use of mercury devices. In that case, the buyer should clearly label the equipment so the mercury switch can be removed and recycled when the equipment is taken out of service (and replaced with equipment in which mercury-free switches can be used).

- **PERFORMANCE.** Some manufacturers claim that mercury switches are more reliable than non-mercury alternatives. However, INFORM has not been able to confirm or refute this claim. Reliability may depend on the equipment and type of switch, but it is important to follow manufacturer recommendations when replacing switches so as not to void warranties or damage equipment.
- **PRICE.** The cost of switches varies greatly depending on size and type. In 2001, mercury relay switches ranged in price from less than $45 to more than $185, and non-mercury relay switches ranged from $10 to $200. It is likely that a mercury-free replacement switch will be in the same price range as an equivalent mercury switch.

Recommended specifications

- *Contractors must not sell thermometers, thermostats, or manometers containing mercury unless no mercury-free device meets the needs of the purchasing agency.*

If the government has a contract in place for mercury device recycling:

- *Contractors must, upon the purchase of any item known to contain mercury, advise purchasers that mercury items must be disposed of properly, and include relevant information on appropriate [government] contracts for the collection and recycling of mercury items. Contractors must submit for approval a plan detailing how they will notify purchasers of the appropriate [government] contract and disposal information as stated above.*

If other mercury items (such as switches) are still available on this contract:

- *Contractors must agree to work with the [government] at any time during the contract term to otherwise limit or eliminate the sale of mercury-containing products or other toxic products based on mutual agreement between the PMT and the contractor.*
- *Contractors must report on a [quarterly] basis all products sold through this contract known to contain mercury.*

For more information contact Cameron S. Lory, Research Associate, 212-361-2400 x232, lory@informinc.org

Environmentally Preferable Purchasing:
A Getting Started Guide

Mercury & Fluorescent Lamps

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Strategies for a
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Purchasing for Pollution Prevention

Mercury Disclosure Requirements and the New Jersey Lamp Contract

For more information on mercury in lamps, see http://www.informinc.org/fact_P3mercury_lamps.php.

New Jersey required vendors to disclose the amount of mercury in the mercury-containing lamps sold on its 2002 and 2003 contracts for incandescent, HID, and fluorescent lamps (contract T-1092).

For the entire text of the 2003 bid document (not including price lines) for contract T-0192, see http://www.informinc.org/2003contractlang.txt. For the entire 2003 contract announcement, see http://www.state.nj.us/treasury/purchase/noa/contracts/t0192.shtml.

Mercury Disclosure Language Used In New Jersey's 2003 Contract T-0192: Lamps, Incandescent, HID, Fluorescent, Including Low Mercury

New Jersey used the following language in its May 2003 lamp bid document. See the entire bid document at http://www. informinc.org/2003contractlang.txt.

Bidders must disclose the amount of mercury, in milligrams, for each mercury-added product bid. Space is provided on the pricing page for mercury content disclosure. Mercury-added products shall be defined as any device to which elemental mercury or mercury compounds are intentionally added.

Contractors may not promote to facility employees the disposal of mercury-containing lamps as non-hazardous waste, even if the lamps are legally designated as non-hazardous waste in this state. Contractors must instead promote the recycling of all mercury-containing lamps.

Contract Announcement Mercury Language for New Jersey's 2003 Contract T-0192: Lamps, Incandescent, HID, Fluorescent, Including Low Mercury

New Jersey used the following language to inform contract users regarding mercury in lamps. The full contract announcement is at http://www.state.nj.us/treasury/purchase/noa/contracts/t0192.shtml.

When lamps break or are landfilled or incinerated with solid waste, mercury is released to our air and water, increasing the risk of exposure to humans and wildlife that eat contaminated fish. The US Environmental Protection Agency and Food and Drug Administration have warned children and women of childbearing age in all 50 states not to eat species of fish known to be contaminated with mercury.

"Low mercury" fluorescent tubes, offered by all of the major lighting manufacturers, are rated by manufacturers to last as long as "full dose mercury" lamps.

It is illegal to dispose of most end of life fluorescent and HID lamps in the trash.

All broken mercury containing lamps are hazardous waste, and must be disposed of properly.

Recommendations for lamp requesters:

In accordance with the recommendations of the New Jersey mercury pollution task force, a stakeholder group convened by the Department Of Environmental Protection, the Purchase Bureau urges state agencies and agencies and departments using this contract under cooperative purchasing agreements to:

Purchase "low-mercury" fluorescent tubes, compact fluorescent, and high-pressure sodium lamps.

Mercury Content Information Available for Lamps on the 2003 New Jersey Contract T-0192

The information in the following table is taken directly from the contract announcement. **Some mercury-added lamps available through the contract are not listed here.** For more information, see the contract announcement at http://www.state.nj.us/treasury/purchase/noa/contracts/t0192.shtml or contact the vendors directly.

Brand	Type	Length (inches)	Watts	Other Information	Mercury (mg)	Vendor	Line	Commodity Code Number	Unit Price
Philips	T12	48	34	12 volt flood light	4.4	Billows	00001	285-50-052398	$0.54
Philips	T12	24	35	Fluorescent low-mercury T12 straight	15	Billows	00047	285-50-045423	$1.65
Sylvania	T8	10.5	16	Fluorescent T8 lamp 1 5/8 U-bent	6-9	Cooper	00039	285-50-045135	$5.20
GE	CFL*	6.06	18	Compact fluorescent 4-pin EOL	11- 30	Graybar	00028	285-50-052438	$1.17
GE	T12	48	40	Med bi-pin black	11-30	Graybar	00043	285-50-052452	$5.77
GE	T12	22.5	40	Med bi-pin 3 5/8 spacing	11-30	Graybar	00044	285-50-052453	$2.71
GE	T12	60	50	Fluorescent low-mercury	11-30	Graybar	00045	285-50-045140	$0.1
GE	HID	5.5	50	Metal halide lamp low-mercury, med base	11-30	Graybar	00053	285-50-045355	$10.00
GE	HID	30.5	135	Low-pressure sodium lamps, T21, BY22d base	7-10	Graybar	00064	285-50-045358	$12.86
Sylvania	T8	24	25	Med bi-pin linear fluorescent	7-10	Griffith	00008	285-50-052412	$1.43
Sylvania	CFL	6.8	26	PL-C cluster 2-pin	13-18	Griffith	00020	285-50-052428	$2.99
Sylvania	CFL	5.5	15	Self-ballasted CFL with med screw base	2-4	Griffith	00027	285-50-052437	$5.08
Sylvania	T8	24	17	Linear fluorescent	7-10	Griffith	00029	28-50-052439	$1.43
Sylvania	CFL	5.8	18	Dimmable, 4-pin base, double tube	2-4	Griffith	00050	28-50-045669	$2.99
Sylvania	CFL	5.125	15	Spiral CFL with med screw base	10-14	Griffith	00075	285-50-052407	$4.47
Sylvania	CFL	5.5	20	Spiral CFL with med screw base	10-14	Griffith	00078	285-50-052408	$4.47
Philips	CFL	7	13	Short fluorescent, 2GX7 base	1.4	Hughes	00026	285-50052436	$0.95
Philips	Circ. T9	8.25	22	4-pin circular fluorescent	15	Hughes	00038	285-50-052448	$1.15
Sylvania	CFL	5.125	15	Spiral CFL with med screw base	10-15	Jewel	00003	285-50-052448	$4.65
Lumenarc	HID	n/a	70	Metal halide	8	Lumenarc	00054	285-50-045355	$10.97
Lumenarc	HID	n/a	100	Metal halide	8	Lumenarc	00055	285-50-045355	$10.97
Lumenarc	HID	n/a	400	High-pressure sodium lamp	3-4	Lumenarc	00060	285-50-052397	$7.79
Lumenarc	HID	n/a	75	Mercury vapor	8	Lumenarc	00077	285-50-052424	$7.97
Lumenarc	HID	n/a		Metal halide, med base	8	Lumenarc	00078	285-50-052425	$14.97
GE†	T12	48	40	Linear fluorescent	11-30	Rahway	00004	285-50-052404	$2.10
GE†	T12	48	40	Linear fluorescent with G13 base	11-30	Rahway	00012	285-50-052416	$3.10
GE	Circ. T9	12	32	4-pin circular fluorescent	11-30	Rahway	00019	285-50-052423	$1.05

Continued: **Mercury Content Information Available for Lamps on the 2003 New Jersey Contract T-0192**

Brand	Type	Length (inches)	Watts	Other Information	Mercury (mg)	Vendor	Line	Commodity Code Number	Unit Price
GE†	CFL	7	13	Biax CFL with GX23 base	11-30	Rahway	00023	285-50-052431	$0.72
GE†	HID	3.156	250	T type quartzline halogen with mini-cand base	1-10	Rahway	00052	285-50-052490	$2.75
GE†	Incand	2.62	15	Incandescent lamp with SC bay base	1-10	Rahway	00070	285-50-052392	$1.71
Sylvania	T8	24	17	Linear fluorescent with med bi-pin base	7-10	Regency	00007	285-50-052411	$1.43
Sylvania	T8	48	32	Linear fluorescent with med bi-pin base	7-10	Regency	00033	285-50-052443	$1.42
Sylvania	T8	48	32	Linear fluorescent with med bi-pin base	7-10	Regency	00034	285-50-052444	$1.42
Sylvania	T8	22.5	31	U-bent fluorescent with med bi-pin base	6-9	Regency	00036	285-50-052446	$5.19
Sylvania	T8	22.5	31	U-bent fluorescent with med bi-pin base	6-9	Regency	00037	285-50-052447	$5.19
Philips	CFL	7	13	Compact fluorescent black light	5.5	TAB	00005	285-50-052409	$0.841
Philips	T8	18	15	Linear fluorescent	1.4	TAB	00006	285-50-052410	$0.696
Philips	T12	36	30	Linear fluorescent with med bi-pin base	3.5	TAB	00009	285-50-052413	$0.883
Philips	T12	48	34	Linear fluorescent with med bi-pin base	4.4	TAB	00011	285-50-052415	$0.55
Philips	CFL	n/a	7	Compact fluorescent	5.5	TAB	00013	285-50-052417	$0.789
Philips	T12	96	60	Linear fluorescent with med bi-pin base	6.8	TAB	00014	285-50-052418	$1.174
Philips	T12	22.5	34	U-bent fluorescent	4.4	TAB	00016	285-50-052420	$1.89
Philips	T12	22.5	40	U-bent fluorescent	4.4	TAB	00017	285-50-052421	$1.984
Philips	T12	22.5	34	U-bent fluorescent	4.4	TAB	00018	285-50-052422	$1.984
Philips	CFL	n/a	7	Short fluorescent	5.5	TAB	00024	285-50-052432	$0.789
Philips	CFL	n/a	9	Short fluorescent	5.5	TAB	00025	285-50-052433	$0.789
Philips	T8	36	25	Linear fluorescent with med bi-pin base	3.5	TAB	00030	285-50-052440	$1.766
Philips	T8	48	32	Linear fluorescent with med bi-pin base	3.5	TAB	00031	285-50-052441	$1.09
Philips	T8	48	32	Linear fluorescent with med bi-pin base	3.5	TAB	00032	285-50-052442	$1.09
Philips	T8	48	32	Linear fluorescent with med bi-pin base	4.4	TAB	00035	285-50-052445	$0.55
Philips	T12	36	30	Linear fluorescent with med bi-pin base	3.5	TAB	00046	285-50-045422	$0.883
Philips	T12	22.5	34	U-bent fluorescent with med bi-pin base	4.4	TAB	00048	285-50-045350	$1.89
Philips	T12	22.5	40	U-bent fluorescent with med bi-pin base	4.4	TAB	00049	285-50-045351	$1.984
Philips	HID	8 5/16	250	Metal halide with mog. base	34	TAB	00056	285-50-045355	$7.605
Philips	HID	11.5	400	Metal halide with mog. base	49.5	TAB	00057	285-50-045355	$7.221
Philips	HID	15 3/8	1000	Metal halide with mog. base	154	TAB	00058	285-50-045355	$17.44
Philips	HID	5 7/16	70	Low-pressure sodium, medium base	15.7	TAB	00062	285-50-052406	$7.221
Philips	HID	15 3/8	1000	Metal halide with mog. base	154	TAB	00072	285-50-052454	$17.35
Philips	HID	8 5/16	175	Metal halide with mog. base	25.75	TAB	00079	285-50-052426	$6.732
Philips	HID	8 5/16	250	Metal halide with mog. base	34	TAB	00080	285-50-052427	$7.605
Philips	HID	44 1/8	180	Low-pressure sodium with DC bay base		TAB	00063	285-50-045357	$20.00

For more information on mercury in fluorescent lamps, see http://www.informinc.org/fact_P3mercury_lamps.php
or contact Cameron S. Lory, Research Associate, 212-361-2400 x232, lory@informinc.org

Continued: **Mercury Content Information Available for Lamps on the 2003 New Jersey Contract T-0192**

Brand	Type	Length (inches)	Watts	Other Information	Mercury (mg)	Vendor	Line	Commodity Code Number	Unit Price
Philips	CFL	22 1/2	38	Long Fluorescent with 4-pin base	4.4	Warshauer	00022	285-50-052450	$3.73
Philips	T5	22.6	40	Fluorescent	1.4	Warshauer	00041	285-50-052450	$3.73

* Compact fluorescent
† Descriptions incompatible with item numbers

Mercury Content Information Available for Lamps on the 2002 New Jersey Contract T-0192

Brand	Type	Length (inches)	Watts	Other Information	Mercury (mg)	Vendor	Line	Commodity Code Number	Unit Price
Philips	T8	48	32	PG 27 med bi-pin low-mercury	3.5	Billows	00002	285-50-045134	$1.07
GE	T12	60	50	P/L 9001	31-60*	Graybar	00010	285-50-045140	$0.25
GE	T12	22.5	34	Med bi-pin 6 leg U-bent low-mercury	31-60*	Graybar	00014	285-50-045350	$0.88
GE	T12	22.5	40	Med bi-pin 6 leg U-bent low-mercury	60	Graybar	00015	285-50-045351	$0.88
Sylvania	T8	24	17	Straight med bi-pin 6" leg	10	Griffith	00004	285-50-045366	$1.47
Sylvania	T8	22.5	32	U-bent med bi-pin	10	Griffith	00008	285-50-045136	$3.51
Sylvania	T4	6	18	Dimming tube lamp compact quad	10	Griffith	00018	285-50-045669	$3.20
Sylvania	T8	36	25	Straight med bi-pin	5.1-9.8†	Jewel	00003	285-50-045365	$1.50
Sylvania	T8	10.5	16	1 5/8" U-bent med bi-pin	5.1-9.8†	Jewel	00005	285-50-045135	$5.25
Sylvania	T8	16.5	24	1 5/8" U-bent med bi-pin	5.1-9.8†	Jewel	00006	285-50-045368	$6.48
Sylvania	T8	22.5	31	1 5/8 U-bent med bi-pin	25	Jewel	00007	285-50-045369	$4.90
None	T12	48	40	Low-mercury straight med bi-pin	<10	Rexel	00011	285-50-045421	$0.56
Philips	T12	36	30	Low-mercury straight	3.5	Tab	00012	285-50-045422	$0.884
Philips	T8	60	40	Low-mercury straight med bi-pin	3.5	Turtle	00001	285-50-045364	$1.75
GE	T12	24	35	Low-mercury straight	<10	Grainger	00013	285-50-045423	$0.80
Philips	T5	22.6	40	High-lumen twin		Warshauer	00019	285-50-045670	$3.80

*Although the New Jersey Notice of Award states that these lamps contain 0.31 to 0.60 mg mercury, Patrick McHugh of Graybar Electric (the vendor) told INFORM on February 13, 2003, that these lamps actually contain 31 to 60 mg of mercury.
† For some styles, the mercury content may average as little as 5.1 mg plus or minus 30 percent, the equivalent of 3.6 mg to 6.6 mg. For other styles, the mercury may average as much as 7.5 plus or minus 30 percent, the equivalent of 5.3 to 9.8 mg. Personal communication, Robert Kilroy, Jewel Electric Supply Company, February 20, 2003.

For more information on mercury in fluorescent lamps, see http://www.informinc.org/fact_P3mercury_lamps.php
or contact Cameron S. Lory, Research Associate, 212-361-2400 x232, lory@informinc.org

Recommended Specification For Lamp Purchasing Contracts

Actual specifications used by a state government

Massachusetts has restricted the sale of mercury manometers, thermometers, and thermostats on its Industrial Supplies contract, permitting their purchase only when no non-mercury-containing alternative is available that can meet the needs of the purchasing agency.

- Massachusetts' specification: ftp://ftp.comm-pass.com/Data/0133800001.pdf (Mercury section on page 12)
- Other documents related to this contract: http://www.comm-pass.com/Comm-PASS/Scripts/xdoc_view.idc?doc_id=013380&dept_code=cp_xx=

For more information:

- Information from the US Environmental Protection Agency on thermostats, thermometers, manometers, switches, and other devices containing mercury: http://www.epa.gov/glnpo/p2/mercpam.html
- An EPA tutorial, "Mercury in Buildings": http://abe.www.ecn.purdue.edu/~mercury/src/title.htm
- INFORM fact sheet listing products that contain mercury, alternatives, and sources of additional information: http://www.informinc.org/fsmercalts.pdf

For more information contact Cameron S. Lory, Research Associate, 212-361-2400 x232, lory@informinc.org

Fluorescent Lamp Recycling: 10 Steps to a Successful Program

A Factsheet of the Hospitals for a Healthy Environment (H2E) Program

Hospitals operate all day, every day, year round. Fluorescent lamps can help hospitals significantly reduce their energy consumption. They use one quarter the energy of incandescent lamps and last as much as ten times longer. However, fluorescent lamps contain the toxic element mercury. When broken or improperly disposed of, fluorescent lamps may release mercury into the air, water and soil, and thus pose a threat to human health and the environment.

While fluorescent lamps offer tremendous environmental advantages through energy savings, the disposal of used fluorescent lighting raises serious environmental concerns. Recycling spent mercury-containing lamps offers an environmentally sound alternative to expensive hazardous waste disposal. Reducing mercury emissions by recycling used fluorescent lamps is a good way to eliminate mercury, as well as reduce waste and toxic materials. To help you get started, H2E recommends the following 10-step process:

Step 1: Assess Your Facility

Completing a facility assessment is a fundamental step in launching your program. Gathering the appropriate information will help you measure dollar savings over time. Answer the following questions to assess your situation:

- How many fluorescent lamps are in your facility? Where are they located?
- How often do you change your fluorescent lamps?
- How many fluorescent lamps are you disposing of each month? Each year?
- What type of fluorescent lamps are you purchasing? Are they highly energy efficient lamps?
- How are you handling and storing the spent lamps?
- Do all employees know what to do when a fluorescent light bulb burns out or breaks?
- Are you in compliance with local, state and federal hazardous waste regulations?

Step 2: Develop a Purchasing Plan

What type of lamps are you purchasing? Ideally you should purchase lamps that are both highly efficient and have low mercury content. It is important to buy high efficiency bulbs (longer lamp life) because they do not need to be replaced as often, save labor and recycling costs, and use less energy. Energy-efficiency is key not only in saving energy costs, but also because most hospitals derive their electric power from coal-fired power plants, which are the leading source of mercury to air, as mercury is a byproduct of burning coal.

Step 3: Select a Recycler

Currently, there are more than 40 lamp-recycling companies in the US.

- Audit your vendor. Make sure their permits, recycling technologies, transportation operations, and bookkeeping practices meet all state and federal regulations as well as fit your lamp recycling needs.
- Ask about what processes they use to reclaim the mercury and whether they retort (reclaim) the mercury on-site or whether they ship it to another contractor for processing. Some recyclers may charge extra if they ship it off site. Also ask if they accept broken lamps (most do).
- Prices vary, depending on quantities and whether transportation is included. Compare prices and call several different recyclers to get price estimates for your facility.
- Some recyclers also manage other universal wastes such as batteries. Ask the vendors what other services they provide.

Tools

List of Mercury Recyclers:

- H2E (www.h2eonline.org/tools/hg-recy.htm)
- National Electrical Manufacturer's Association (NEMA) (www.nema.org/lamprecycle/recyclers.html)

Pub 2-11 This publication is part of *Going Green: A Resource Kit for Pollution Prevention in Health Care.* For additional copies of this or other publications included in the kit, or to find out how to get a complete kit, visit Health Care Without Harm on the Web at www.noharm.org.
This version: December 18, 2002

Step 4: Establish a Process for Managing Used Lamps

- Designate an area within your facility to store lamps. Bigger facilities may need more than one location for easier access.
- Make sure employees know whom to call if they see that a lamp is burned out.
- Consider relamping areas in bulk. Rather than replacing individual lamps when they fail, relamp entire rooms or floors at the same time. This will permit easier collection and shipping of lamps to a recycling facility. But make sure you're getting the maximum amount of life from the lamps in the area before you relamp.

Step 5: Safely Handle and Store Spent Lamps

Prevent exposure, save money disposing of higher-cost broken lamps and prevent breakage by storing and packing lamps safely.

- Storage Option 1: Put used lamps in original boxes, with no packing material. Make sure you completely seal the box to prevent leaks from bulb breakage. If you are combining used lamps with new ones, mark the used with a piece of tape or a permanent marker (be sure tape or marker is located next to receptacle).
- Storage Option 2: You can also purchase specially made lamp containers for used lamp storage. These containers are often reusable, very durable and won't tip over easily. Your lamp recycler may have a container that they like to use to make shipping or pick-up easier.
- Never leave spent lamps unattended or in a compromising position (leaning against a wall or in an area where they can be easily broken).
- Do not tape lamps together.
- Store boxes/containers in a dry place.
- Remember: Lamps contain mercury and are therefore technically still hazardous waste, despite their exemption under the Universal Waste Rule. Follow OSHA regulations.
- Although some states still allow certain low mercury fluorescent lamps to be landfilled, H2E discourages this practice, as even small amounts of mercury in the environment can have a significant impact. All mercury-containing fluorescent lamps should be sent for recycling.
- If possible, stack boxes/containers neatly on pallets and shrink-wrap them.
- Clearly identify containers of used lamps. For example, "used fluorescent lamps for recycling." and the accumulation start date. You cannot store the used bulbs for longer than one year.

Step 6: Properly Manage Broken Lamps

- Create procedures for reporting and managing broken tubes.
- Protect lamps from breakage. Remove lamps carefully and store used lamps in a location and manner that will prevent breakage. Some lamp recyclers will supply boxes for storage. Never break or crush lamps to consolidate, because mercury will be released.
- If lamps are accidentally broken, isolate the area and call for proper clean-up. For accidental releases, use the resources at http://www.epa.gov/epahome/emergenc.htm for more information on handling tube breakage.
- Keep broken lamps in a secure location away from patients and staff, separate from the intact tubes.
- Remember that recyclers will take broken tubes as well. Just because a tube breaks does not mean it can't be recycled so DO NOT throw them in the trash.
- Remember: Lamps contain mercury and may present health hazards, even if they are not managed as hazardous waste. Follow OSHA regulations.

Step 7: Get Lamps to the Recycler

- To recycle lamps, there are several options. Small quantity generators may actually mail-in lamps but most hospitals generate a larger quantity than is practical for mailing. Most recyclers that accept mail-in lamps will provide 4-foot or 8-foot containers that you can send via UPS.
- To transport lamps in states that have adopted the Universal Waste Rule, a bill of lading and a label with "Used Lamp(s)" on the outside of the container is required. See http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm for more information on the Universal Waste Rule (also see 40 CFR 273).

Step 8: Educate Employees

- Inform your employees about the dangers of mercury in fluorescent lamps and of your decision to recycle all fluorescent lamps. This effort is key to reducing mercury-containing waste in your facility and contributes to H2E's goal to virtually eliminate mercury-containing waste by 2005.
- All employees and contractors should be properly educated and trained to handle and "dispose/recycle" fluorescent lamps to minimize accidental disposal into the landfill or hazardous materials wastestream. Remember: fluorescent lamps are not labeled hazardous waste if they are recycled.

Step 9: Record and Track Data

The best way to establish and gauge success of your fluorescent lamp recycling program is to keep track of how many containers you ship for recycling and how many lamps are in each container.

- Each month ask for paper work from your recycler to find out how many of your lamps they retorted and how much mercury they reclaimed and how much it costs. Use this data to demonstrate good compliance and a successful program to management.
- Success in lamp recycling is simple to attain. If you're recycling all your lamps, you are successfully preventing mercury from entering into and damaging the environment AND you're avoiding the costs and hassle of hazardous waste rules and regulations.

Step 10: Problems? Use the Resources Available to You

- Contact H2E for helpful tips: h2e@hcwh.org, 1-800-727-4179
- Use the H2E website, www.h2e-online.org for helpful tips.
- Use the H2E listserv to find out what other H2E Partners are doing to recycle their fluorescent lamps.
- Ask your recycling vendor.
- Ask local, state and federal environmental officials.
- For accidental releases, use the resources at http://www.epa.gov/epahome/emergenc.htm
- For more information on the Universal Waste Rule, go http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm.

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This publication is part of *Going Green: A Resource Kit for Pollution Prevention in Health Care*. For additional copies of this or other publications included in the kit, or to find out how to get a complete kit, visit Health Care Without Harm on the Web at www.noharm.org.

King County
Administrative Policies and Procedures

Executive Orders, Policies and Procedures

Title: Mercury-Containing Lamp Recycling

Document Code No.: PUT 7-3 (AEP)
Department/Issuing Agency: Department of Natural Resources and Parks
Effective Date: April 24, 2003
Approved: /s/ Ron Sims
Type of Action: New
Key Words: Fluorescent, Lamp, Mercury

1.0 SUBJECT TITLE: Mercury-Containing Lamp Recycling

2.0 PURPOSE: The Mercury-Containing Lamp Recycling Policy establishes Executive Policy to comply with federal, state and local disposal rules regarding mercury-containing lamps generated by King County agencies. The policy requires all County facilities to recycle mercury-containing lamps, such as fluorescents, as required by federal and state law.

3.0 ORGANIZATIONS AFFECTED: Applicable to all Executive Departments and Offices.

4.0 REFERENCES:

4.1 U.S. EPA: Hazardous Waste Management System; Modification of the Hazardous Waste Program; Hazardous Waste Lamps; Final Rule - July 6, 1999 40 CFR Part 273.

4.2 Washington Department of Ecology Universal Waste Rule for Dangerous Waste Lamps - WAC 173-303-573.

4.3 King County's Waste Acceptance Rules PUT 7.1.4.

4.4 King County's Environmental Purchasing Policy - CON 7-1-2 AEP.

4.5 "Mercury in King County," The Local Hazardous Waste Management Program in King County, November 2002.

5.0 DEFINITIONS

5.1 **"Lamp"** refers to any mercury-containing lighting device listed under the Universal Waste Rule, including straight fluorescent tubes of any length, compact fluorescent lamps, U-tubes, circular tubes, high-intensity discharge lamps, high-pressure sodium lamps, metal halide and mercury vapor lamps. It also includes "low-mercury" lamps, "green tips" or lamps containing mercury with binding additives.

5.2 **"Recycle"** means to arrange pick-up, drop-off or mail-in of intact lamps with a qualified recycler, or a qualified hauler who works with a recycler, so the lamps can be separated into their component materials (glass, metal, phosphor powder and mercury) for reuse or recycling.

5.3 **"Generator"** refers to any County office or facility that uses mercury-containing lamps and generates burned-out lamps, whether or not the office or facility owns the property or leases from a third party.

5.4 **"The rule"** refers to the Universal Waste Rule for Dangerous Waste Lamps adopted by the Washington Department of Ecology in 2000.

5.5 **"LHWMP"** refers to the Local Hazardous Waste Management Program in King County, a cooperative effort by local government, including the King County Water and Land Resources Division, King County Solid Waste Division, Public Health – Seattle & King County, Seattle Public Utilities and the Suburban Cities Association.

5.6 **"Qualified lamp recycler"** " refers to lamp recycling firms and their licensed transporters that comply with all federal, state, and local laws and county and city ordinances. See Appendix A.

6.0 POLICIES:

All King County departments, offices and agencies shall establish procedures to ensure that mercury-containing lamps from their facilities are collected, stored and recycled safely in keeping with the Washington State Universal Waste Rule for Dangerous Waste Lamps WAC 173-303-573. King County departments, offices and agencies shall dispose of all spent mercury-containing lamps from all facilities owned, managed or occupied by King County by sending them to a qualified lamp recycler. Spent lamps from County facilities shall not go into the garbage, dumpster or trash compactor.

7.0 PROCEDURES:

Action By: All Executive Departments and Offices

Action:

7.1 Establish systems to collect, handle and store all quantities of mercury-containing lamps for recycling.

7.2 Arrange recycling services with a qualified lamp recycler, establishing contracts as needed to ensure service.

7.3 Establish recycling contracts according to standard purchasing policies and procedures, found here (under Finance, Procurement and Contract Services).

Note: At the time of adoption of this policy, recycling 2,000 four-foot tubes cost an estimated $400 - $480 plus hauling charges.

7.4 Obtain from the lamp recycler evidence of final recycling or destruction of all lamp waste, including a Certificate of Recycling.

7.5 For King County offices leasing from a third party, facility staff shall work with property management to establish systems to collect, handle and store all quantities of mercury-containing lamps for recycling and arrange recycling services with a qualified recycler, obtaining the recycling firm's proof of recycling from the property manager or owner.

Action By: King County Procurement and Contract Services Section

Action:

7.6 In response to requests from King County facilities, maintain access to a competitive contract with a qualified lamp recycling firm, which will pick up and recycle a broad range of lamp models.

Note: At the time of adoption of this policy, the King County Procurement and Contract Services Section held access to a contract with Ecolights Northwest (Seattle) to recycle lamp waste; future contracts may be with different vendors.

Action By: King County Department of Natural Resources and Parks, Water and Land Resources Division, Hazardous Waste Section.

Action:

7.7 Upon request, provide free technical assistance and site visits to King County facilities and their property managers requesting help setting up lamp recycling systems.

7.8 Provide educational resources to educate County agencies and their property managers about the Lamp Recycling rule.

Note: Facilities and property managers can call the LHWMP Business Waste Line at 206-296-3976. For a comprehensive list of lamp recyclers and guidance on the rule, please click here

8.0 RESPONSIBILITIES:

8.1 All Executive Departments and Offices: Comply with federal, state and local rules regarding mercury-containing lamp disposal and establish safe systems to collect, handle, store and recycle mercury-containing lamps in a cost-effective manner. Train staff to implement systems. Contract with a qualified lamp recycler to pick up or receive spent lamps.

8.2 Division Managers, All Departments and Offices: Notify all appropriate personnel and facility managers within your division about the Lamp Recycling rule and this Executive Policy.

8.3 King County Procurement and Contract Services Section: In response to requests by King County agencies, maintain access to a competitive contract with a qualified lamp recycling company.

8.4 King County Department of Natural Resources and Parks/Water and Land Resources Division, Hazardous Waste Section: Provide technical assistance, upon request, to King County offices establishing lamp recycling systems or working with third-party property managers to do so. Provide educational resources to educate County agencies about the Lamp Recycling rule.

9.0 APPENDICES:

Appendix "A" - Qualified Lamp Recyclers for King County Facilities

Updated: April 25, 2003

OSD Update

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

03-12

To: Departments Heads, Affirmative Market Coordinators, POS Contract Managers, PMT Members, Chief Financial Officers, and MMMARS Liaisons

From: Kristal Doherty, Facilities & Environmental Services Procurement Team Leader, Operational Services Division
Lori Segall, Department of Environmental Protection
James McQuade, Department of Environmental Protection

Date: January 27, 2003

RE: Contract Award for Collection and Recycling of Fluorescent Lamps and Mercury-Containing Devices and/or Cathode Ray Tubes, Computers and Electronics

Contract #: FAC26

MMARS #: ST3J211

Purpose of Update: The Operational Services Division (OSD) has awarded a Statewide Contract for the collection and recycling of fluorescent lamps and mercury-containing devices and cathode ray tubes (CRTs), computers and miscellaneous electronics.

Eligible Entities: All agencies of the Commonwealth, including all constitutional offices, the legislature, and the judiciary; cities, towns, municipalities, counties and other political subdivisions of the Commonwealth, including schools and other service districts; authorities, commissions, institutions of higher education, and quasi-public agencies; not-for-profit organizations currently contracting with the Commonwealth to provide human and social services; and other eligible entities designated in writing by the State Purchasing Agent are eligible to utilize this contract.

Purpose of Contract: This contract covers the collection and processing of mercury-containing articles, such as fluorescent lamps, thermometers and thermostats, lighting ballasts, cathode ray tubes (CRTs) and other electronic equipment. The purpose of the contract is to allow for the collection and disposal of these materials in a manner that reduces the amount of toxic materials in the environment. Mercury is a highly toxic material, which, if released, can damage the human nervous system and can lead to toxic build up in fish and other wildlife. CRTs contain lead, which has been linked to learning disabilities and behavioral problems. Proper management of mercury and lead is an important part of the Commonwealth's effort to reduce toxic materials in the environment.

Contract Duration: The initial duration of this contract is a one year period which began on October 15, 2002 and will end on October 14, 2003. There are five additional options to renew for a period of up to twelve months each option, thus the final end date if all options are renewed would be October 14, 2008.

How to Use the Contract: The contract is divided into two categories: Category A – Collection and Recycling/Disposal of Fluorescent lamps, mercury devices and ballasts and Category B – Collection and Recycling of CRT-containing electronics, computer components, computer peripherals and miscellaneous electronics.

Category A has been awarded to three (3) contractors: AERC, Northeast Lamp Recycling and Onyx Superior (formerly Superior Special Services). All contractors are required to:

- Collect materials from state or municipal facilities within 10 days of a completed service order. It is imperative that the contractors are provided with all the information necessary to complete the pick up and generate an invoice. The minimum collection cost is $50, so a user may either accumulate items until the $50 minimum is reached or may simply pay the $50 charge if items total less than this amount.
- Process materials collected in such a way that all mercury is fully recycled and all other materials are recycled to the greatest extent possible.
- Drop off containers and packing materials upon request (there may be fees associated, see Pricing section).
- Accept materials delivered to their facility.
- Supply a certificate of recycling or processing to the generator.

Category B has been awarded to two (2) contractors: ElectroniCycle, Inc. and Onyx Superior. Both contractors are required to:

- Schedule collection within two (2) business days and make collections within ten (10) business days following a request to pick-up materials.
- Provide for the collection, transportation, processing and recycling of CRT-containing electronics, including televisions and computer monitors, as well as computer components.
- Allow for deliveries of CRT containing electronics and computer components by state agencies or via an independent trucking company working on behalf of the state agency or 3rd Party Vendor directly to the Contractor's facility. **Note: the state contractor is not obligated to accept deliveries from 3rd Party Vendors at state contractor prices.**
- Drop off containers and packing materials upon request from a state agency. **Note: There may be fees associated with this request (see Pricing section).**
- Provide on-site training. **Note: There may be fees associated with this request.**
- Provide to OSD a detailed description of their process including what materials get recycled, what residues remain and how those residues are managed.
- Provide to OSD information on ultimate destination(s) of all products recycled or reused.
- Identify to OSD the saleable end product(s) and all end markets that will be utilized.

NOTE: The Contractors in Category B are not required to collect quantities less than 200 pounds.

Contractor Information:

Category A

Awarded Contractor	Service Ordering	Problems or Concerns
AERC 2591 Mitchell Ave Allentown, PA 18103	Barbara Diaz 800-554-2372 x 120	Tim Phillip 800-554-2372
Northeast Lamp Recycling 250 Main St. East Windsor, CT 06088	Ray, Rob or Jackie 860-292-1992	Robert Robert 860-292-1992
Onyx Superior 218 Canton St. Stoughton, MA 02072	Amanda Poverchuk 781-341-6080 x213	Joe Mokrisky 781-341-6080 x232

Please inform contractors that you are utilizing contract FAC26 when ordering services.

Category B

Awarded Contractor	Service Ordering	Problems or Concerns
ElectroniCycle, Inc. 461-471 West Broadway Gardner, MA 01440	Debbie Peloquin 800-829-5082 or 978-632-7666	Dick Peloquin 800-829-5082 or 978-632-7666
Onyx Superior 218 Canton St. Stoughton, MA 02072	Amanda Poverchuk 781-341-6080, ext. 213	Joe Mokrisky 781-341-6080. ext. 232

Pricing and Acquisition Information:

Category A

AERC

Category	Pricing per	Collected Price ($)	Delivered Price ($)
Fluorescent lamps (straight)	foot	Less than 5000 feet: 0.065 5000–10,000 feet: 0.0625 over 10,000 feet: 0.06	0.05
Compact fluorescents	each	0.4	0.35
HID and other lamps	each	0.85	0.8
PCB ballasts	pound	0.42	0.4
DEHP ballasts	pound	0.42	0.4
Mercury containing devices	pound	2.00	1.75
Elemental mercury	pound	1.00	0.75
Mercury contaminated debris	pail	125 per 1 gallon pail 325 per 5 gallon pail	same
Lead acid batteries*	pound	0.2	0.2
Alkaline, nickel cadmium, nickel iron, nickel metal hydride, lithium ion, carbon zinc (non-mercury) and zinc air*	pound	0.6	0.6
Mercuric oxide, button cells, silver oxide, zinc carbon (mercury containing), mercury batteries, alkaline batteries with mercury*	pound	2.9	2.9
Lithium metal, magnesium*	pound	1.7	1.7

*Batteries can be mixed within a category, however categories should not be mixed.

Container and packaging pricing

Container	Dimensions	Price ($)
Fiber drum	4 ft (85 lamps)	0
Fiber drum	8 ft (85 lamps)	0
4 ft boxes	32 lamps	3.30
8 ft boxes	32 lamps	7.00
5 gallon pails		0
55 gallon drum		0

Additional Services (AERC cont'd)

- On-site training: $40/hour
- Mercury spill kits: $60/kit, 10 kits for $500, containing mercury absorb powder, mercury absorb sponges, gloves and safety glasses
- Barometer removal services: $120/hour including travel time from Milford, MA to location of removal and travel time to consolidation center in Plaistow, NH, plus $191 for truck and equipment costs. This does not include the cost of processing the barometers
- One-day collection events: $120/hour including travel time from Milford, MA to location of removal and travel time to consolidation center in Plaistow, NH, plus $400 set up fee

Discount for sponsoring event = 2% off price of all sponsor-generated materials.

Northeast Lamp Recycling

Category	Pricing per	Collected Price ($)	Delivered Price ($)
Fluorescent lamps (straight)	foot	Less than 5000 feet: 0.0675 5000 – 10,000 feet: 0.065 over 10,000 feet: 0.0625	0.0675
Compact fluorescents	each	0.36	0.36
HID and other lamps	each	0.85	0.85
PCB ballasts	pound	0.48	0.48
DEHP ballasts	pound	0.48	0.48
Mercury containing devices	pound	5.95	5.95
Elemental mercury	pound	3.65	3.65
Mercury contaminated debris	pail	150 for 1 gallon pail 200 for 5 gallon pail	same
Non-mercury batteries	pound	1.65	1.65

Container and packaging pricing

Container	Dimensions	Price ($)
Fiber drum*	4 ft (85 lamps)	14.95*
Fiber drum*	8 ft (85 lamps)	19.95*
Fiber drum*	4 ft (170 lamps)	19.95*
Square drum*	18"x 18"x 25" high	12.95*
4 ft boxes	50 lamps	3.95
8 ft boxes	30 lamps	6.95
5 gallon pails		0
55 gallon drum		0

*One time cost – containers are replaced with empties at pickup

Additional Services

- On-site training $75/hour
- Mercury spill kits: $79 for up to ¾ pound spill of mercury or $95 for up to 1.5 pound mercury spill, containing 350 grams or 700 grams, respectively, of powder that binds the mercury into a magnetic amalgam, bio-scoop with scraper, magnetic pick up tool to collect fine particles, bulb syringe, absorbent towels, wipes, ziploc and biohazard bags, protective gown, vapor mask, safety goggles, one set of nitrile gloves.

Onyx Superior

Category	Pricing per	Collected Price ($)	Delivered Price ($)
Fluorescent lamps (straight)	foot	Less than 5000 feet: 0.075 5000 – 10,000 feet: 0.075 over 10,000 feet: 0.065	0.05
Compact fluorescents	each	0.42	0.39
HID and other lamps	each	1.25	1.00
PCB ballasts	pound	0.49	0.43
DEHP ballasts	pound	0.49	0.43
Mercury containing devices	pound	2.75	2.25
Elemental mercury	pound	1.99	1.75
Mercury contaminated debris	pail	1.75	1.75
Alkaline batteries	pound	0.65	0.60
Nickel cadmium and nickel metal hydride	pound	0.95	0.85
Lead acid batteries	pound	0.30	0.20
Silver oxide	pound	2.50	2.00
Lithium	pound	3.50	3.00
Magnesium	pound	0.70	0.60
Sorting charge	pound	0.20	0.20

Container and packaging pricing

Container	Dimensions	Price ($)
Fiber drum	4 ft (85 lamps)	0
Fiber drum	4 ft (140 lamps)	0
4 ft boxes	30 lamps	0
8 ft boxes	15 lamps	0
5 gallon pails		0
55 gallon drum		0

Onyx Superior reserves the right to assess appropriate fees for packaging requests that are made that are not returned for recycling.

Additional Services

- On-site training: $150 per session
- Mercury spill kits: $50/kit, containing mercury absorb powder, mercury absorb sponges, gloves and safety glasses
- Barometer removal services: $195/location
- One-day collection events: One 24 ft box truck with driver: $500 flat fee.
  One 45 ft. semi trailer with driver: $1,000 flat fee. Additional trained technician: $50/hour (4 hour minimum).
  Discount for sponsoring event = 15% off price of all sponsor-generated materials.

Category B

Electronicycle, Inc. Fee Schedule

CATEGORY	UNIT	PRICE		
		Collected		Delivered to ElectroniCycle
		under 1200 lbs.*	over 1200 lbs.*	
Unsorted CRTs and computer components	pound	$.21	$.18	$.15
Sorting Discount for CRTs and computer components **Materials to be Sorted:**	Varies/market	Varies/market	Varies/market	Varies/Market
TV under 8 years old. No cosmetic damage. Sorted and boxed	pound	No Charge	No Charge	No **Charge**
Intact Pentium II + Sorted and boxed	pound	No Charge	No Charge	No Charge
CPUs, Working surplus equipment, Cards, memory, etc.	Pound	Varies/market	Varies/market	Varies/market
Unsorted Computer peripherals and miscellaneous electronics	pound	$.21	$.18	$.15
CONTAINERS & PACKAGING List Types:	**DIMENSIONS**	**PRICE**		
Initial Gaylords – Reused (no charge for swap)	Standard 36" x 48"	$8.00		
Initial Pallets (no charge for swap)	40" x 48"	$5.00		
ON-SITE TRAINING	**PRICE**			
Per Hour	$65.00 including travel			
TRAILER RENTAL (per week)	$50.00	See Annual Threshold		
TRAILER HAULING	In-state flat rate $350.00	See Annual Threshold		
ANNUAL THRESHOLD	**DISCOUNT (per pound)**			
200,000 lbs./ year Negotiable directly with payer With exclusivity	Transportation fees Waived for Single-Payer contracts Only, not statewide			
ONE DAY COLLECTION EVENTS	**PRICE**	Price/lb. = $.18/lb for material collected		
Set-Up Fee	$600.00			
Incentives/Discounts for One Day Event Sponsors	**Volume discount Based on location**			

*** Note: Quantity thresholds for pricing are different for each contractor.**

Onyx Superior Fee Schedule

CATEGORY	UNIT	PRICE		
		Collected		Delivered to Onyx Superior
		under 6000 lbs.*	over 6000 lbs.*	
Unsorted CRTs and computer components	pound	$.25	$.20	$.18
Sorting Discount for CRTs and computer components **Materials to be Sorted:**				
CRTs	pound	$.20	$.18	$.15
CPUs, keyboards and mice	pound	$.18	$.15	$.12
Unsorted computer peripherals and miscellaneous electronics	pound	$.20	$.15	$.12
CONTAINERS & PACKAGING List Types:	**DIMENSIONS**	**PRICE**		
Cubic Yard Box	36" x 36" x 36"	$5.50 each		
ON-SITE TRAINING	**PRICE**			
Per Location	$150.00	(unlimited attendees per location)		
TRAILER RENTAL (per week)	$100.00			
TRAILER HAULING (per mile)	$1.35			
ANNUAL THRESHOLD	**DISCOUNT (per pound)**			
Over 200 Tons	$.03			
Over 500 Tons	$.05			
ONE DAY COLLECTION EVENTS	**PRICE**			
SEE COLLECTION DETAILS BELOW	$			
Incentives/Discounts for One Day Event Sponsors				
	15%			

*** Note: Quantity thresholds for pricing are different for each contractor.**

CRT Collection Events:

(1) 24ft. Box Truck with driver at collection event	$500.00 Flat Fee
(1) 45ft. Semi-Trailer with driver at collection event	$1,000.00 Flat Fee
Additional Trained Technician	$50.00 per hour (4hr. minimum)

Other Contract Provisions: Two of the awarded contractors offer Prompt Payment Discounts. Onyx/Superior Special Services offers a 5% discount if paid within 15 days. Northeast Lamp Recycling, Inc. offers a 1% discount if paid within 30 days.

Performance Measures and Vendor Reporting Requirements: The contractor **must** provide documentation to the generating facility that all materials collected from such facility have been processed and recycled as described in this RFR. Payment will not take place until the following documentation has been received by the generating facility:

- Certification that all recyclable materials have been recycled as described above;
- With respect to fluorescent lamps and mercury containing devices, certification that all PCB and/or DEHP materials have been received at a licensed disposal facility as described above.

In addition, within one year of pickup, the contractor **must** provide each fluorescent lamp and /or mercury-containing device generating facility certificates of destruction for any PCB or DEHP materials collected from the relevant facility.

On a quarterly basis, the Contractor **must** provide to the Facilities PMT an electronic report in spreadsheet format to include at a minimum:

- contract number
- name of state agency and location serviced
- state agency contact name, address, telephone number
- amount and type of product collected for each reporting period
- total amount of mercury recycled, reported in pounds
- total dollar value of activity for each user
- total sales for reporting period
- additional subcontractors and/or end-users being utilized by the Contractor

and any other information mutually agreed upon by the contractor and the Facilities PMT. If requested by the Facilities PMT or a state agency, the contractor **must** attach all relevant documentation, including invoices, to the report.

The Contractor **must** notify the Facilities PMT prior to making any changes to subcontractors.

Evaluation of contractor performance will take place on an ongoing basis. State agencies will be surveyed as to their satisfaction with the contractor's performance, and unsatisfactory ratings may lead to termination of the contract.

Location of Additional Guidance: Any changes and/or updates to this contract or contractor information will be posted on www.Comm-PASS.com .

Contract Manager Contact Information:

OSD Contract Manager: Kristal Doherty, Procurement Team Leader – Facilities & Environmental Services
Operational Services Division
1 Ashburton Place, Room 1017
Boston, MA 02108
Email: kristal.doherty@osd.state.ma.us
Phone: 617-720-3128
Fax: 617-727-4527

For Category A: Please document any problems with contractors in writing and forward to:
Lori Segall, Department of Environmental Protection
One Winter St. 9th Floor
Boston, MA 02108
Email: lori.segall@state.ma.us

For Category B: Please document any problems with contractors in writing and forward to:
Jim McQuade, Department of Environmental Protection
One Winter Street
Boston, MA 02108-4747
E-mail: james.mcquade@state.ma.us

Environmentally Preferable Purchasing:
A Getting Started Guide

Mercury & Vehicles

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CLEAN CAR CAMPAIGN

Purchasing for Pollution Prevention

Purchasing Cleaner Vehicles – Questions and answers for fleet buyers and vehicle purchasers

The automotive industry contributes 6.6 million jobs to the US economy, including manufacturing, sales, service, and other jobs dependent on automobiles.[1] While most people are aware of the air pollution and global warming consequences of today's automobiles, fewer are aware of the enormous environmental impacts of the production and disposal of cars.

Vehicles contain mercury and lead, highly toxic chemicals that persist in the environment and can build up to dangerous levels in the food chain. Approximately 12 million cars are junked each year in the US and Canada, and these dangerous chemicals can be emitted by smelters that recover metals from vehicles at end of life. In addition, incineration of car parts made from polyvinyl chloride (PVC) can generate emissions of dioxins, a group of toxic chemicals that result from combustion and certain manufacturing processes.[2] Mercury, lead, and dioxin contamination contribute to a number of ongoing environmental and public health threats in the US.[3]

Below are purchasing strategies recommended for reducing three hazardous substances found in vehicle parts — mercury, lead, and PVC (vinyl) — as well as recommendations pertaining to fuel economy.

MERCURY — Why is this a concern in vehicles?

- The 12 million vehicles disposed of annually in the US and Canada contain an estimated 8.8 to 10.2 metric tons of mercury. Because virtually none of this persistent and toxic chemical is recovered during the recycling process, much of it enters the environment during smelting or shredding.[4] Reducing the use of mercury is a priority at the state and federal levels in the US and around the world.
- Fish consumption advisories are one of the most well-known consequences of mercury pollution. Over 12 million acres of lakes and 473,000 miles of river in 45 states — including four of the Great Lakes — contain fish that are so heavily contaminated with mercury that residents are warned to limit their consumption of fish from these waters.[5]
- Mercury may pose a safety hazard for auto recyclers, since it generally ends up back in the environment when cars are crushed, shredded, and smelted down by iron and steel manufacturers.

Which vehicle parts contain mercury?

- Lighting switches
- Antilock braking systems (ABS)
- Ride control switches (adjust suspension)
- High-intensity discharge (HID) headlamps (those with bluish beam generally contain mercury)
- Backlit flat-panel LCD displays, such as navigational displays

[1] Sean McAlinden *et al.*, *Economic Contribution of the Automotive Industry to the U.S. Economy – An Update*, 2003, http://www.cargroup.org/pdfs/Alliance-Final.pdf.

[2] Charles Griffith *et al.*, *Toxics in Vehicles: Mercury*, Ecology Center, Great Lakes United, and University of Tennessee Center for Clean Products and Clean Technologies, 2001, http://www.cleancarcampaign.org/reports.shtml.

[3] For more information on these chemicals, see http://www.epa.gov/mercury/, http://www.epa.gov/lead/, and http://www.epa.gov/opptintr/pbt/dioxins.htm.

[4] Griffith *et al.*, *Toxics in Vehicles: Mercury.*

[5] US EPA, "Update: National Listing of Fish and Wildlife Advisories," fact sheet, EPA-823-F-03-003, 2003, http://www.epa.gov/waterscience/fish/advisories/factsheet.pdf.

INFORM developed this fact sheet jointly with the Ecology Center and the Clean Car Campaign. For more information on the Clean Car Campaign, contact Jeff Gearhart at jeffg@ecocenter.org.

What is being done to remove mercury from vehicles?

- Foreign automakers phased out mercury-containing lighting and ABS switches in the early 1990s, and US automakers will have phased out these same mercury-containing switches by the end of 2003. While relatively smaller amounts of mercury are used in the other vehicle parts mentioned above, they remain a concern because the use of mercury in these applications is on the rise, primarily in higher-end vehicles or as options in some midrange vehicles. The Ecology Center estimates that vehicles currently on the road in the US contain 172 to 200 metric tons of mercury.[6]

What can vehicle purchasers do?

In the bid solicitation:

- Require vehicles that are free of mercury-containing HID headlamps.
- Notify manufacturers that you intend to phase out the acquisition of vehicles containing all remaining mercury components by the following year. (Alternatively, require manufacturers to describe their plans for phasing out the use of these materials.)

In fleet operations:

- During routine vehicle maintenance, replace mercury switches from vehicle hoods and trunks with nonmercury, ball-bearing switches. The cost per switch (about 38 cents) and the time required to remove each switch (less than 5 minutes) are minimal.[7] For more information, visit the Clean Car Campaign website at www.ecocenter.org/autoswitch.shtml or contact Jeff Gearhart of the Ecology Center at 734-663-2400 x117 or email jeffg@ecocenter.org.

LEAD – Why is this a concern in vehicles?

- Vehicles are the top user of lead and the top source of lead releases in the US. Car batteries represent the main use of this persistent and toxic metal, but lead is also used in wheel weights and as a stabilizer in PVC. Although over 93 percent of lead-acid batteries are recycled, approximately 40,000 tons of lead were discarded in US landfills in 1999. The Ecology Center estimates that the entire North American vehicle fleet contains 50,000 to 60,000 tons of lead in wheel balancing weights, and roughly 13,000 metric tons in PVC trim components. The lead in these automotive applications often remains unrecovered at the end of a vehicle's useful life, thus presenting further hazards to human health and the environment.[8] Emissions of lead contribute to the contamination of our environment and have significant health impacts, particularly among children. Low-level lead exposure can cause reduced IQ and attention span, impaired growth, learning disabilities, hearing loss, and other health and behavioral effects. Lead poisoning is estimated to affect an estimated 434,000 preschoolers in the US.[9]

Which vehicle parts contain lead?

- Lead-acid batteries
- Wheel weights
- Vibration dampers
- Surface treatments and coatings
- Cable wiring and harnesses (lead is used as a heat stabilizer)
- Electronic circuit boards and other electrical equipment

What is being done to remove lead from vehicles?

- The application in which alternatives show the most immediate promise is lead-free wheel weights. Substitutes include tin, steel, plastic (thermoplastic polypropylene), and ZAMA (an alloy of zinc, aluminum, and copper). Tin wheel weights are recommended for alloy wheels (to minimize corrosion).

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6 Griffith *et al., Toxics in Vehicles: Mercury.*

7 Ibid.

8 Jeff Gearhart *et al., Getting the Lead Out: Impacts Of And Alternatives For Automotive Lead Uses,* 2003, Ecology Center, Environmental Defense, and the Clean Car Campaign, 2003, http://www.environmentaldefense.org/pdf.cfm?contentid=2887&filename=leadbatteries.pdf.

9 US Centers for Disease Control and Prevention, "Surveillance for Elevated Blood Lead Levels Among Children - United States, 1997-2001," *Morbidity and Mortality Weekly Report,* Vol. 52, No. SS-10, September 12, 2003, http://www.cdc.gov/mmwr/PDF/ss/ss5210.pdf.

INFORM developed this fact sheet jointly with the Ecology Center and the Clean Car Campaign. For more information on the Clean Car Campaign, contact Jeff Gearhart at jeffg@ecocenter.org.

Injecting plastic beads into the tire is also being considered as an alternative to wheel weights. Several of these options are now commercially available in Europe. Furthermore, the European Union has required that manufacturers phase out lead wheel weights and other lead-containing components by July 2005. [10] This is expected to further increase the availability of lead-free alternatives and expand the US market for these products.

What can vehicle purchasers do?

In the bid solicitation:

- Require manufacturers to disclose their current and anticipated use of lead in vehicles so that government fleets can assess future opportunities for purchasing vehicles with reduced lead components.
- Notify manufacturers that you intend to phase out the acquisition of vehicles containing lead wheel weights by 2006. (Alternatively, require manufacturers to describe their plans for phasing out the use of lead wheel weights.)

In fleet operations:

- Consider implementing a pilot program to replace lead wheel weights with lead-free alternatives during routine maintenance. For more information, contact Jeff Gearhart of the Ecology Center at 734-663-2400 x117 or jeffg@ecocenter.org.

VINYL – Why is this a concern in vehicles?

- Harmful heavy metals, such as lead and cadmium, are used as stabilizers in PVC products.[11]
- A variety of phthalates are used in vinyl auto parts to make the plastic soft and flexible. Since phthalates are not chemically bound to vinyl, they can leach or off-gas from these products and possibly expose vehicle occupants. While further research is needed, there is evidence that certain phthalates may cause infertility or birth defects.[12]
- In North America, the auto industry uses over 359 million pounds of PVC each year.[13] When vehicles are scrapped, PVC components are shredded and sent to incinerators, smelters, or landfills. When PVC is burned, it can generate emissions of dioxins, which have been linked to cancer.[14] When PVC components are landfilled, the lead, cadmium, and phthalates they contain can leach out.[15]

What types of vehicle parts contain vinyl?

- Underbody coatings and body sealers
- Instrument panels and interior/exterior trim
- Cable wiring and harnesses

What is being done to reduce the use of vinyl in vehicles?

- Some manufacturers are already using PVC-free alternatives, including polyethylene insulated wiring, non-PVC instrument panels and interior trim, and plastic underbody panels that replace underbody coatings. These alternatives are viewed as more environmentally benign because they do not contain chlorine or phthalates and often require fewer stabilizers than PVC. Toyota's website expresses the com-

[10] Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on End-of-Life Vehicles, http://europa.eu.int/eur-lex/pri/en/oj/dat/2000/l_269/l_26920001021en00340042.pdf; and European Commission Decision of 27 June 2002, amending Annex II of Directive 2000/53/EC of the European Parliament and of the Council on End-of-Life Vehicles, http://europa.eu.int/eur-lex/pri/en/oj/dat/2002/l_170/l_17020020629en00810084.pdf.

[11] US EPA, Locating and Estimating Air Emissions from Sources of Lead And Lead Compounds, EPA-454/R-98-006, May 1998, http://www.epa.gov/ttn/chief/le/lead1.pdf, http://www.epa.gov/ttn/chief/le/lead3.pdf; Agency for Toxic Substances and Disease Registry, "Toxicological Profile for Cadmium," July 1999, http://www.atsdr.cdc.gov/toxprofiles/tp5.html.

[12] US Agency for Toxic Chemicals and Disease Registry, Toxicological Profile For Di-n-butyl Phthalate, 2001, Toxicological Profile for Diethyl Phthalate, 1995, Toxicological Profile for Di-n-octylphthalate (DNOP), 1997, http://www.atsdr.cdc.gov/toxprofiles/#-D-.

[13] American Plastics Council Automotive Learning Center, "Frequently Asked Questions," http://www.plastics-car.com/glossary/faq.html .

[14] US Agency for Toxic Chemicals and Disease Registry, "Toxicological Profile For Chlorinated Dibenzo-p-dioxins (CDDDs)," December 1998, http://www.atsdr.cdc.gov/toxprofiles/tp104.html.

[15] European Commission, "The Behaviour of PVC in Landfill," final report, February 2000, http://www.europa.eu.int/comm/environment/waste/studies/pvc/landfill.htm.

INFORM developed this fact sheet jointly with the Ecology Center and the Clean Car Campaign. For more information on the Clean Car Campaign, contact Jeff Gearhart at jeffg@ecocenter.org.

pany's commitment to replacing PVC resin in roof molding and other parts: "The volume of PVC resin in the Premio and Allion has been reduced to 1/2 or less than that in conventional vehicles. Toyota has also developed a wire harness that does not use any PVC resin or brominated fire retardants in the wire harness shield."[16] Other auto manufactures are beginning to follow suit, an indication that alternatives are gaining acceptance.

What can purchasers do?

In the bid solicitation:

- Require manufacturers to disclose their current and anticipated use of vinyl in vehicles so that government fleets can assess future opportunities for purchasing vehicles with reduced vinyl components.
- Require manufacturers to describe their plans for phasing out the use of vinyl cabling and interior/exterior trim.

FUEL EFFICIENCY -- What are the pollution concerns?

- The EPA estimates that more than one-quarter of global warming emissions comes from transportation in the United States.[17] The more fuel burned, the more emissions that contribute to global warming.

What is being done to increase fuel-efficiency?

- The average fuel economy of vehicles sold is declining, even though technological advances have increased engine efficiency.[18] This is partly because of the current popularity of larger, more powerful vehicles and the lack of effective fuel efficiency standards for all classes of vehicles.
- However, some fleets are beginning to focus more on boosting their purchase of fuel-efficient vehicles. According to a recent report from the American Council for an Energy-Efficient Economy (ACEEE), Los Angeles, Denver, and Portland (Oregon) are among those leading the way.[19]

What can purchasers do?

In the bid solicitation:

- Require that vehicles' fuel economy meet or exceed the average combined city/highway mpg for vehicles in their class, as determined by EPA.
- Prefer bid responses that include, in each relevant vehicle class, vehicles with superior mpg ratings defined by the average fuel economy of the five most efficient vehicle models in that class. (Alternatively, establish a separate category for high-mpg vehicles so that vendors are encouraged to bid vehicles with superior fuel economy.) For more information on approaches to increasing fleet fuel economy, contact Therese Langer at the American Council for an Energy-Efficient Economy at tlanger@aceee.org or 202-429-8873.

In fleet operations:

- Review vehicle requests and encourage the selection of vehicles of a smaller class size whenever possible to achieve increased miles per gallon. The City of Ann Arbor, MI, has a fleet policy which requires new vehicle purchases to be supplemented with a written justification addressing the need for a specific model and type. For example, whenever possible, full-size trucks and vans should be downsized to light-duty vehicles, four-wheel drives replaced with two-wheel drives, and large engines replaced with smaller engines.[20]
- Stay abreast of developments under way to establish a national cooperative purchasing contract that would allow cities, counties, and states to buy hybrid electric vehicles. This effort is being coordinated by

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[16] Toyota, "Recycling and Sales/After Sales," http://www.toyota.co.jp/IRweb/corp_info/eco/recycle.html.

[17] Figure is for carbon equivalents. US EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 - 2001, final version, EPA-430-R-03-004, April 2003, http://yosemite.epa.gov/oar/globalwarming.nsf/content/ResourceCenterPublicationsGHGEmissionsUSEmissionsInventory2003.html.

[18] US EPA, Light-Duty Automotive Technology and Fuel Economy Trends: 1975 Through 2003, April 2003, EPA420-R-03-006, http://www.epa.gov/otaq/fetrends.htm.

[19] Therese Langer and William Langer, "Greener Fleets: Fuel Economy Progress And Prospects," December 2002, http://www.aceee.org/pubs/t024full.pdf.

[20] Personal Communication, David Konkle, Energy Coordinator, City of Ann Arbor, October 28, 2003.

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the US Communities Government Purchasing Alliance and the Center for a New American Dream. For more information, contact: Scot Case, Director of Procurement Strategies, Center for a New American Dream, (610) 373-7703, scot@newdream.org.

COST AND AVAILABILITY -- Will implementing these purchasing specifications cost more or prevent fleets from getting the vehicles they need?

- The recommended specifications are meant primarily to hold manufacturers accountable for changes they are working toward or have already agreed to make. Furthermore, most of the specifications focus on disclosure or the eventual phaseout of toxic constituents. These proposed changes impose no foreseeable risk on purchasers.
- Regarding more fuel-efficient vehicles, according to ACEEE, there is no fixed relationship between fuel economy and price within a vehicle class, and fuel-efficient vehicles can be relatively inexpensive. For example, a Saturn SL gets several more miles per gallon than a Chevrolet Cavalier and its average retail price is $2000 less.[21] Buying more fuel-efficient vehicles can also result in fuel savings and contribute to energy security by reducing the demand for imported petroleum.
- Considerable money is spent to protect the public from emissions generated by smelters that recover metals from used cars and from emissions of global warming gases. Using these recommendations will result in the purchase of cleaner-designed vehicles, making your purchasing practices serve as a model to others while minimizing your own fleet's contribution to these pollution problems.

For more information:

- For recommended specifications see INFORM's Purchasing specifications for vehicle bids at http://www.informinc.org/fact_P3vehicles2.pdf.
- See disclosure specifications used by Minnesota at http://www.informinc.org/fact_P3vehicles.php#minnesota.
- Assistance with purchasing cleaner vehicles: contact Sarah O'Brien, Senior Outreach Associate, INFORM at (802) 479-5535 or obrien@informinc.org.
- Clean Car Campaign: For additional information on the Clean Car Campaign, a national effort aimed at improving the environmental attributes and performance of vehicles sold in the US, visit the campaign's website at www.cleancarcampaign.org or contact the Ecology Center's Jeff Gearhart at (734) 663-2400 x117 or Charles Griffith at (734) 663-2400 x116.
- American Council for a Energy-Efficient Economy (ACEEE): For additional information on the ACEEE, an organization dedicated to advancing energy efficiency as a means of promoting economic prosperity and environmental protection, visit the Council's website at www.aceee.org, review their publication "Greening Fleets" at http://www.aceee.org/pubs/t024full.pdf, or contact ACEEE's Therese Langer at (202) 429-8873 or tlanger@aceee.org.
- Auto Mercury Switch Removal Instructions: http://www.epa.gov/region5/air/mercury/autoswitch.htm.
- Wisconsin Mercury Sourcebook Automotive Sector: http://www.epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf.

[21] Langer and Langer, "Greener Fleets: Fuel Economy Progress And Prospects."

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CLEAN CAR CAMPAIGN

Purchasing for Pollution Prevention

Purchasing Cleaner Vehicles – Recommended Purchasing Specifications for Vehicle Bids

This document contains purchasing specifications recommended for reducing three hazardous substances found in vehicle parts – mercury, lead, and PVC (vinyl) – as well as recommendations pertaining to fuel economy. For more information on purchasing strategies for vehicles, see http://www.informinc.org/fact_P3vehicles.php.

RECOMMENDED SPECIFICATIONS

1. Include a prominent statement in the bid that demonstrates a commitment to pollution prevention and summarizes the environmental requirements.

Suggested language to insert in cover letter or on first page of bid document:

"The [insert name of purchasing agency] exercises a strong commitment to minimize adverse impacts on the air, water, and land through practicing pollution prevention. [Reference any relevant state laws, executive orders, or department polices.] In keeping with this commitment, bidders are encouraged to provide goods and services that do not contain hazardous materials and do not generate hazardous emissions during manufacture. Specifically, bidders are required to disclose vehicle components containing mercury, lead, and vinyl and to describe manufacturers' plans for phasing out the use of these materials. Furthermore, [insert name of purchasing agency] desires vehicles with superior fuel economy. See section [insert appropriate section or page number] of this solicitation for more details."

2. MERCURY: Include in the bid a requirement that vehicle headlamps not contain mercury and notify manufacturers that you intend to purchase vehicles completely free of mercury by next year.

Suggested language to insert in the bid document:

"Mercury is toxic to the nervous system and mercury contamination has resulted in fish consumption advisories in nearly all 50 states. [Consider including a statement about local mercury problems here.] As a result of the known environmental and human health impacts of mercury, it is required that no vehicle sold through this contract contain mercury-containing HID headlamps. Furthermore, it is the intent of [insert name of purchasing entity], within one year, to phase out the purchase of vehicles that may contain mercury in any form, including mercury-containing ride-control switches, backlit LCD screens, and after-market accessories such as security systems."

3. LEAD: Include in the bid a requirement that manufacturers disclose all lead components in their vehicles and notify manufacturers that you intend to purchase vehicles completely free of lead wheel weights by 2006.

Suggested language to insert in the bid document:

"Vehicles are the top user of lead and the top source of lead releases in the US. [Consider including a statement about local lead problems here.] Since lead emissions contribute to the contamination of our environment and have significant health impacts, particularly among children, it is desirable that bidders provide products that reduce the use of lead in vehicles. Therefore, bidders are required to disclose which vehicles offered to agencies contain lead-containing components, such as wheel weights, vibration dampers, cabling, and electronic equipment. Furthermore, it is the intent of [insert name of purchasing entity] to phase out the purchase of vehicles containing lead wheel weights by 2006."

4. VINYL: Include bid requirements that disclose vehicle parts made from vinyl and manufacturer's plans for phasing out the use of vinyl cabling and interior/exterior trim.

Suggested language to insert in the bid document:

"Products containing polyvinyl chloride (PVC) can create dioxins when burned. In addition, PVC (vinyl) often contains heavy metals and phthalates, which have been

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linked to harmful health effects. It is desirable that bidders provide products that reduce the use of PVC in vehicles. Bidders are required to disclose which vehicles offered to agencies contain vinyl and identify the vinyl components in those vehicles (including instrument panels, cabling, undercoatings, etc). In addition, bidders shall detail each manufacturer's plans for phasing out vinyl cabling and interior/exterior trim."

5. FUEL EFFICIENCY: Include bid language that encourages vendors to bid vehicles with improved fuel economy.

Suggested language to insert in the bid document:

"Given that nearly one-quarter of all global warming emissions comes from transportation in the United States, vehicles are required to meet, by class, the minimum mpg standards listed below. Furthermore, bid responses that include, in each relevant class, vehicles that meet the high mpg ratings listed below will be preferred."

EPA Class Size	Minimum MPG Requirement *	High MPG Standard **
Compact	27.6	32.8
Midsize Sedan	23.8	25.7
Large Sedan	22.1	23.6
Wagon	24.6	29
Small-Midsize SUV	9.3	24.8/23.7 †
Large SUV	15.2	18.2/17.3 †
Midsize Van	20.3	21.4
Large Van	15.4	16.4
Small-Midsize Pickup	19.1	23.1/19.5 †
Large Pickup	16.1	17.8/17.1 3†

* Based on the average combined, adjusted fuel economy (see note below) for vehicles in each class as determined by EPA.
** Based on the average fuel economy of the top four most efficient models in each class, excluding hybrids, as determined by EPA. For pickups only, top three most efficient models are used, owing to limited product offerings.
† Based on 2-wheel drive/4-wheel drive.

Source: American Council for an Energy-Efficient Economy (ACEEE). Fuel economy data from EPA, Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2003, EPA420-R-03-006, April 2003, http://www.epa.gov/otaq/fetrends.htm. Fuel economy test numbers (city and highway) are adjusted to account for the difference between test and real-world driving. It is the adjusted numbers that appear on the EPA label placed on vehicles at point of sale.

Actual specifications used by a state government

In its 2001 request for bids, Minnesota required disclosure of mercury and vinyl components.

- Actual specifications (PDF)
- Bid responses received: (PDF)
  - Ford
  - Chrysler
  - General Motors

For more information:

- For more information on mercury, lead, and vinyl in cars, see http:// www.informinc.org/fact_P3vehicles.php.
- Assistance with purchasing cleaner vehicles: contact Sarah O'Brien, Senior Outreach Associate, INFORM at 802-479-5535 or obrien@informinc.org.
- Clean Car Campaign: For additional information on the Clean Car Campaign, a national effort aimed at improving the environmental attributes and performance of vehicles sold in the US, visit the campaign's website at www.cleancarcampaign.org or contact the Ecology Center's Jeff Gearhart at (734) 663-2400 x117 or Charles Griffith at (734) 663-2400 x116.
- American Council for a Energy-Efficient Economy (ACEEE): For additional information on the ACEEE, an organization dedicated to advancing energy efficiency as a means of promoting economic prosperity and environmental protection, visit the Council's website at www.aceee.org, review their publication "Greening Fleets" at http://www.aceee.org/pubs/t024full.pdf, or contact ACEEE's Therese Langer at 202-429-8873 or tlanger@aceee.org.
- Auto Mercury Switch Removal Instructions: http://www.epa.gov/region5/air/mercury/autoswitch.htm.
- Wisconsin Mercury Sourcebook Automotive Sector: http://www.epa.gov/glnpo/bnsdocs/hgsbook/auto.pdf.

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Minnesota

Moves to Drive Mercury Out of the Environment

In an ongoing effort to reduce mercury in the environment, Minnesota has taken steps to purchase, use, and sell vehicles that are free of this dangerous persistent, bioaccumulative toxin (PBT).

When the state went out to bid for model year 2002 vehicles in the fall of 2001, automotive manufacturers and dealers were put on notice that Minnesota will require all vehicles to be free of mercury within three years. As a first step, the bid solicitation requires disclosure of mercury (as well as vinyl) components in vehicles. Furthermore, the state's central motor pool is replacing mercury-containing light switches with mercury-free alternatives in its vehicles and in those that it puts up for auction.

The primary uses of mercury in vehicles are in switches contained in hood and trunk lights and in antilock braking systems. While US automakers agreed in the early 1990s to voluntarily phase out mercury switches, mercury has yet to be completely eliminated — even though mercury-free components are available, comparably priced, and in use, primarily by foreign automakers. Relatively small amounts of mercury are also used in high-intensity discharge (HID) headlamps, ride control switches, and navigational displays. These new applications of mercury in vehicles are a concern because their use is on the rise.

Minnesota's Department of Administration is encouraging state agencies to use the disclosure information required in the new bid when selecting 2002 vehicles. This sends a clear message to automakers to design vehicles without mercury — and the message is getting through. In response to the new bid (and other efforts by the Clean Car Campaign, a coalition of national and regional environmental organizations), General Motors announced in February 2002 that it plans to end its use of mercury light switches immediately, nearly a year ahead of the company's own deadline for phaseout. The state of Indiana has included similar disclosure requirements in its vehicle bid, and New Jersey is considering ways to incorporate such environmental considerations into its purchasing decisions as well.

An estimated 215 million mercury switches are in vehicles currently on the road, each with about a gram of mercury, according to the report *Toxics in Vehicles*. Much of this mercury will be released to the environment when the vehicles are scrapped and sent to steel smelters for recycling, unless the mercury is recovered. Recognizing this, Tim Morse, Minnesota's Travel Management Division Director said: "We are checking vehicles as they come in for routine servicing. The mechanics were able to check about 100 cars that recently went to auction and found about 20 mercury switches, primarily in Ford Taurus and Crown Victoria cars. We're finding that it's very easy and only takes a couple of minutes to check the vehicle and remove or replace the switch." In appreciation of Minnesota's commitment to preventing mercury releases from fleet vehicles, mercury-free switches were donated to the state by the Clean Car Campaign. Typically, these cost between 20 and 40 cents per switch.

Minnesota's 2002 vehicle bid solicitation includes several other new elements besides the mercury and vinyl disclosure requirements. Vendors must now provide their vehicles' mileage and emissions ratings, and there are new categories for high-mileage and electric hybrid vehicles. These changes make it easier for purchasers to identify and select more fuel-efficient and less polluting vehicles, and thereby reduce releases of polycyclic aromatic hydrocarbons, naphthalene, and other PBTs from the state's fleet.

For more information, contact John Gilkeson, Minnesota Office of Environmental Assistance, 651-215-0199.

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Department of Administration

Materials Management Division
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REQUEST FOR BID (RFB) ADDENDUM

Addendum No.: 1 Date of Addendum: October 10, 2001

RFB Number: N/A Agency: All agencies and CPV members

Due Date, Time: October 31, 2001 Revised Date, Time: October 31, 2001

Acquisition Management Specialist: Bruce Charon

Title: Automobiles, Passenger Vehicles and Cargo Vans

SCOPE OF ADDENDUM

Enclosed, with this addendum, is a diskette that contains a file that includes pages 24 - 42 of the solicitation document. We have provided this information in three different formats so that vendors may choose the one that they can open and use. Vendors are to complete the pages and provide a completed hard copy with their response.

The following language is to be added to the Special Terms, Conditions, and Specifications:

Because of hazards posed to the environment, it is the intent of the State of Minnesota to phase out the purchase of vehicles manufactured with any components containing mercury. It is the intent of the State of Minnesota, in the solicitation next year, to require that vehicles be free of headlamps containing mercury and convenience lighting switches containing mercury. It is also the intent of the State of Minnesota, within the next three years, to require all vehicles be free of mercury.

Complete and accurate data regarding all components containing mercury is required in all responses to this solicitation. Failure to supply the required information may result in the rejection of your response.

Although disclosures regarding the use of mercury will not impact the award of contracts this year, agencies purchasing vehicles will be encouraged to consider this environmental issue when making choices among available contract options. The state's largest single purchaser of vehicles, the Travel Management Division within the Minnesota Department of Administration, will consider mercury content, as well as price and other factors, when selecting vehicles.

This addendum **shall** become part of the RFB and **should** be returned with the RFB.

RESPONDER NAME: _____

SIGNATURE: _____

TITLE: _____

DATE: _____

Group Hi-MPG A

Alternative Fuel 4 Door Sedan (High MPG)
Vehicles Must Be Rated at 35 MPG (Highway) Minimum
(please type entries)

Make, Model Name and Type _____

Model Number _____

Environmental Code (* Required) _____

Engine Size _____

Alternative Fuel Type Dedicated ____ BiFuel ____ Flexible ____

Front Seat Type _____

Total Vehicle Seating Capacity _____

Tires (size and type) _____

Spare Tire Full Size_____ Space Saver_____

Air Bag Locations _____

Required Equipment: Automatic Transmission, Cloth Upholstery, Rear Window Defroster, Cruise Control, Tilt Wheel, Engine Block Heater and Air Conditioning.

List Additional Equipment Included With This Model (power windows/door locks/seats, etc.)

_____

_____

_____

Price Per Unit, Equipped as Specified Above $_____

Price Per Mile for Delivery from Dealer to Delivery Point $_____

Any Option Changes (adds or deletes) shall be priced at Manufacturer-to-Dealer Invoice.

EPA Rated Miles Per Gallon: _____MPG City _____MPG Highway

Emission Control Rating: Tier 1____ LEV____ ULEV____ SULEV_____

List all Components that Contain PVC Vinyl: _____

List all Components that Contain Mercury: _____

Vendor Name and Address _____

_____

_____

Contact Person: _____

E-Mail: _____

Phone #: _____ Toll Free #: _____

Fax #: _____

Environmentally Preferable Purchasing:
A Getting Started Guide

Mercury & Hospitals

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Massachusetts
Rids Mercury from State Hospitals

Until recently, thermometers, blood pressure cuffs, and other medical equipment containing mercury (a highly toxic persistent, bioaccumulative toxin, or PBT) were still being sold to some Massachusetts state hospitals and clinics. But that changed when the state went out to bid for medical equipment in 2001 and told vendors to stop offering products made with mercury.

When a broken mercury thermometer or other hospital device leaks even small quantities of mercury, the costs of cleanup are high. And if the spill is not managed properly, toxic vapors can be inhaled by patients and staff. When a mercury thermometer breaks in the sink, the mercury that runs down the drain can wind up in lakes and other water bodies, where it can build up in fish eventually consumed by humans. Finally, when mercury thermometers and other mercury-containing devices are thrown out in the trash, releases of mercury from landfills and incinerators can pollute our lakes and rivers.

Given these health and environmental concerns, and Massachusetts' commitment to implementing a "zero mercury strategy," the state's hospital and laboratory purchasing team decided to minimize mercury equipment available on state contracts. Working with INFORM and the state's mercury reduction coordinator, the team developed bid specifications for the medical and surgical supply contract, asking that vendors sell only mercury-free products except where no alternatives are available, and requesting that they offer mercury reduction services such as product disposal assistance. The contract was awarded in March 2001.

Massachusetts has now eliminated virtually all mercury-containing devices from its primary medical supply contract. Despite the exception allowed in the contract, so far no vendor has identified a product for which a mercury-free substitute does not exist. To test vendor compliance with the new rules, INFORM and the state's mercury reduction coordinator attempted to buy products that traditionally contain mercury. The response was positive,, with one vendor saying when asked about a mercury-containing product, "We're not supposed to sell that."

A number of vendors have also opted to provide various mercury reduction services. For example, one will help identify mercury products already present in the hospital, coordinate their safe disposal, and provide educational materials on mercury products. Another vendor will provide mercury-free electronic thermometers at no charge in exchange for supplying the hospital's probe covers.

INFORM estimates that changes in Massachusetts' medical and surgical supply contract have reduced the purchase of mercury by state medical facilities by at least five pounds, enough to contaminate over three million stripped bass, or 3000 lakes.

For more information, contact Peter Sasso, Medical and Laboratory Supplies Procurement Team Leader, Massachusetts Operational Services Division, 617-720-3307, peter.sasso@state.ma.us.

Mercury Reduction

Examples of Mercury Purchasing Language

Source: **Sustainable Hospitals Project**

Click here to download a PDF version of this document
Click here to download a MS-Word version of this document

Mercury Free Resolution and Purchasing Policy

SOURCE:Dartmouth Hitchcock Medical Center

DHMC endorsed a resolution to be a "mercury free" facility. (See below). The resolution states:
BE IT FURTHER RESOLVED that DHMC should discontinue the purchase of new mercury containing equipment where other non-hazardous alternatives are available such as aneroid sphygmomanometers and non-mercury thermometers, and that existing mercury devices should be replaced with non-hazardous devices whenever possible, and strongly encourages the elimination or reduction of mercury and mercury compounds in any process or procedure performed at DHMC.

In support of this resolution, DHMC has adopted the following purchasing policy:

1. DHMC will inform manufacturers, vendors, and group purchasing organizations (GPOs) of its non-mercury purchasing policy, and will encourage them to identify and label products containing mercury, and to offer non-mercury alternative products whenever feasible alternatives exist that do not compromise patient care.

2. Supplier shall represent and warrant in the purchase agreement and with the submission of this Policy that the products proposed to be furnished under any purchase agreement do not contain mercury.

3. If the products proposed do contain mercury, it must be identified and listed in an exhibit to this Policy. Supplier shall specify the amount of mercury contained in any products listed in this exhibit and indicate if a feasible mercury-free alternative is available.

A Resolution in Support of a Mercury Free Initiative
Dartmouth Hitchcock Medical Center

WHEREAS elemental mercury and mercury compounds are known to be hazardous to

human health and the environment and are a potential source of exposure to patients, visitors and staff, and

WHEREAS the DHMC Hazard Communication Policy and the "List Of Highly Restricted Hazardous Materials" requires consideration of less hazardous alternatives, and

WHEREAS DHMC has experienced 69 mercury spills since 1994 resulting in a cost of $25,800 for cleanup, labor and disposal costs, and

WHEREAS mercury continues to be a dangerous and persistent pollutant recognized as a bio-accumulative toxin and is largely responsible for federal advisories against the consumption of fish, and

WHEREAS DHMC is participating in the "AHA/EPA Memorandum of Understanding" process to eliminate mercury from health care, and

WHEREAS EPA New England is encouraging hospitals in the region to participate in the "Mercury Challenge Program" to find alternatives to using mercury in health care equipment and products, and

WHEREAS the state of New Hampshire "Mercury Reduction Strategy" report identifies the health care industry as a major source of mercury pollution, and

WHEREAS the DHMC Statement of Environmental Principles confirms DHMC's commitment to improving environmental management throughout the organization, and that DHMC will manage, minimize and eliminate, whenever possible, the use of hazardous materials, and

WHEREAS DHMC continues to be committed to the health and welfare of the people and communities we serve and the environment we all share, and

WHEREAS there are recognized and widely accepted alternatives to mercury and mercury containing devices in health care.

NOW THEREFORE LET IT BE RESOLVED that the Environmental Resources Committee and the Safety Committee hereby supports, endorses and commends all efforts consistent with institutional goals and financial considerations to eliminate and/or reduce mercury use at DHMC.

BE IT FURTHER RESOLVED that DHMC should discontinue the purchase of new mercury containing equipment where other non-hazardous alternatives are available such as aneroid sphygmomanometers and non-mercury thermometers, and that existing mercury devices should be replaced with non-hazardous devices whenever possible, and strongly encourages the elimination or reduction of mercury and mercury compounds in any process or procedure performed at DHMC.

_____ _____

Chairperson, ERC

_____ _____

Chairperson, Safety Committee

Mercury Reduction

SOURCE: Kaiser Permanente

Kaiser Permanente is committed to minimizing the amount of mercury utilized in its operations, and desires to avoid the acquisition of products that contain mercury whenever feasible alternatives exist that do not compromise patient care.

Supplier shall represent and warrant in the purchase agreement and with the submission of this Proposal that the products proposed to be furnished under any Agreement do not contain mercury, except as identified and listed in an exhibit to this Proposal. Supplier shall specify the amount of mercury contained in any products listed in this exhibit and indicate in the Proposal if a feasible mercury-free alternative is available.

Purchasing Procedure Mercury Abatement Policy

Source: Butterworth Hospital

The Purchasing Department will make every attempt to not purchase any product that contains mercury. This list of products includes, but is not limited to, sphygmomanometers, diffusion pumps, esophageal, and mercury electrodes.

The Purchasing staff will work with the requisitioning department to find alternate products to acquire in place of the products that contains mercury. For example, Disposable thermometers will be replaced by digital thermometers or disposable temperature strips. Mercury filled sphygmomanometers will be replaced with digital sphygmomanometers.

The environmental Services Director will be notified if the mercury containing product has to be purchased because there is no substitute product available.

Mercury Reduction

REGISTER GLOSSARY FEEDBACK SITE MAP HOME

Environmentally Preferable Purchasing:
A Getting Started Guide

Sample Policies, Resolutions, and Executive Orders

21.11.07.07

Maryland

.07 Mercury and Products that Contain Mercury.

A. All procurement agencies shall give a preference under this regulation to procuring products and equipment that are mercury-free. If mercury-free products and equipment that meet the agency's product performance requirements are not commercially available, the procurement agency shall give preference under this regulation to products containing the least amount of mercury necessary to meet performance requirements.

B. Procurement solicitations for products that may contain mercury shall give a price preference not exceeding 5 percent to bids or proposals for products that are mercury free or, if the procurement solicitation states, to products containing the least amount of mercury. A procurement officer:

(1) Shall specify in any specific procurement solicitation, a price preference not exceeding 5 percent; and

(2) May limit competition in any specific procurement solicitation to only mercury-free products.

C. Notice of the requirements under §B of this regulation shall be included in procurement solicitations if mercury is known to be a likely component of the products being procured.

D. The head of a procurement agency or designee may determine that the price preference in §B of this regulation is not in the best interest of the State. If the head of a procurement agency or designee makes this determination, the procurement agency shall provide an alternative preference for products that are mercury free or for products containing the least amount of mercury.

E. In all written and electronic procurements where mercury is a component of the products being offered, bidders and offerors shall certify the mercury content of offered products to be eligible for the preference. The mercury affidavit in COMAR 21.05.08.09 may be used for this certification.

Environmental Program Fact Sheet
Mercury Education and Reduction Act

Elemental Mercury Purchasing and Disposal Requirements

Certification Statement

Beginning July 1, 2003, the seller, distributor or provider shall require the purchaser or recipient at the time of receipt of any elemental mercury to sign a statement that the purchaser or recipient:

1) will use the mercury only for medical, research or manufacturing purposes;

2) understands that the mercury is toxic and that the purchaser will store, use and otherwise handle exposure to such mercury in accordance with State and federal law; and

3) will dispose of the elemental mercury in accordance with the State and federal law.

Sellers, distributors, or providers must comply with the law if they are offering for sale or distributing for promotional purposes elemental mercury in Connecticut. **Certification statements are not required for the distribution of dental amalgam dispose caps to dentist practitioners.**

Certification Statement Form

The set of instructions and certification statement form for the receipt of elemental mercury is available from the DEP web site at www.dep.state.ct.us/wst/mercury/mercury.htm.

Section 1. Information on the Provider of Elemental Mercury

Organization - Full legal name of provider company or organization.
Organization Telephone Number - A general telephone number and area code for the provider's company or organization.
Organization Address - Physical location of provider company or organization including a street number and street name, city or town, state, and zip code.
Contact Person - A person who can answer questions for the provider's company or organization.
Contact Telephone Number - Telephone number and area code of the contact person.
Contact Address - Mailing address for the contact person including a street number and street name or p.o. box number, city or town, state and zip code.
Contact E-mail Address - E-mail address for the contact person, if available.

Section 2. Information on the Recipient of Elemental Mercury

Organization - Full legal name of recipient company or organization.
Organization Telephone Number - A general telephone number and area code for the recipient's company or organization.
Organization Address - Physical location of recipient company or organization including a street number and street name, city or town, state, and sip code.
Contact Person - A person who can answer questions for the recipient's company or organization.
Contact Telephone Number - Telephone number and area code of the contact person.
Contact Address - Mailing address for the contact person including a street number and street name or p.o. box number, city or town, state and zip code.
Contact E-mail Address - E-mail address for the contact person, if available.

Section 3. Amount of Mercury Purchased
Amount of Mercury - The amount of mercury, reported in the measurement of pounds, transferred/purchased from the provider to the recipient on the date indicated on the certification statement.
Date Transferred/Purchased - The date the elemental mercury is received by the recipient's organization.

Section 4. Uses of the Elemental Mercury
The recipient can check as many of the allowable uses of elemental mercury as are applicable. A separate form is not required if the recipient uses the elemental mercury from a single delivery for more than one allowable use (e.g. only one form is required for a delivery of mercury for manufacturing at the location delivered and for further distribution for manufacturing by your company or organization at other locations).

Section 5. Signature Requirement
All forms must be signed by an individual in accordance with the signatory responsibility requirements of the Connecticut General Statutes, Section 22a-6, and Section 531-157 and Regulations of Connecticut State Agencies, Section 22a-174-2a(a).

Submittal of Information

A completed Certification Statement Form must be submitted to the DEP by the seller, distributor, or provider of the elemental mercury. All forms must be signed by an individual (recipient) in accordance with the signatory responsibility requirements of the Connecticut General Statutes, Section 22a-6, and Section 531-157 and Regulations of Connecticut State Agencies, Section 22a-174-2a(a). The DEP upon receipt of the Certification Statement Form will perform an initial review to determine if all the necessary information has been submitted. The DEP will not process an insufficient Certification Form and may reject an insufficient form thereby requiring the seller, distributor or provider to reapply. Only original Certification Statement Forms will be accepted. No copies, faxes or electronic submissions will be accepted. All information provided on the form must be either typed or printed using black ink. **The seller, distributor, or provider of elemental mercury must submit a completed Certification Statement Form within sixty days of the date of the sale to:**

Department of Environmental Protection
Bureau of Waste Management
ATTENTION: Mercury Program
79 Elm Street
Hartford, CT 06106-5127

Material Safety Data Sheet

The law requires that a purchaser or recipient shall be provided by the person offering for sale or distributing for promotional purposes a Material Safety Data Sheet as defined in 42 USC 110349.

Disposal of Waste Elemental Mercury

Any person who uses elemental mercury for dental, medical, research or manufacturing purposes is required to dispose of the waste elemental mercury in accordance with State and federal laws including the Resource Conservation and Recovery Act. Regulatory requirements become increasingly stringent as more hazardous waste is handled. **Waste elemental mercury** is a hazardous waste. The person, who is recognized as the generator of the waste elemental mercury, is required to determine their hazardous waste generator status. For more information about hazardous waste determinations, or to obtain a list of testing laboratories that can perform the TCLP test, refer to the Hazardous Waste Determinations/Knowledge of Process Environmental Program Fact Sheet [www.dep.state.ct.us/wst/hazardous/hwd.htm] to ensure safe and environmentally sound management of these specific products or contact the DEP at (860) 424-3023 or toll free at 1-888-424-4059.

Proper Handling of Waste Elemental Mercury

All employees who handle or manage waste elemental mercury must be:

- provided a copy of Elemental Mercury MSDS sheet;
- instructed on proper handling and disposal techniques; and
- provided emergency protocols and procedures.

Additional Information

For further information, visit the DEP Web site at www.dep.state.ct.us/wst/mercury/mercury.htm or for assistance visit our office Monday through Friday 8:30 a.m. to 4:30 p.m. or call our Mercury hotline at 1-877-537-2488 or (860) 424-3297. This overview is designed to provide basic information and to answer general questions. Refer to the appropriate Connecticut General Statutes for the specific regulatory language.

AMHERST COLLEGE

AMHERST, MASSACHUSETTS 01002

APRIL 2004

Mercury Use Reduction Policy

I. Scope

This policy is prepared in accordance with the requirements of the Massachusetts General Law (MGL) c. 21I, § 3, 10-12 of the Toxic Use Reduction Act; the Massachusetts Department of Environmental Protection (DEP) 310 CMR 50; and the Amherst College Environmental Health and Safety Committee.

II. Purpose

Amherst College is committed to the reduction, wherever possible, of liquid mercury acquisition, utilization, storage, and the subsequent need for disposal of mercury. This policy is written to provide guidance regarding decisions related to the acquisition of mercury and mercury bearing devices.

III. Applicability

All departments, employees, visitors, and subcontractors at Amherst College.

IV. Planning and Procurement

A. All Departments

1. For teaching and research laboratories, wherever possible, substitute non-mercury devices, e.g., alcohol thermometers or digital thermometers. Wherever possible specify the use of non-mercury devices for measuring pressure, etc.

2. Wherever possible identify mercury devices or mercury metal which are no longer needed but may be utilized by another researcher or laboratory.

3. Procure mercury in the smallest quantities available which meet the maximum usage requirements. It is more economical for Amherst College to repurchase additional quantities of mercury when needed than to declare excess quantities of mercury for disposal.

4. Eliminate wherever possible the use of mercury wetted switches.

B. Subcontractors

Wherever possible, subcontractors will be required to use only environmentally friendly products at Amherst College. Where mercury devices can not be avoided, the contractor

shall provide a plan detailing the type of device, the quantity to be used, spill and control plans, and finally the subcontractor's disposition of any mercury.

C. *Utilization and Management of Mercury*

All mercury and mercury devices will be handled, used, and stored in accordance with the Hazardous Material Management Policy, 6.0 and/or the Chemical Hygiene Plan, 20.0. Any mercury or mercury bearing device which is deemed unacceptable for future use or is identified as excess material without future need will be declared hazardous waste by attachment of the appropriate hazardous waste label and managed in accordance with the Hazardous Waste Management Policy, 8.0.

Resolution Number: 30487

A Resolution relating to persistent, bioaccumulative, toxic chemicals (**PBTs**), stating the City of Seattle's intent to reduce its use of **PBTs**, and setting forth a work program. (**PBTs**).

Date introduced/referred: Jul 1, 2002
Date adopted: Jul 1, 2002
Status: Adopted As Amended
Vote: 9-0

Committee: Introduction and Adoption
Sponsor: WILLS

Index Terms: PURCHASING, STATING-POLICY, ADMINISTRATIVE-PROCEDURES, POLLUTION, ENVIRONMENTAL-PROTECTION, WATER-POLLUTION, ENVIRONMENTAL-CLEANUP, ENVIRONMENTAL-HEALTH, ENVIRONMENTAL-PLANNING

References/Related Documents: Related: Res. 29949

Text

Note to users: {- indicates start of text that has been amended out
-} indicates end of text that has been amended out
{+ indicates start of text that has been amended in
+} indicates end of text that has been amended in

A RESOLUTION relating to persistent, bioaccumulative, toxic chemicals (PBTs), stating the City of Seattle's intent to reduce its use of PBTs, and setting forth a work program.

WHEREAS, a group of pollutants known as Persistent Bioaccumulative Toxic chemicals (PBTs) are toxic, persist in the environment and build up in the food chain, and can pose risks to public health and the environment; and

WHEREAS, the Washington State Department of Ecology is developing a list of priority PBTs that includes chemicals that Ecology believes require greater attention because of their persistence, bioaccumulation and toxicity characteristics; and

WHEREAS, phasing out the use, production and release of PBTs is important to protecting environmental and public health because once these chemicals are produced, it is difficult and costly to manage, destroy or degrade them; and

WHEREAS, respected expert associations and agencies including the American Public Health Association, the United Nations Environment Program, the Chicago Medical Society and the International Joint Commission of the U.S. and Canadian governments, have agreed upon the benefits of reducing certain PBT pollution in the environment; and

WHEREAS, the Washington State Department of Ecology is pursuing a plan to reduce and eliminate PBTs in the state, including mercury, dioxin and PCBs; and

WHEREAS, the City has, in recent years, established a strong policy framework to guide the City's actions and investments toward environmental stewardship and sustainability, including:

* Ordinance 120121, which created the Office of Sustainability and Environment (OSE), which established OSE's role in integrating sustainability and environmental values into all City plans, policies, and programs, and directed OSE to present its work plan to the City Council; and

* The 2002 Earth Day Resolution that reaffirmed the City's commitment to continuous improvement in environmental management by the City, as a means to reduce the potential human health and environmental risks associated with City operations; and

* Resolution 29949 that adopted new approaches and policies for purchasing processes directs the City to balance competing goals including social, economic, and environmental values; and

* The City's Proclamation on Puget Sound orca whales that identifies the reduction and elimination of the use of toxic substances- by governments, corporations and families- as a critical necessity for protection of the species; and

WHEREAS, potential adverse environmental and health effects from PBTs may be reduced through purchasing decisions that reduce or eliminate products that result in the creation or release of PBTs; and alternative, less toxic options exist for many products, NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SEATTLE, THE MAYOR CONCURRING, THAT:

Section 1.

The City of Seattle considers persistent pollution prevention a high priority for action to reduce risk to public and environmental health, and intends by this resolution to encourage the reduction of pollution from PBTs.

Section 2.

The City of Seattle will consider the presence of PBTs and the potential for their release in making purchasing decisions by:

a) Developing and applying criteria that differentiate products containing PBTs and those that result in the release of PBTs during production or disposal from those that do not; and

b) Developing an implementation plan with reduction targets by October 2002 for considering these criteria along with other environmental, social, and economic factors when purchasing products

in city departments, offices and agencies in order to reduce pollution from PBTs. Items to be considered in the development of the implementation plan will be determined by identifying and analyzing City uses of products containing chemicals identified on the Department of Ecology PBT priority list or products that result in the generation of such PBTs during their manufacture, including but not limited to, paper, penta-treated wood, mercury switches in fleet vehicles, and PVC building materials and office supplies. Implementation plan actions will be prioritized based on reduction opportunity potential, technical feasibility, economic feasibility, and protection of human health and the environment. As a general rule, the use of an alternative product should be considered economically feasible if its cost, including cost of application, is within 110% of the full costs of the product of concern. In assessing economic feasibility, long-term public health and environmental implications should be considered, as well as the opportunity to stimulate the development of alternatives. By encouraging the development of new products, the City's purchasing policies may help encourage market transformation and drive costs down below the 110% threshold.

Adopted by the City Council the _____ day of _____, 2002, and signed by me in open session in authentication of its adoption this _____ day of _____, 2002.

_____
President of the City Council

THE MAYOR CONCURRING:

_____
Mayor

Filed by me this _____ day of _____, 2002.

_____
City Clerk

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EXECUTIVE ORDER 04-01

PERSISTENT TOXIC CHEMICALS

WHEREAS, persistent, toxic chemicals, such as mercury, dioxin, and polychlorinated biphenyl (PCBs), are toxic in small amounts, remain in the environment for long periods of time, and build up in humans, fish and animals; and

WHEREAS, persistent, toxic chemicals are passed from one generation to another in the womb and through breast milk; and

WHEREAS, persistent, toxic chemicals have been linked to birth defects, reproductive failure, cancer, learning and behavioral problems in young children, and other health problems; and

WHEREAS, hundreds of water bodies in Washington fail to meet water quality standards for pollution, including persistent, toxic chemicals; and

WHEREAS, the Washington State Department of Health (DOH) and local health jurisdictions have issued fish consumption advisories for 13 water bodies because of high levels of toxic chemicals; and

WHEREAS, DOH has issued a statewide advisory for mercury in bass and other fish; and

WHEREAS, persistent, toxic pollution harms fish and other wildlife, including Puget Sound orca whales, which have become one of the most contaminated marine mammals in the world, in part because of PCBs that have concentrated in the Puget Sound food chain; and

WHEREAS, the state of Washington has developed a groundbreaking strategy to phase out existing sources of persistent, toxic chemicals, clean up historical sources, and prevent new sources; and

WHEREAS, the Governor's Sustainable Washington Advisory Panel has recommended that the state phase out the purchase of goods with persistent bioaccumulative toxic (PBT) materials; and

WHEREAS, the Department of Ecology has developed a plan to reduce and eliminate sources of mercury pollution in Washington;

NOW THEREFORE, I, Gary Locke, Governor of the state of Washington, declare my commitment to phasing out persistent, toxic pollution in Washington State and hereby order and direct the following:

1. The Department of Ecology, in consultation with the Department of Health, shall:

    a. Move forward immediately in developing a chemical action plan that identifies actions the state may take to reduce threats posed by persistent, toxic chemicals found in flame retardants, known as polybrominated diphenyl ether (PBDEs), and recommend actions by December 1, 2004.

    b. Begin implementing the plan no later than July 1, 2005.

2. The Department of Ecology shall implement the mercury chemical action plan to the extent that funding is provided for this purpose.

3. The Department of Ecology shall establish, through rule, specific criteria for use in identifying persistent, toxic chemicals that pose human health or environmental impacts in Washington State, and a clear process for developing chemical action plans to address those impacts.

4. The Department of Ecology shall continue using its existing programs and authorities to reduce persistent, toxic chemicals over time.

5. The Department of General Administration's Office of State Procurement shall make available for purchase and use by all state agencies equipment, supplies, and other products that do not contain persistent, toxic chemicals unless there is no feasible alternative. In circumstances where a product that does not contain persistent, toxic chemicals is not available, preference shall be given to the purchase of products that contain the least amount of persistent, toxic chemicals.

6. Each state agency, as part of its Sustainability Plan, shall adopt measures to reduce the use of equipment, supplies, and other products that contain persistent, toxic chemicals. Agencies shall report annually on progress in meeting these measures as part of their Sustainability Plan as required under Executive Order 02-03.

This executive order shall take effect immediately.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the State of Washington to be Affixed at Olympia this 28th day of January A.D., Two thousand four.

GARY LOCKE
Governor of Washington

BY THE GOVERNOR:
Secretary of State

NATIONAL WILDLIFE FEDERATION
www.nwf.org

Environmentally Preferable Purchasing:
A Getting Started Guide

Section Two:

Purchasing for Energy Efficiency

Section Two: Purchasing for Energy Efficiency

General Resources

- Energy Star institutional purchasing – EPA
- Finding money for energy efficiency – EPA
- Energy efficiency procurement resources – EnergyIdeas Clearinghouse
- Additional energy resources

Sample Contract Language, Specifications, and Policies

- NY City Council Policy 536-A – Energy efficient products
- Energy Star office products: Sample procurement language

Environmentally Preferable Purchasing:
A Getting Started Guide

General Resources

EPA United States Environmental Protection Agency | Air and Radiation (6202J) | DRAFT September 2002

Money Isn't All You're Saving

ENERGY STAR® Institutional Purchasing

What is ENERGY STAR Institutional Purchasing?

ENERGY STAR makes it easy for organizations to purchase energy-efficient products, reduce their energy costs, and prevent air pollution. ENERGY STAR Institutional Purchasing encourages and assists governments, schools, and businesses in procuring ENERGY STAR labeled products. These products use 25 to 50 percent less energy than their traditional counterparts, reduce fossil fuel use, and lower greenhouse gas emissions. Institutions and businesses can save hundreds of thousands of dollars annually by purchasing and using ENERGY STAR labeled products.

ENERGY STAR Labeled Products

Over 11,000 product models in over 30 product categories bear the ENERGY STAR label. To qualify, these products must meet strict guidelines for energy efficiency:

- Office Equipment
- Heating & Cooling Equipment
- Lighting
- Exit Signs
- Windows
- Appliances
- Consumer Electronics
- Water Coolers
- Roof Products
- Transformers
- Traffic Lights

Benefits of Purchasing ENERGY STAR Labeled Products

- Reduced energy costs without compromising quality or performance
- Reduced air pollution because fewer fossil fuels are burned
- Significant return on investment
- Extended product life and decreased maintenance

The ENERGY STAR Purchasing Tool Kit

The ENERGY STAR Purchasing Tool Kit helps organizations quickly and easily identify, specify, and procure ENERGY STAR labeled products. Available online at www.energystar.gov, the ENERGY STAR Purchasing Tool Kit includes many valuable resources:

- **Product specifications***
- **Savings/Life-cycle cost calculators** that show how much energy and money an organization can save by purchasing ENERGY STAR labeled products
- **Drop-in procurement language** that organizations can incorporate into their purchasing policies
- Examples of energy-efficient purchasing **legislation**, including federal executive orders, state and local government policies, sample RFPs and contracts
- **Communication materials** for organizations to promote their success to stakeholders

ENERGY STAR is a government-industry partnership that makes it easy for organizations, businesses, and consumers to save money and protect the environment—in the workplace and at home. The ENERGY STAR label denotes the superior energy performance of more than 30 categories of consumer and business products and of office buildings, schools, and new homes. With ENERGY STAR, money isn't all you're saving.

* To help purchasers, the ENERGY STAR Purchasing Tool Kit also lists products considered energy-efficient but do not bear the ENERGY STAR label. These products are recommended by DOE's Federal Energy Management Program (FEMP).

Who Benefits from ENERGY STAR Institutional Purchasing?

- State, local, and federal governments
- K-12 schools
- Colleges/Universities
- Hotels
- Other businesses/corporations

How Can Your Organization Procure ENERGY STAR Labeled Products?

- Visit www.energystar.gov or www.epa.gov/nrgystar/purchasing (this link is subject to change) for detailed information on all ENERGY STAR labeled products, including product specifications, cost comparison calculators, procurement language, store locators, manufacturer contact information, and communication materials.
- Participate in an Internet presentation on ENERGY STAR Institutional Purchasing. Visit the ENERGY STAR Purchasing home page and click on "Participate in Our Internet Presentations."
- For more information, contact:
  - State governments
    Steve Jurovics, 919-403-5104,
    sjurovics@cadmusgroup.com
  - Higher education & K-12 schools
    Michelle Salisbury, 617-673-7153,
    msalisbury@cadmusgroup.com
  - Hotels & local governments
    Linda Dunlee, 617-673-7155,
    ldunlee@cadmusgroup.com
- Call the toll-free ENERGY STAR hotline: 1-888-STAR-YES (1-888-782-7937).

Five easy steps to procure ENERGY STAR labeled products

1. ***Review*** *purchasing policies and identify product categories where savings exist.*
2. ***Visit*** *www.energystar.gov for product listings. Use the Savings Calculators to determine savings opportunities and life cycle costs.*
3. ***Coordinate*** *with the appropriate offices within your organization to encourage the purchase of identified ENERGY STAR labeled products.*
4. ***Modify*** *procurement language and educate employees.*
5. ***Communicate*** *your success.*

Federal, state, and local governments could save at least $139 million annually by reducing energy waste if they purchase and use ENERGY STAR labeled products. Reducing this energy waste would prevent greenhouse gas emissions equivalent to over 4.1 million metric tons of carbon by the year 2010 — that's equivalent to lighting more than 17.7 million homes per year.

Green Mountain College saves more than 260,000 kilowatt hours (kWh) annually since installing ENERGY STAR labeled light fixtures. This is equivalent to removing the air pollution generated from 40 cars annually.

Money Isn't All You're Saving

January 2002

Finding Money For Your Energy Efficiency Projects

A Primer for Public Sector Energy, Facility, and Financial Managers

From the U.S. Environmental Protection Agency's ENERGY STAR® Program

Are you having trouble getting energy efficiency projects approved and implemented? If so, this article from ENERGY STAR is for you. It describes how tax-exempt lease purchase agreements and performance contracts may offer you a practical solution when no money is available in the current budget for further improvements. This article also provides clear financial reasoning and cost modeling, which demonstrate that energy efficiency projects really can pay for themselves out of existing operating budgets. It equips you to persuade the decisionmakers within your school district, city, county, community college, university, or state that energy efficiency upgrades should be implemented as soon as possible.

ENERGY STAR is a voluntary government-industry partnership offering a suite of resources and tools to help businesses, government agencies, organizations, and consumers become more energy efficient in the workplace and at home. Through ENERGY STAR, an organization can learn how to apply energy best management practices and technologies that result in improved energy performance and financial well-being.

Introduction

While the reasons for delaying projects may vary, most energy efficiency projects stall due to one or a combination of the following perceived barriers:

(1) Lack of money.
(2) Lack of time or personnel to design and plan the projects because of other, higher priorities.
(3) Lack of internal expertise to implement the projects.

> *"Anyone who doesn't have an energy efficiency program is acting fiscally irresponsible."*
> – Walter George
> Anne Arundel County Public Schools, Maryland
> July 2001

This article focuses on the perception that no money is available in your organization's budget for energy efficiency projects. As you will see later, resolving this first barrier frequently provides the solution to the second two.

When you propose energy projects to the decisionmakers within your city, county, school district, community college, university, or state, the financial barriers they commonly raise can be characterized as follows:

- If it is not in this year's budget, it simply has to wait.
- Equipment improvements must be paid from the capital budget.
- Paying lower interest (by floating bonds) or no interest (by delaying the project and planning it into future budgets) saves more money and, therefore, is in the best interest of our organization.
- Taxes or fees will have to be increased to pay for these improvements.
- Performance contracting with an energy service provider (ESP) is expensive and unreliable.
- Tax-exempt lease-purchase agreements don't lend themselves to energy projects and are expensive alternative funding solutions.

Some of these comments may sound familiar. In fact, they are common misconceptions, which the information presented here can help you overcome. This article defines some standard financial terms, presents financing options, and shows a "cost of delay" model that has proven effective in gaining the support of financial and administrative officials for energy efficiency projects. The next time you face your board, city council, chief financial officer, chief operating officer, or other decisionmaker, you will be equipped to persuade them that energy efficiency upgrades can pay for themselves and should be implemented as soon as possible.

The brief case studies appearing in the sidebars throughout this article illustrate how three different public entities worked through their financial hurdles to implement energy efficiency upgrades. For example, when Brooklyn College (part of the City College of New York) officials realized they did not have enough money to install all the energy-efficient equipment needed to successfully complete their project, they chose a lease-purchase agreement performance contract and spent the dollars they anticipated saving from future operating budgets. As no capital budget commitment was necessary, the college purchased and installed the new equipment right away. In Shenendehowa Central School District, officials knew that a tax increase was out of the question. Using a guaranteed performance contract, they found a way to pay for energy improvements within their existing approved budgets. State of New Hampshire officials insisted on minimizing any impact on the state's bond (credit) ratings while energy efficiency improvements were being implemented. After careful study, state officials settled on a master lease program that financed energy efficiency improvements using the dollars saved from future utility bills.

Brooklyn College, New York City
By 1998, most of the equipment that produced chilled water for campus air conditioning systems was approaching the end of its useful life. Because this equipment was decentralized, the college faced much higher replacement costs than it would have for a shared chilled water plant. The total cost of the project was $23 million, of which The Dormitory Authority of the State of New York (DASNY) agreed to provide $15 million. Brooklyn College officials, however, were still $8 million short of the funds necessary to install the most efficient equipment they knew should be purchased; and using capital budget dollars was not an alternative. So they negotiated an energy efficiency performance contract that included an $8 million lease-purchase agreement to cover the shortfall. The energy service provider projected the savings over 12 years and structured the lease-purchase payments to be 85 percent of the projected savings—guaranteeing that the savings realized in the project would be sufficient to cover the lease payments. The agreement also included non-appropriation language, making the lease payments an operating rather than a capital expense.

What do these three examples have in common and why were their outcomes successful? The State of New Hampshire, Brooklyn College, and Shenendehowa Central School District all found that using performance contracts with reputable energy service providers (ESPs)—combined with tax-exempt lease-purchase agreements as the financing vehicle—provided the best, most cost-effective solution. Other public agencies undertaking similar energy efficiency projects include Pennsylvania's Allegheny County, which turned to performance contracting when its capital budget was reduced by 20 percent; Mississippi, Virginia, and Maryland, which initiated statewide Energy Efficiency Master Lease Programs (MLPs); and Florida's Miami-Dade County School District, which added energy efficiency projects to an existing lease-purchase Certificates of Participation (COPs) program as the lowest cost alternative.

Background: Operating Expenses versus Capital Expenses

To argue the advantages of a tax-exempt lease-purchase agreement and a performance contract, facility managers must be conversant with the roles that the operating expense budget and the capital expense

budget play in their organization. Typically, ***capital expenses*** are those that pay for long-term debt and fixed assets (such as buildings, furniture, and school buses) and whose repayment typically extends **beyond** one operating period (one operating period usually being 12 months). In contrast, ***operating expenses*** are those general and operating expenses (such as salaries or supply bills) incurred **during** one operating period (again, typically 12 months).[1] For example, repayment of a bond issue is considered a capital expense, whereas paying monthly utility bills is considered an operating expense.

The disadvantages associated with trying to use capital expense budget dollars for your energy efficiency projects are as follows: (1) these capital dollars are usually already committed to other projects; (2) capital dollars are often scarce, so your projects are competing with other priorities; and (3) the approval process for requesting new capital dollars is time consuming, expensive, and typically requires voter approval.

The advantage of using a lease-purchase agreement is that it can finance the purchase of assets, yet the repayment can be treated as an operating expense. Because the source of repayment is already in the utility line item in your operating budget, this often makes a lease-purchase agreement ideal for financing energy efficiency projects. There may be cases, however, when a lease-purchase agreement is not advisable; for example, (1) state statute or charter may prohibit such financing mechanisms from being used; (2) the approval process may be too difficult or politically driven; or (3) other funds are readily available, e.g. bond funding that will soon be accessible, or excess money exists in the current capital or operating budgets.

Understanding Performance Contracts and Tax-Exempt Lease-Purchase Agreements

Performance Contracts

In many parts of the United States, performance contracting is a common way to implement energy efficiency improvements and frequently covers financing for the needed equipment, should you chose not to use internal funds. Properly structured Performance Contracts can be treated as an operating expense. Common financing options under a performance contract include (1) ESP-based financing and (2) tax-exempt lease-purchase agreements. As a facility manager, you can overcome the "lack of time and lack of expertise" barriers mentioned at the beginning of this article by outsourcing the work to qualified, reputable energy service providers using a performance contract. Under a performance contract, the ESP insures that the actual energy savings will match the projected savings, and the contract identifies the procedures by which these savings will be measured and verified. In a Guaranteed Savings Agreement (GSA)—the most popular type of performance contract used in the public sector—the energy performance of the equipment is guaranteed by the ESP or an insurance company, who agree to reimburse the sponsoring organization for any shortfalls. A GSA bundles equipment purchasing and performance guarantees, and it may also include financing, energy costs, and maintenance. ESPs usually borrow at taxable interest rates, while public agencies are able to issue lower cost tax-exempt obligations. As a result, GSAs usually incorporate tax-exempt lease-purchase agreements as the underlying financing instrument.

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[1] According to Barron's Dictionary of Accounting Terms, capital expenditures are "outlays charged to a long-term asset account. A capital expenditure either adds a fixed asset unit or increases the value of an existing fixed asset." Operating expenditures are costs "associated with the … administrative activities of the [organization]."

Tax-Exempt Lease-Purchase Agreements

Tax-exempt lease-purchase agreements are the most common public sector financing alternatives that are paid from operating expense dollars rather than capital expense dollars. This is an effective alternative to traditional debt financing (bonds, loans, etc.) and allows a public organization to pay for energy upgrades by using money that is already set aside in its annual utility budget. When properly structured, this type of financing mechanism allows public sector agencies to draw on dollars saved from future utility bills to pay for new, energy-efficient equipment today.

A tax-exempt lease-purchase agreement, also known as a municipal lease, is like an installment-purchase agreement rather than a rental agreement. Under most rental agreements (such as those used in car leasing), the renter returns the asset (the car) at the end of the lease term, without building any equity in the asset being leased. A lease-purchase agreement, however, presumes that the public sector organization will own the equipment after the term expires. Further, the interest rates are appreciably lower than those on a taxable commercial lease-purchase agreement because the interest paid is exempt from federal income tax for public sector entities. In addition, a tax-exempt lease-purchase agreement usually does **not** constitute a long-term "debt" obligation because of non-appropriation language written into the agreement. This language effectively limits the payment obligation to the organization's current operating budget period. Therefore, if for some reason future funds are not appropriated, the equipment is returned to the lender, and the repayment obligation is terminated at the end of the current operating period without placing any obligation on your future budgets.

Public sector organizations—schools, community colleges, universities, and local and state governments—should consider using a lease-purchase agreement to pay for energy efficiency equipment when the projected energy savings will be greater than the cost of the equipment plus financing, especially when a creditworthy energy service provider guarantees the savings. If your financial decisionmakers are concerned about exceeding operating budgets, you can assure them that this will not happen because lease payments can come from the dollars to be saved on utility bills once the energy efficiency equipment is installed. Utility bill payments are already part of any organization's standard year-to-year operating budget. Although the financing terms for lease-purchase agreements may extend as long as 12 to 15 years, they are usually less than 10 years and are limited by the useful life of the equipment.

The State of New Hampshire

The New Hampshire Building Energy Conservation Initiative of 1997 prompted the evaluation of how to improve the energy efficiency of state-owned buildings. However, the state's Treasury Department was concerned about increasing the state's debt, which might adversely affect its credit rating. After discussions with energy service providers (ESPs) and finance professionals, state officials determined that by separating the financing activity from the technical performance obligations under a performance contract, the state could obtain lower cost financing (i.e., by setting up a tax-exempt master lease program (MLP) to underwrite the performance contracts). After a year of reviewing similar programs, all parties agreed that the non-appropriation language of the MLP would allow the lease to be repaid from operating funds and thus have minimal impact on the state's credit rating.

This low-cost financing permitted New Hampshire officials to install a broader range of energy-efficient equipment than they would have if they had used the financing bundled into the ESP's performance contract. As a result, more projects met the legislated payback requirements. New Hampshire's credit rating did not change as a result of the energy conservation MLP. And, the state got better pricing by consolidating all their projects under one agreement.

Tax-Exempt Lease-Purchase Payments are Not Considered "Debt." Because of the non-appropriation language typically included in tax-exempt lease-purchase agreements, this type of financing may be considered an operating expense rather than a capital expense. As a result, the payments would not be considered "debt" from a legal perspective in most states and would rarely require public approval. Your organization will, however, have to assure lenders that the energy efficiency projects being financed are considered of *essential use* (i.e., essential to the operation of your organization), which minimizes the non-appropriation risk to the lender.

How is Debt Defined? It is important to be aware of the different interpretations of "debt" from three perspectives—legal, credit rating, and accounting. As mentioned above, most lease-purchase agreements are not considered "legal debt," which may prevent the need to obtain voter approval in your locality. However, credit rating agencies, such as Moody's and Standard & Poor's, do include some or all of the lease-purchase obligations when they evaluate a public entity's credit rating and its ability to meet payment commitments ("debt service"). These two perspectives (legal and credit rating) may differ markedly from the way lease-purchase agreements are treated (i.e., which budget is charged) by your own accounting department and your organization's external auditors.

In general, lease-purchase payments on energy efficiency equipment are small when compared to the overall operating expense budget of a public organization. This usually means that the accounting treatment of such payments may be open to interpretation. Most public sector entities recognize that the energy savings cannot occur if the energy efficiency projects are not installed. As such, the projects' lease-purchase costs (or the financing costs for upgrades) can be paid out of the savings in the utility budget. Outside auditors, however, may take exception to this treatment if these payments are considered "material" from an accounting perspective. Determining when an expense is "material" is a matter of the auditor's professional judgment.[2] While there are no strictly defined accounting thresholds, as a practical guide, an item could be considered material when it equals or is greater than 5 percent of the total expense budget in the public sector (or 5 percent of the net income for the private sector). For example, the energy budget for a typical medium-to-large school district is around 2 percent; therefore, energy efficiency improvements will rarely be considered "material" using this practical guideline.

Know Your State's Rules. Many public entities already lease equipment. Adding an energy project to an existing lease agreement may be surprisingly easy, especially if a Master Lease is in place with a lending institution. Governing statutes vary from state to state;[3] and the use of tax-exempt lease-purchase agreements may differ across schools, municipalities, and counties even within the same state (see map). Public sector organizations should always consult legal counsel before entering into lease-purchase agreements.

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[2] According to Dr. James Donegan, Ph.D. (Accounting), Western Connecticut State University, an amount is "considered material when it would affect the judgment of a reasonably informed reader when analyzing financial statements."

[3] California and Indiana use "abatement leases" rather than "non-appropriation" leases Under abatement theory, the lease is not considered "debt" because the yearly payment is limited to the ability to use the asset during the current operating period; if the asset cannot be used, then the payment can be reduced or "abated".

States Take Advantage of Energy Savings To Fund Energy Efficiency Projects

Many states have recognized that the savings realized by installing energy efficiency equipment can be used to finance the equipment. For example:

- In Pennsylvania, public sector organizations are authorized to use funds designated for operating expenses, utility expenses, or capital expenditures to meet lease-purchase or installment payments under performance contracts.[4]
- School districts in California are authorized to enter into energy efficiency financing relationships that "can be repaid from energy cost avoidance savings."[5]
- In Florida, "it is the policy of this state to encourage school districts, state community colleges and state universities to reinvest any energy savings resulting from energy conservation measures into additional energy conservation efforts."[6]
- In Minnesota, "a district annually may transfer from the general fund to the reserve for operating capital account an amount up to the amount saved in energy and operation costs as a result of guaranteed energy savings contracts."[7]
- In Texas, lease-purchase payments are to be "made from maintenance taxes" and "shall not be considered payment of indebtedness."[8]

Many other states support the idea of funding energy efficiency projects from future utility bill savings. Obtaining your accounting department's cooperation may be easier than you think, especially if determining the legal precedent in your state is a matter of doing a little research

Getting the Best Deal

If tax-exempt lease-purchase financing is so good, why are some public organizations reluctant to use it to fund energy efficiency projects? One reason may be the higher stated interest rate when compared to that of a bond. Recently, a financial manager was heard to say, "We float bonds at around 4 percent; why should we enter into a tax-exempt lease-purchase agreement at 5 percent?" There is, unfortunately, a common misconception that the lowest interest rate is always the best deal. If your finance decisionmakers make this assumption, you need to remind them that two factors must be addressed to determine the best financing alternative: (1) net interest costs and (2) the costs of delay.

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[4] Pennsylvania Guaranteed Energy Savings Act 29 of 1996 - §5(b)

[5] California Education Code 17651 (a)

[6] Florida Statutes Title XVI, Chapter 235.215 (1)

[7] Minnesota Statutes 2000 Chapter 123B.65 Subdivision 7

[8] Texas Statutes Chapter 271 – Public Property Finance Act - §271.004

Net Interest Costs

Every borrower seeks the best deal. As stewards of public funds, managers in the nation's public schools, community colleges, state universities, and local or state government agencies seek to provide the best quality service for the lowest net cost. Bonds at 4 percent interest sound better than a lease-purchase agreement at 5 percent; however, the real savings become clear only when the net interest cost has been calculated. Typically, lease-purchase agreements do not include any extra costs or fees outside the interest rate (with the exception of fees related to setting up an escrow account needed to manage funds during the construction period in case "construction progress payments" are necessary). The legal opinion for a lease-purchase agreement usually requires little or no research and can be provided by internal counsel.

On the other hand, a bond will require obtaining an extensive (and expensive) legal opinion, setting up a trustee, and retaining accounting services to ensure compliance. Bond issues may also incur costs to rate the bond, obtain insurance, set aside a cash reserve for the first year, and pay for printing or marketing fees—additional costs that can easily exceed $50,000. Adding these bond issuance costs to the cost of energy efficiency projects can dramatically change the economics of the projects, especially for smaller projects. Therefore, the financing alternative that generates the lowest total payment (the net interest cost) is the best deal—and this may **not** be the one with the lowest stated interest rate.

Political, as well as financial, issues must be taken into account when determining lowest net cost. A tax-exempt lease-purchase agreement is not considered legal debt and is typically easy to implement, whereas voter approval must be obtained to enter into new debt, which is a capital expenditure. Therefore, two additional costs must be added to the aforementioned calculation: (1) the out-of-pocket cost of advertising and staffing for a vote, and (2) the intangible political cost of asking the taxpayers to approve "new debt." Frequently, this political cost is the greater of the two.

Shenendehowa Central School District, Clinton Park, New York

In 1996, the school district was facing escalating energy and maintenance costs for seven buildings constructed between 1952 and 1969. During that period, lowest first-cost had been the primary consideration, instead of life-cycle cost, when selecting the energy equipment. Three of the buildings relied exclusively on electricity for heating and air conditioning. Shenendehowa officials needed to make capital improvements at these facilities, but budgets were already strained. Further, they were unwilling to approach taxpayers for additional bond money.

To address these problems, school officials decided to install new energy-efficient equipment that could be paid for from future energy cost savings. With assistance from the New York State Energy Research and Development Agency (NYSERDA), they issued a Request For Proposal (RFP) for an energy service provider (ESP) that could provide a performance contract to address their needs. The winning ESP guaranteed the equipment performance and energy savings, which were verified using rigorous measurement and verification techniques.

Instead of bundling the financing under the performance contract, the school district chose to obtain the funds directly from a commercial lender using a tax-exempt lease-purchase agreement for a term of 10 years. The lease-purchase agreement contained non-appropriation language, which limited payments to the operating budget savings, thereby avoiding the capital budget. This financing option allowed Shenendehowa school officials to successfully install needed energy-efficient equipment without raising taxes.

The Costs of Delay

Quantifying the costs of delaying the installation of an energy efficiency project adds a new dimension to the financial decision. School district and local or state government officials often feel that postponing the installation of energy efficiency equipment until such time as the operating or capital budget dollars are available—rather than financing the installation immediately—is a better financial decision. They reason that if internal budget dollars are used, paying interest can be avoided completely. However, delaying the installation will delay the point at which energy savings can begin.

- For example, if a $500,000 project has a 5-year simple payback, the average monthly savings will be about $8,333 per month ($500,000 divided by 60 months). Under this scenario, if the project is delayed by 12 months, the public sector organization will pay the local utility $100,000 more (12 times $8,333) during the delay period than it would have if energy efficiency equipment had been installed immediately.

- If financing for the lease-purchase is available at 5 percent for a term of 7 years (reasonable conditions for a traditional project), the *total* interest paid during the 7-year period will be $93,624 in absolute dollars, or about $6,375 *less than* the energy savings realized during the first 12 months of use ($100,000 minus $93,624). In other words, the savings realized by installing the equipment immediately rather than waiting for 12 months effectively reduces the interest rate for borrowed funds to less than 0 percent!

- The savings are in fact even greater, considering that a dollar paid for interest 7 years in the future is worth less than a dollar saved this year. Allowing for a real cost of money (or discount rate) of 3 percent, the $93,624 in financing charges translates to $84,352 in current dollars, or a real savings of almost $15,650 if equipment is financed and installed right away rather than waiting for internal funds to become available. Using third-party financing initially and paying it off early with approved future budget dollars may be the way to maximize an energy project's total cost savings.

This cost of delay calculation is more complicated when comparing two different financing alternatives with different interest rates and terms, but the result is no less stark. For example, compare a bond or loan issued at 4 percent interest against a lease-purchase agreement offered by a local lender at 5 percent interest for the same project. Ignore, for the moment, any additional fees that must be added to the bond and focus on the ***unavailability of the funds for 12 months***, while the lease-purchase funds are available immediately. A comparison of the consequences of these examples, based on the same $500,000 equipment cost and 5-year simple payback results in the following:

	Option 1	Option 2
Instrument	Lease-purchase	Loan or Bond
Budget	Operating[9]	Capital
Term	7 years	7 years
Interest rate	5.0%	4.0%
Monthly payment	$7,067	$6,834

Surprisingly, the difference in the monthly payments on this $500,000 project is only $233 a month ($7,067 minus $6,834), while the energy efficiency savings lost would be equal to $8,333 a month (as shown in the text above).

The key question becomes: How long will it take for the lost energy savings to consume the total savings realized from the lower interest rate financing? The answer: Just over 2 months (see Appendix B for calculation).

[9] Non appropriation or Abatement leases; actual treatment may vary by state.

The following chart demonstrates these costs of delay based on waiting for the 4.0 percent "cheaper money" (rounded to the nearest $100):

Each month the project is delayed	Savings or Loss
1	$8,700
2	$300
3	($8,000)
4	($16,300)
5	($24,700)
6	($33,000)
7	($41,300)
8	($49,700)
9	($58,000)
10	($66,300)
11	($74,700)
12	($83,000)

As shown, a delay of 12 months amounts to a loss of $83,000, or almost 17 percent of the original project cost. (Please contact Melissa Payne, USEPA ENERGY STAR, at payne.melissa@epa.gov if you would like a copy of the Microsoft Excel™ spreadsheet that calculates these costs of delay, using your own project specifics).

The true cost of delay may be even greater, as none of these calculations includes the higher administrative costs of the loan or bond, nor the environmental benefits of installing the energy efficiency equipment sooner rather than later.

Conclusion: Improving Energy Performance and Fiscal Management

Energy efficiency equipment differs from other capital equipment. Because the dollars saved by installing energy efficiency equipment can be used to pay for its financing, this equipment can be installed without having to increase operating costs or use precious capital budget dollars. In fact, as long as the lease payments are lower than the energy dollars saved, a positive cash flow is created that can be used for other projects. Extending the repayment terms will reduce the monthly payment, providing even more cash.

In today's tightening economy, with uncertain and often increasing energy prices, a good energy efficiency policy is a necessity. As stewards of significant assets, public sector facilities and finance managers must aggressively manage all costs and maintain effective cash management programs. Accelerating the installation of energy efficiency equipment will improve not only your facilities but also your financial statement. In addition, it will demonstrate that public sector managers are acting responsibly as stewards of their constituents' resources.

ENERGY STAR has resources and tools available to assist your organization in developing a roadmap to better energy performance. To learn more about ENERGY STAR, please contact Melissa Payne, USEPA ENERGY STAR, at payne.melissa@epa.gov.

Appendix A

Chart of all financing options:

	CASH	BONDS	MUNICIPAL LEASE	PERFORMANCE CONTRACTS
Interest Rates	N/A	Lowest tax-exempt rate	Low tax-exempt rate	Can be taxable or tax-exempt
Financing Term	N/A	May be 20 years or more	Up to 10 years is common and up to 12-15 years is possible for large projects	Typically up to 10 years but may be as long as 15 years
Other Costs	N/A	Underwriting legal opinion, insurance, etc.	None	May have to pay engineering costs if contract not executed
Approval Process	Internal	May have to be approved by tax payers or public referendum	Internal approvals needed. Simple attorney letter required	RFP usually required, internal approvals needed
Approval Time	Current budget period	May be lengthy – process may take years	Generally within one day	Generally within 2-3 days once the award is made
Funding Flexibility	N/A	Very difficult to go above the dollar ceiling	Can set up a Master Lease, which allows you to draw down funds as needed	Relatively flexible. An underlying Municipal Lease is often used
Budget Used	Either	Capital	Operating	Operating
Largest Benefit	Direct access *if* included in budget	Low interest rate because it is a general obligation of the public entity	Allows you to buy capital equipment using operating dollars	Provides performance guarantees which help approval process
Largest Hurdle	Never seems to be enough money available for projects	Very time consuming	Identifying the project to be financed	Identifying the project to be financed and selecting the ESCO

Appendix B

How long will it take for the lost energy savings to consume the total savings realized from the lower interest rate financing? The calculation is straightforward and can be done using any financial calculator or Excel/Lotus spread sheet. The variables in the formula are:

PV= present value
n= number of payments
pmt = monthly payment
FV = future value
i = interest

If you use a financial calculator, by entering four of the five values, the calculator will automatically calculate the fifth value (or unknown one). Using a financial calculator, start by entering the monthly payment of the readily available (more expensive) financing. We know the term (n) is 7 years, or 84 months, the Future Value (FV) is zero. Use the interest rate of the lower, "better deal" as the discount rate in order to calculate the present value (PV). This calculation provides the Net Present Value of the interest rate differential, which in this case is $17,013 more than the original project cost. Based on the monthly energy efficiency savings of $8,333, the break-even point is 2.0 months ($17,013 divided by $8,333).

Appendix C

Putting Together a Proposal

In developing a proposal for an energy efficiency project to present to your agency's financial decisionmakers, the following steps are recommended:

1. Define the decision process and decisionmakers.
   - Whose approval is needed for a decision?
   - What are the decisionmaker's sensitivities or "hot buttons?"
   - How does the project respond to organizational priorities?
   - Who are the potential "champions" of this project?

2. Quantify why this is a good project to implement.
   - How much will energy costs be reduced?
   - What are the other associated cost impacts, such as reduced labor costs, O&M costs, and life-cycle costs?
   - What are the likely employee impacts (e.g., on productivity or morale)?
   - Does the project meet/exceed established profitability criteria (such as payback period or return-on-investment)?
   - Does it create positive cash flow? How much? How might any extra saved energy dollars be spent to support other pressing projects or programs?
   - Does this help address indoor air quality (IAQ) problems or reduce the deferred maintenance budget?
   - What are the associated environmental impacts and public relations opportunities?

3. Show how the project can be funded.
   - What subsidies/credits are available to reduce net costs (such as from your state energy office, utility, or public benefits program, if deregulated)?
   - Can a performance contract and tax-exempt lease purchase agreement be used if other funds are not available? What would be the terms and conditions of such an arrangement?

4. Identify the costs of delay.
   - What would be the cost of waiting for internal funds to become available?
   - What would be the cost of waiting for lower interest-rate financing to become available?

EnergyIdeas Clearinghouse

Energy Efficiency FACTSHEET

Energy Efficient Procurement Resources

Publications and Reports

Buying Smart: Blueprint for Action. Outlines innovative procurement strategies used by state governments in the acquisition of information technology commodities.
http://www.naspo.org/whitepapers/buyingsmart2.cfm

Public Procurement and Energy Efficiency in the Pacific Northwest: Final Report to the Northwest Energy Efficiency Alliance, by the Washington State University Energy Program, 1999.
http://www.energy.wsu.edu/ei/Files/Procurement/procure.htm

Purchasing for Waste Prevention. A section of INFORM's Community Waste Prevention Tool kit, a resource to help community leaders and grassroots environmental organizations design and implement effective solid waste prevention programs in their towns and cities.
http://www.informinc.org/cwp2procstrat.htm

Reduce, Reuse, Recycle, and Purchase Recycled Products. Section from the Pacific Northwest National Laboratory "Green Guide for Trimming Your Waste."
http://www.pnl.gov/esp/greenguide/appe.html

Topical Reports: Environmental Purchasing.
Pacific Northwest Pollution Prevention Resource Center (PPRC), 2000. A comprehensive resource document with links to procurement related resources.
http://www.pprc.org/pprc/pubs/topics/envpurch.html

Associations, Organizations and Programs

Center for Advanced Purchasing Studies. An independent research organization associated with NAPM that provides research and data on best practices, benchmarking and focus studies.
http://www.capsresearch.org/

Institute of Supply Management (ISM) (Formerly National Association of Purchasing Management (NAPM)): Involved in research, education and standards of excellence in purchasing.
http://www.ism.ws/

King County (WA) Environmental Purchasing Program encourages municipal procurement of recycled and environmentally preferable materials.
http://www.metrokc.gov/procure/green/

National Association of State Procurement Officials (NASPO)
http://www.naspo.org/

Managed by:
Cooperative Extension Washington State University Energy Program

Funded by:
Northwest Energy Efficiency Alliance

National Institute of Government Purchasers
http://www.nigp.org/index.htm

Oregon Public Purchasing Association is a local chapter of the National Institute of Government Purchasing,
http://home.teleport.com/~oppanigp/

State and Local Government Purchasing Initiative, Consortium to Save Energy (CEE).
http://www.cee1.org/gov/purch/purch-main.php3

Policies, Standards and Certification

Environmentally Preferable Purchasing (EPP), Environmental Protection Agency (EPA). Includes Guiding Principles, Standards Development, the "Top 20 Priorities for EPP Pioneer Pilot Projects," and EPP Tools.
http://www.epa.gov/opptintr/epp/

Database of Environmental Information for Products and Services, EPA. Contract language and specifications, environmental standards and guidelines for over 600 products and services.
http://yosemite1.epa.gov/oppt/eppstand2.nsf/Pages/Homepage.html?Open

Green Seal: Product Standards and Certification
http://www.greenseal.org/standards.htm

Electronic Purchasing and Product Information Sites

Buying Energy Efficiency Products, from the Federal Energy Management Program. Provides links to procurement resources and Product Energy Efficiency Recommendations.
http://www.eren.doe.gov/femp/procurement/

Comprehensive Procurement Guidelines (CPG), from the EPA. Part of the governments "buy-recycled" program. Includes background information, product fact sheets, and a searchable supplier database.
http://www.epa.gov/cpg/

Database of Environmental Information for Products and Services, EPA. Contract language and specifications, and environmental standards and guidelines for over 600 products and services.
http://yosemite1.epa.gov/oppt/eppstand2.nsf/Pages/Homepage.html?Open

Energy Star Products, from the Environmental Protection Agency.
http://www.eren.doe.gov/femp/procurement/

Forest Stewardship Council (FSC) Certified Products
http://www.certifiedwood.org/search-modules/SupplierSearch.ASP

Green Product Information, from Oikos: The Green Building Source.
http://oikos.com/products/

Product Recommendations, from the Green Seal Certification Program.
http://www.greenseal.org/recommendations.htm

Recycled Commodities, a database provided by the National Association of State Purchasing Officials.
http://www.state.fl.us/bpsr/drc_notice.html

Renewable Energy On-line Database
http://www.jxj.com/suppands/renenerg/

Energy Organizations

EnergyIdeas Clearinghouse is an energy information and technical assistance service available to regional customers. The Clearinghouse provides information on technologies, programs, practices, energy news, training events and products. The Clearinghouse offers easy access by phone, fax, email, or website Monday-Friday 6 a.m.-5 p.m. 1-800-872-3568, info@energyideas.org.
http://www.EnergyIdeas.org

Northwest Energy Efficiency Alliance is a regional organization dedicated to transforming markets for energy-efficient technologies and practices to encourage the efficient use of energy and reduce costs to consumers and the electric system. The Alliance is funded by regional utilities and the Bonneville Power Administration.
http://www.nwalliance.org

Northwest Energy Efficiency Council is a business association of the energy efficiency industry with a membership of more than 70 companies throughout the Pacific Northwest. Members include energy service companies, engineering and design firms, equipment sales companies, policy consultants, and energy efficiency program designers, managers and evaluators. The Council's mission is to promote policies and programs that enhance market opportunities for energy efficiency.
http://www.neec.net

Oregon Office of Energy focuses on three main program areas — acquiring energy conservation, cleaning up nuclear waste, and developing new energy supplies. They demonstrate the workability of new energy-saving technologies; provide technical information to consumers on ways to save energy; train building operators to run their equipment efficiently; recommend energy standards for homes, buildings and appliances; and promote regulatory reforms that put conservation on a more equal footing with conventional resources.
http://www.energy.state.or.us

Washington State University Cooperative Extension Energy Program provides energy programs and services. They provide training, clearinghouse services, technical assistance, and conduct research on energy topics.
http://www.energy.wsu.edu

The EnergyIdeas Clearinghouse provides information on a broad range of energy technologies for customers of Pacific Northwest utilities. EIC provides a searchable website and has a team of energy specialists ready to respond to technical information requests by phone or email. Funded by the Northwest Energy Efficiency Alliance.

Web:	http://www.EnergyIdeas.org
Regional Hotline:	1-800-872-3568
Email:	info@energyideas.org

Additional Energy Resources

Energy Star
"ENERGY STAR® is a voluntary partnership among the U.S. Department of Energy, the U.S. Environmental Protection Agency, product manufacturers, local utilities, and retailers. Partners help promote efficient products by labeling with the ENERGY STAR® logo and educating consumers about the benefits of energy efficiency." Includes information about products that have the Energy Star label, which can be used as a guide for purchasers. Products listed include lights, office equipment, appliances and other equipment.
www.energystar.gov/ info@energystar.gov phone: 888-STAR-YES

Energy Star Purchasing Initiative site
Specific information for purchasing includes:
- Develop life cycle cost analyses
- Prepare your bid
- Specify a particular brand
- Educate employees about new policies
- Gain recognition for commitment to the environment and savings
- Overcome barriers
- Discover benefits

Also found on the website: "Savings Calculators," which can be used to compare Energy Star products with non-Energy Star products.

www.energystar.gov/index.cfm?c=bulk_purchasing.bus_purchasing

State and Local Government Purchasing Initiative
A fact sheet describing a project from the Consortium for Energy Efficiency, Inc. The Consortium is "a non-profit, public benefit corporation that uses the power of mass markets to advance super energy-efficient technologies that benefit consumers and the environment." Other initiatives and projects can be found on the "about" page.

www.ceeformt.org/gov/purch/purch-main.php3

Energy Star Purchasing Tool Kit

A Guide to Buying Energy-Efficient Products, US Environmental Protection Agency, US Department of Energy, 1999. A guide that includes information for governments and organizations on: product specifications, energy efficiency criteria, sample procurement language for contracts, a simple savings calculator, a comprehensive listing of resources for specific products, and information about additional savings opportunities.
PPRC Library Resource

Available from EPA: 1-888-STAR-YES

Energy Star Purchasing

Communications Starter Kit, US Environmental Protection Agency, US Department of Energy, 1999. A guide for developing a step-by-step communications program about the importance of energy efficient products to your agency/organization.
PPRC Library Resource

Available from EPA: 1-888-STAR-YES

U.S. Department of Energy - Energy Efficiency and Renewable Energy
Federal Energy Management Program

Technologies: Energy-Efficient Products

Training for Energy-Efficient Procurement

FEMP offers on-site training for buying energy-efficient products. The training covers specifics on how to meet the Federal Acquisition Requirement (CFR 48, Part 23) (PDF 52 KB, 3 pp) and the Executive Order 13123 (PDF 103 KB, 12 pp) directive to purchase ENERGY STAR® products and products in the top 25th percentile of energy efficiency (for products not covered by ENERGY STAR®). Information also is presented on how to meet Executive Order 13221's directives on purchasing low power standby devices. Download Acrobat Reader.

For more information on the training course, contact the DOE-EERE Information Center at 1-877-337-3463. To order the latest FEMP *Training Catalog* and other resources, you can also call the DOE-EERE Information Center or order on line.

Environmentally Preferable Purchasing:
A Getting Started Guide

Sample Contract Language, Specifications, and Policies

Russell Unger
Legislative Counsel

THE COUNCIL

Report of the Governmental Affairs Division
Marcel Van Ooyen, Legislative Director

Proposed Int. No. 536-A

By Council Members Gennaro, Brewer, Clarke, Fidler, Gerson, Jackson, James, Liu, Lopez, Martinez, Nelson, Palma, Quinn, Recchia Jr., Sanders Jr., Seabrook, Sears, Stewart, Vallone Jr., Weprin, Koppell, Lanza, Moskowitz, DeBlasio, Barron, Perkins, Avella, McMahon, Foster, Reyna, Monserrate, Yassky, Gonzalez and Gioia

A Local Law

To amend the administrative code of the city of New York, in relation to the purchase of energy efficient products, and to repeal subdivisions a, c, d, e and f of section 6-127 of such code.

Be it enacted by the Council as follows:

Section 1. Statement of findings and purpose. Recognizing the need for energy efficiency, the United States Environmental Protection Agency (EPA) and the United States Department of Energy (DOE) decided in 1992 to promote the purchase of energy efficient products through an innovative labeling program. The Energy Star labeling program tags products that meet energy efficient criteria, and as a result, reduce overall energy use, lessening the amount of fossil fuel being burned by power plants and the amount of greenhouse gases and other pollutants emitted into the atmosphere.

Through the Energy Star program, manufacturers and retailers sign voluntary agreements allowing them to place Energy Star labels on products that meet or exceed energy-efficiency guidelines set by the EPA and the DOE. Manufacturers and retailers also can use the label in product packaging, promotions and advertising for qualified

products. Most Energy Star labeled products have the same or better performance, features, reliability, and price as conventional models.

Federal buyers are directed by Federal Acquisition Regulation Part 23 and Executive Orders 13123 and 13221 to purchase products that are Energy Star labeled or products that are designated to be in the upper 25% of energy efficiency in their class, as well as products with low standby power. In addition, federal agencies are required to reduce their energy use by 35% by 2010 in comparison to 1985 levels. In order to assist agencies in meeting these and similar requirements, the DOE established the Federal Energy Management Program ("FEMP"), which provides federal agencies with energy efficiency recommendations that exceed the requirements for Energy Star certification.

Energy Star labeled and FEMP recommended office equipment save energy by automatically entering a low-power mode when not in use and by using less energy when in standby. The energy-efficient models have all of the performance features of standard office equipment, but help to eliminate energy waste through special power management features. Energy Star labeled and FEMP recommended office products use about half as much electricity as conventional office equipment, thereby significantly reducing energy costs. Accordingly, the Council declares it is reasonable and necessary to require the use of energy efficient products.

§2. Subdivisions a, c, d, e and f of section 6-127 of the administrative code of the city of New York are REPEALED.

§3. Title 6 of the administrative code of the city of New York is amended by adding a new subchapter 4 to chapter 3, section 6-127(b) of the administrative code of the city of New York is renumbered as new section 6-310 of new subchapter 4 of chapter 3 of title 6 and amended, and the administrative code of the city of New York is amended by adding a new section 6-311 to subchapter 4 of chapter 3 of title 6 to read as follows:

SUBCHAPTER 4
ENERGY EFFICIENCY

§6-310 Energy efficiency standards.
§6-311 Enabling office equipment energy efficiency functions.

§6-310 **Energy efficiency standards.** a. Any [In any solicitation by an agency for the purchase or lease of] energy-using product[s, the agency shall include a specification that such products], for which the United States environmental protection agency and the United States department of energy have developed energy efficiency standards for compliance with the Energy Star program, shall be ENERGY STAR labeled.[, provided that there are at least six manufacturers that produce such products with the ENERGY STAR label. Nothing herein shall preclude an agency from including a specification in a solicitation for energy-using products requiring that such products be ENERGY STAR labeled if there are fewer than six manufacturers that produce such products with the ENERGY STAR label.]

b. Any product for which the federal energy management program of the United States department of energy has issued product energy efficiency recommendations shall achieve no less energy efficiency or flow rate than the minimum recommended in such recommendations.

c. Any product in any category listed in article 4 of chapter 4 of division 2 of title 20 of the California code of regulations, for which the California energy commission has

issued product appliance efficiency regulations and for which the federal energy management program of the United States department of energy has not issued product energy efficiency recommendations, shall achieve no less energy efficiency or flow rate than the minimum recommended in such regulations.

d. Any desktop computer or desktop-derived server containing an internally mounted power supply shall meet the following requirements:

(1) minimum energy efficiency shall be 80% at 20%, 50% and 100% of rated power supply output, when tested according to a proportional allocation method of loading the power supply;

(2) minimum power factor shall be 0.9 at 100% of rated power supply output, when tested according to a proportional allocation method of loading the power supply; and

(3) total rated power supply output shall be no less than 150 watts and no more than 800 watts.

e. Any lamp shall be a fluorescent lamp, rather than an incandescent lamp, provided a fluorescent lamp is available of sufficient lumens and of an appropriate size for the intended application.

§6-311 **Enabling office equipment energy efficiency functions**. a. The power management software functions of any city-owned or leased computer, printer, facsimile machine or photocopy machine shall be calibrated to achieve the highest energy savings practicable.

b. Any computer monitor or central processing unit shall be set to enter into a low power mode after the shortest practicable period of inactivity. Any screensaver or other computer program that may interfere with the capability of a computer monitor or central processing unit to enter into a low power mode shall be disabled.

c. Any agency need not comply with the provisions of this subdivision when compliance would interfere with any agency mission or cause instability in any computer system. Notwithstanding any provision of section 6-302 of this code, this section shall apply to any product used by any agency.

§4. If any section, subsection, sentence, clause, phrase or other portion of this local law is, for any reason, declared unconstitutional or invalid, in whole or in part, by any court of competent jurisdiction, such portion shall be deemed severable, and such unconstitutionality or invalidity shall not affect the validity of the remaining portions of this law, which remaining portions shall continue in full force and effect.

§5. This local law shall take effect January 1, 2006, except that the director of environmental purchasing as appointed by the mayor, in consultation with the mayor's office of environmental coordination, shall take all actions necessary, including the promulgation of rules, to implement this local law on or before the date upon which it shall take effect. Provided, however, that this local law shall take effect only in the event that: Int. No. 534-A, a proposed local law to amend the administrative code of the city of New York, in relation to environmental purchasing and the establishment of a director of environmental purchasing, takes effect; Int. No. 545-A, a proposed local law to amend the administrative code of the city of New York, in relation to the purchase of products with recycled content, and to repeal section 6-122 and subchapter 5 of chapter 3 of title 16 of such code, takes effect; Int. No. 544-A, a proposed local law to amend the administrative code of the city of New York, in relation to the reduction of hazardous substances in

products purchased by the city, takes effect; and Int. No. 552-A, a proposed local law to amend the administrative code of the city of New York, in relation to the purchase of less toxic cleaning and other custodial products, takes effect.

RBU
LS#1486
06/14/2005

ENERGY STAR Office Products:
Sample Procurement Language

Computers and Monitors

The Vendor Must:

Provide new and repaired computers, monitors, and integrated computer-monitor systems that earn the ENERGY STAR and are configured properly for automatic energy-saving features, such as entering into low-power or sleep mode after a maximum of 30 minutes of inactivity, as per current ENERGY STAR specifications. The vendor shall provide customer support with respect to power management features, such that these features remain properly enabled and repaired if a malfunction occurs. The vendor is encouraged to visit energystar.gov for complete product specifications and an updated list of qualifying products.

Table A: Key Product Criteria for ENERGY STAR Labeled Computers

Guideline	**Power Consumption**	
• Shall enter a sleep mode within 30 minutes of inactivity • If shipped with network capability, shall sleep on networks and respond to wake events	Power Supply	Watts (W) in Sleep Mode
	Guideline A*:	
	≤ 200W	≤ 15W
	> 200W ≤ 300W	≤ 20W
	> 300W ≤ 350W	≤ 25W
	> 350W ≤ 400W	≤ 30W
	> 400W	10% of power supply's maximum continuous output rating
• Shall enter a sleep mode within 30 minutes of inactivity • If shipped with network capability, shall sleep on networks and respond to wake events	**Guideline B**:**	≤ 15% of power supply's maximum continuous output rating

* The following types of computers must be qualified under Guideline A:

$ Computers that are shipped with the capability to be on networks such that they can remain in their low-power/sleep mode while their network interface adapter retains the ability to respond to network queries.

$ Computers that are not shipped with a network interface capability.

$ Computers shipped to a non-networked environment.

EPA expects computers sold or otherwise marketed as personal computers to be qualified under Guideline A only.

** Computers that are shipped with the capability to be on networks that currently require the computer's processor and/or memory to be involved in maintaining its network connection while in sleep mode can be qualified under Guideline B. Computers qualifying under Guideline B are expected to maintain identical network functionality in and out of sleep mode.

Table B: Key Product Criteria for ENERGY STAR Labeled Monitors

Low-Power Mode	First Low-Power "Sleep Mode"	Second Low-Power "Deep Sleep" Mode
Maximum Watts in Low-Power State	≤ 15 Watts	≤ 8 Watts
Maximum Time to Enter Low-Power	≤ 30 minutes	≤ 60 minutes*

State		

*Note: The time that a monitor takes to enter into the first low power "sleep mode" and the second low-power "deep sleep" mode shall not exceed 60 minutes.

Table C: Key Product Criteria for ENERGY STAR Labeled Integrated Computer System

Guideline	**Power Consumption (Watts in Sleep Mode)**
• Shall enter a sleep mode within 30 minutes of inactivity • If shipped with network capability, shall sleep on networks and respond to wake events	≤ 35W

Additional considerations for the procurement official:

- You, or other individuals in your organization, may adjust the power management setting to conform to unique work patterns. If you have questions about activating or changing the sleep feature, refer to the owners' manual, call the manufacturer's help line, or visit www.energystar.gov/powermanagement.
- If your business operates on a local area network (LAN), be sure to specify that the power management feature on your computer is compatible with the existing network system.

Printers/Fax Machines/Mailing Machines

The Vendor Must:

Provide printers, fax machines, and mailing machines that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency as outlined below. The vendor is encouraged to visit energystar.gov for complete product specifications and an updated list of qualifying products.

Table 1. Stand Alone Fax Machines (designed to accommodate primarily A4 or 8.5" x 11" sized paper)

Product Speed In Pages Per Minute (ppm)	Sleep Mode (Watts)	Default Time To Sleep Mode
0 < ppm ≤ 10	≤ 10	≤ 5 minutes
10 < ppm	≤ 15	≤ 5 minutes

Table 2. Mailing Machines

Product Speed In Mail Pieces Per Minute (mppm)	Sleep Mode (Watts)	Default Time To Sleep Mode
0 < mppm ≤ 50 mppm	≤ 10	≤ 20 minutes
50 < mppm ≤ 100 mppm	≤ 30	≤ 30 minutes
100 < mppm ≤ 150 mppm	≤ 50	≤ 40 minutes
150 < mppm	≤ 85	≤ 60 minutes

Table 3. Standard Size Printers and Printer/Fax Combinations (designed to accommodate primarily A3, A4, or 8.5" x 11" sized paper; includes monochrome electrophotography, monochrome thermal transfer, and monochrome and color ink jet)

Product Speed In Pages Per Minute (ppm)	Sleep Mode (Watts)	Default Time To Sleep Mode
0 < ppm ≤ 10	≤ 10	≤ 5 minutes
10 < ppm ≤ 20	≤ 20	≤ 15 minutes
20 < ppm ≤ 30	≤ 30	≤ 30 minutes
30 < ppm ≤ 44	≤ 40	≤ 60 minutes
44 < ppm	≤ 75	≤ 60 minutes

Table 4. Impact Printers (designed to accommodate primarily A3 paper)

Sleep Mode (Watts)	Default Time To Sleep Mode
≤ 28	≤ 30 minutes

Table 5. Large/Wide-Format Printers (designed to accommodate primarily A2 or 17" x 22", or larger paper)

Product Speed In Pages Per Minute (ppm)	Sleep Mode (Watts)	Default Time To Sleep Mode
0 < ppm ≤ 10	≤ 35	≤ 30 minutes
10 < ppm ≤ 40	≤ 65	≤ 30 minutes
40 < ppm	≤ 100	≤ 90 minutes

Table 6. Color Printers (designed to accommodate primarily A3, A4, or 8.5" x 11" sized paper; includes color electrophotography and color thermal transfer)

Product Speed In Color Pages Per Minute (ppm)	Sleep Mode (Watts)	Default Time To Sleep Mode
0 < ppm ≤ 10	≤ 35	≤ 30 minutes
10 < ppm ≤ 20	≤ 45	≤ 60 minutes
20 < ppm	≤ 70	≤ 60 minutes

Scanners

The Vendor Must:

Provide scanners that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency as outlined below. The vendor is encouraged to visit energystar.gov for complete product specifications and an updated list of qualifying products.

Performance Characteristic	Current Criteria
Low-power Mode	≤ 12 watts
Low-power Mode Default Time	≤ 15 minutes

Copiers

The Vendor Must:

Provide copiers that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency as outlined below. The vendor is encouraged to visit energystar.gov for complete product specifications and an updated list of qualifying products.

Standard-sized Copiers

Copier Speed (copies per minute)	Low-Power Mode (watts)	Low-Power Default Time	Recovery Time 30 Seconds	Off Mode (watts)	Off Mode Default Time	Automatic Duplex Mode
0 < cpm ≤ 20	None	NA	NA	≤ 5	≤ 30 min.	No
20 < cpm ≤ 44	3.85 x cpm + 5	15 min.	Yes	≤ 15	≤ 60 min.	Optional
44 < cpm	3.85 x cpm + 5	15 min.	Recommended	≤ 20	≤ 90 min.	Optional

cpm = copies per minute

To qualify as ENERGY STAR, copier models designed to handle primarily A2 or 17" x 22" paper or larger shall meet the specifications listed below. All large format copier speeds shall be measured with respect to the number of A4-sized copies that are produced per minute.

Large Format Copiers

Copier Speed (copies per minute)	Low-Power Mode (watts)	Low-Power Default Time	Recovery Time 30 Seconds	Off Mode (watts)	Off Mode Default Time	Automatic Duplex Mode
0 < cpm ≤ 40	NA	NA	NA	≤ 10	≤ 30 min.	No
40 < cpm	3.85 x cpm +5	15 min.	Recommended	≤ 20	≤ 90 min.	No

Multifunction Devices

The Vendor Must:

Provide multifunction devices that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency as outlined below. The vendor is encouraged to visit energystar.gov for complete product specifications and an updated list of qualifying products.

Table 1. Standard-sized Multifunction Devices

Multifunction Device Speed (images per minute)	Low-power Mode (Watts)	Recovery Time 30 seconds	Sleep Mode (Watts)	Sleep Mode Default Time	Automatic Duplex Mode
0 < ipm ≤ 10	NA	NA	≤ 25	≤ 15 min	No
10 < ipm ≤ 20	NA	NA	≤ 70	≤ 30 min	No
20 < ipm ≤ 44	3.85 x ipm + 50	Yes	≤ 80	≤ 60 min	Optional
44 < ipm ≤ 100	3.85 x ipm + 50	Recommended	≤ 95	≤ 90 min	Default for both copying and printing/fax receipt
100 < ipm	3.85 x ipm + 50	Recommended	≤ 105	≤ 120 min	Default for both copying and printing/fax receipt

ipm= images per minute

Table 2. Large Format Multifunction Devices

Multifunction Device Speed (images per minute)	Low-power Mode (Watts)	Recovery Time 30 seconds	Sleep Mode (Watts)	Sleep Mode Default Time	Automatic Duplex Mode
0 < ipm ≤ 40	NA	NA	≤ 70	≤30	No
40 < ipm	4.85 x ipm + 50	Recommended	≤ 105	≤90	No

Water Coolers

The Vendor Must:

Provide water coolers that earn the ENERGY STAR and meet the ENERGY STAR specifications for energy efficiency as outlined below. The vendor is encouraged to visit energystar.gov for complete product specifications and an updated list of qualifying products.

Product Category	**Current Criteria** (Energy Use Under Test Conditions)
cold only and cook and cold bottled units	$\leq$ 0.16 kW-hours/day
hot and cold bottled units	$\leq$ 1.20 kW-hours/day

NATIONAL WILDLIFE FEDERATION
www.nwf.org

Environmentally Preferable Purchasing:
A Getting Started Guide

Section Three:

Top Product Categories

Section Three: Top Product Categories

Computers

General Resources

- Guide to environmentally preferable computer purchasing – Northwest Product Stewardship Council
- Electronic equipment and product stewardship – Northwest Product Stewardship Council
- Additional computer resources – Center for a New American Dream

Cleaning Supplies

General Resources

- General purpose cleaners – Green Seal
- Approved products – Center for a New American Dream
- Additional cleaning products resources – Center for a New American Dream

Sample Contract Language, Specifications, and Policies

- NY City Council Policy Int. No. 552 – Less toxic custodial products

Paper Products

General Resources

- Buying better copy paper – Scot Case
- Additional environmentally preferable paper links – Center for a New American Dream

Sample Contract Language, Specifications, and Policies

- Minnesota Statute 16B.122

Environmentally Preferable Purchasing:
A Getting Started Guide

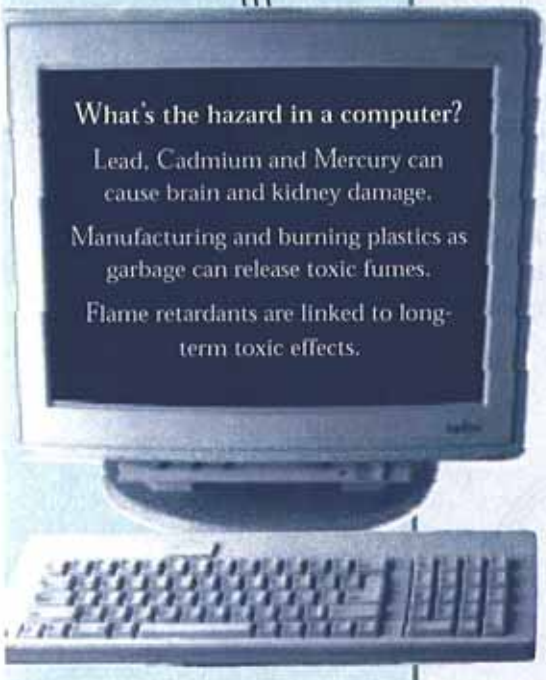
Computers - General Resources

A Guide to Environmentally Preferable Computer Purchasing

Computers are as common in our offices as telephones. Faster, more powerful machines quickly replace each other, with "upgrade" cycles of two or three years. Most equipment is designed for disposal; it does not come apart easily, and parts cannot be upgraded separately. Units may not be recyclable if the materials are hard to separate. The result is large amounts of electronic junk, even with re-furbishers, recyclers and donations diverting some electronics from trash.

Besides wasting materials, the manufacturing and disposal processes may release pollutants to air and water and affect human health. The costs of frequent replacement, plus hazardous waste disposal for some items, can add up quickly. What looked like a good price to buy equipment may carry significant hidden costs.

You can send a message to manufacturers and suppliers. Your purchasing decisions can affect the market. Choose manufacturers who practice Product Stewardship by making it their business to produce products that are less toxic, conserve natural resources, and reduce waste.



This Guide can help you make environmentally friendly choices when you purchase computer equipment. In it you'll find out

- what product features can damage the environment,
- what alternatives to seek,
- where to get details about products and contracts, and
- who's doing what among manufacturers, agencies and organizations.

"Product Stewardship" means manufacturers and suppliers take responsibility for the environmental impacts and costs from the manufacture, use, and disposal of their products.

Problems and Alternatives

From design to disposal, purchasing choices affect the environment. The lists below identify materials and processes to consider for their environmental impacts, and show how your purchasing specifications can reduce or eliminate those problems. Further on in this Guide, you'll find web addresses and resources for contract language, standards, and product details.

What's the most important part of "green purchasing"? It's taking steps to avoid pollution and waste. Energy efficient equipment cuts polluting emissions from power plants. Providing for equipment at the end of its useful life also prevents pollution and saves valuable resources. That's good business, too: the most efficient system has the least waste. If you want to read only one part of this Guide, look at "End-of-Life" Management below.

Obsolescence vs. "Upgradability"; End-of-Life Management

What's the problem?

"Planned obsolescence" and design-for-disposal uses up natural resources and causes waste. Operating systems and software that cannot be upgraded electronically affect both the environment and the user's budget. Samsung announced "the ultimate throwaway computer", sealed so it cannot be upgraded.

What's the alternative?

- Lease and take-back options (purchaser buys computing "service" rather than a computer "product"). Dell and Gateway have substantial leasing programs. Dell, Hewlett-Packard and some others take back certain used equipment.
- Choose operating systems and software that are readily upgradable.
- Ask for readily upgradable hardware. Toshiba is developing a modular computer with a rewritable cartridge that can be upgraded electronically at low cost.
- Make sure spare parts and service will be available (defined in "years available after production.")
- Check to see that memory is easily expandable.
- Demand "spare tire" software and licensing can be pre-loaded to allow for simple reuse of hardware. (Spare tire software is 'inflated' when equipment is decommissioned. The original software related data are erased.

Packaging & Shipping

What's the problem?

Computer equipment comes packaged in materials that typically cannot be re-used, separated, or recycled. Glued computer parts and multiple-material packaging impede recycling. Materials such as polystyrene are generally made without recycled content and may be non-recyclable. Excessive packaging is wasteful. Paper manuals and disks packaged with each computer often add to the waste.

What's the alternative?

- Ask for several computer units to be packaged together for shipping (called "multi-paks") rather than boxed individually.
- Require recycled-content materials and recyclable packaging. Recyclers need to know material types, so require labeling (type of plastic, metal, etc.)
- Require manufacturers or shippers to take back packaging for reuse or recycling. City of Seattle and Boeing computer contracts do this.
- Ask for on-line manuals and pre-installed programs. City of Seattle requires this.
- Require that types and number of materials are minimized and content is labeled.

Toxic Materials

What's the Problem?

Manufacturing of computers and component parts typically involves solvents and other substances that must be controlled to reduce pollution and health risks. Cadmium, mercury, lead, and brominated or halogenated compounds do not break down readily in nature, and require special management. (Refer to the Silicon Valley Toxics Coalition's Clean Computer Campaign, **www.svtc.org** for more details about toxic substances related to computer equipment.

What's the alternative?

- Mandate low levels of toxic chemicals of concern. Massachusetts recently awarded points to bidders who, in manufacturing and assembly, avoided CFCs or HCFCs, chlorinated solvents, cadmium, mercury, and chlorinated or brominated flame retardants.
- Use non-halogenated flame retardants or equipment designed using self-extinguishing base.
- Require take-back provisions for all equipment.
- Use lead-free solder. Available from Matsushita and Sony.
- Explore glass-to-glass recycling to reuse leaded glass in cathode ray tubes (CRTs). Two companies, Envirocycle and Waste Management Asset Recovery, have facilities to do this.
- Use only low-mercury and long-life lamps in flat panel displays.
- Batteries should be removable, rechargeable, and recyclable;
- Label battery type, weight; give instructions for recycling, removal and installation.

Other Design and Manufacturing Factors

What's the Problem?

Product design and manufacturing should address air and water pollution and employee health concerns. Besides using toxic substances and "designing-for-disposal," manufacturers often use glues or fasteners that make repair or upgrade impractical. In addition, virgin and non-recyclable materials use up more water, energy, and minerals than recycled materials.

What's the Alternative?

- Demand products and parts designed so they can be disassembled with universally available tools; minimize use of fasteners.
  Compaq and Dell are experimenting with snap-in, snap-out assembly.
- Require readily recyclable metal casings. Sony uses metal rather than plastic housings in some products, eliminating the need for halogenated flame retardants and increasing recyclability.
- Require recycled-content materials. IBM introduced a PC using 100% recycled plastic in all the plastic parts.
- Use remanufactured and refurbished equipment.
- Choose manufacturers who minimize the toxicity and variety of adhesives, labels, coatings, finishes, fasteners, and metallic paints.
- Require EnergyStar compliance for energy use and sleep modes, active upon delivery and functional within LAN environment. This can save substantially on electricity use and costs, and reduce greenhouse gases related to energy generation. City of Seattle requires EnergyStar PCs. Massachusetts required EnergyStar activated upon delivery for PC's, printers, and video monitors http://www.energystar.gov. (Researchers at Delft University in Holland are designing a wind-up laptop, that operates for one hour on 20 seconds of winding.)
- Require and enable duplex printing mode.
- Require electronic or on-line documentation. City of Seattle required no extra copies of manuals or disks.
- Select printers and copiers that use remanufactured toner cartridges, and can print on both sides of paper.
- Consider air quality standards for printers. Environment Canada's standards for desktop printers: ozone concentration must not exceed .04mg/m3; dust concentration must not exceed .24 mg/m3. http://www.environmentchoice.com
- The European Computer Manufacturers Association recommends reporting the values for ozone, VOC, and dust in terms of mg/m and/or mg/hour determined in full operation of product; and is drafting a standard.

RESOURCES

If you'd like more information, technical references, contract examples, and web addresses are listed here.

MANUFACTURERS' ENVIRONMENTAL AND PRODUCT INFORMATION; END-OF-LIFE MANAGEMENT OPTIONS (LEASE, TAKE-BACK, ETC.)

IBM: www.ibm.com/ibm/environment/news/epro.html and
www.pcco.ibm.com/ww/healthycomputing/envreport/ibm15.html
Hewlett-Packard: www.hp.com/abouthp/environment/contents/design/design_b.htm#Offering
Dell: www.dell.com/us/en/biz/services/asset_005.htm
Compaq: www.compaq.com/services/hardware/hw_disposal.html

THE EUROPEAN UNION'S WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE) DIRECTIVE

The Directive, adopted June of 2000, sets dates by which manufacturers must take back used products to avoid waste and phase out certain toxic materials.
http://europa.eu.int/comm/environment/docum/00347_en.htm

GREEN PURCHASING MODEL CRITERIA AND CONTRACTS

City of Seattle: for desk-tops, EnergyStar compliance, manufacturer takeback of packaging, pre-installed programs and no extra manuals or disks are required. Eliminating individual packaging is being discussed. http://www.ci.seattle.wa.us/oem/GreenPurchasing/GreenPurchasing.htm

State of Massachusetts: The State of Massachusetts "Request for Response" (OSD RFR No. ITCO5, April, 1999) for computer equipment required EnergyStar products and rated vendors on a full range of environmental features, including recycled content and recyclability; labeling plastic resins and not welding parts; avoiding toxic substances; upgradability, taking back equipment and packaging for recycling at the end of useful life; and ergonomics and reduced worker exposure to radiation or electromagnetic fields. The State process also recognized independent third party certifications.
http://www.magnet.state.ma.us/osd/enviro/products/computer.htm

State of Texas: "Guidelines for Lease vs. Purchase of Information Technologies; Department of Information Resources; Austin, TX; May, 1998. www.dir.stat.tx.us/oversight/lvp

THIRD PARTY CERTIFIERS AND RATINGS OF COMPANIES AND/OR PRODUCTS ACCORDING TO ENVIRONMENTAL STANDARDS; LABELS INDICATING COMPLIANCE WITH STANDARDS

Government standards for environmental features with accompanying special labels to indicate which products meet the standards:

EnergyStar ® U.S. EPA energy use standards and lists of manufacturers and products.
http://www.epa.gov/appdstar/esoe/database/pindex.htm

Blue Angel (Germany), www.blauer-engel.de/English/index.htm

Nordic Swan (Norway, Finland, Sweden, Denmark, Iceland), http://www.ecolabel.no/english/about.html

Euro Eco-Label (European Union), http://europa.eu.int/comm/environment/ecolabel/index.htm

Environmental Choice (Canada), www.environmentalchoice.com

Continued

Non-governmental organizations which set environmental standards for various electronics products; some license the use of their labels by interested manufacturers:

Silicon Valley Toxics Coalition (SVTC) Rating of computer manufacturers and other environmental information on electronics. Clean Computer Campaign. http://www.svtc.org/

Swedish IT Company Organization (SITO) Eco-Declaration for Personal Computers: SITO permission is required to use the form. http://www.sito.se/

TCO, another Swedish-based IT standards-setting organization. http://www.tco.info.com/

European Computer Manufacturers Association (ECMA). Technical Report TR-70 addresses environmental attributes in products. wwww.ecma.ch

Design-for-the-Environment (DfE), Design for Disassembly or Remanufacturing

EPA-DfE projects:

Microelectronics and Computer Technology Corporation (MCC) Printed Wiring Board DfE. http://www.mcc.com/projects/env/indes.htm

Computer Display Project Contact
http://www.epa.gov/opptintr/dfe/compdisp/compdisp.html

EPA WasteWise Project, http://www.epa.gov/wastewise

"Eco-Design Checklists for Electronic Manufacturers, System Integrators, and Suppliers of Components and Subassemblies," Tom Clark; The Center for Sustainable Design; Surrey Institute of Art and Design; University College; Surry, UK. www.cfsd.org.uk

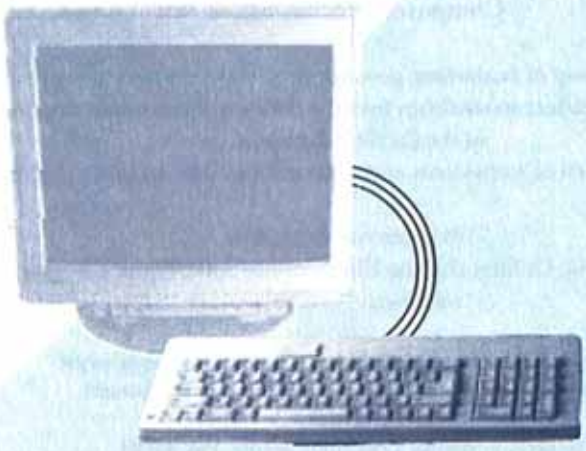
Financial and Management Assessments of Sustainable Business Practices

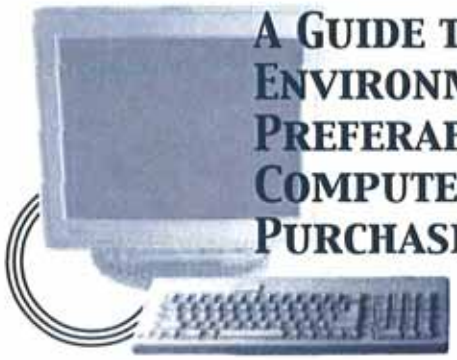
These investment funds screen computer companies based on environmental criteria:

Innovest. http://www.innovestgroup.com

PAX World Fund. http://www.paxfund.com/index

Bank Sarasin. http://www.sarasin.ch





A Guide to Environmentally Preferable Computer Purchasing

Northwest Product Stewardship Council
Computer Subcommittee

The NWPSC is a group of businesses, governments, and non-profits working together to integrate product stewardship into the policy and economic structures of the Pacific Northwest.
Membership is open to individuals and organizations who embrace this mission.

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Seattle Public Utilities and the King County Solid Waste Division,
members, NWPSC.

This Guide is available on-line at: http://www.govlink.org/nwpsc
For print copies of this Guide or more information, contact
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e-mail: shirli.axelrod@ci.seattle.wa.us

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Products & Sectors

Electronic Equipment and Product Stewardship

Green Purchasing

Rating System for Computers and Peripherals

This report summarizes existing eco-label and certification systems for computers and peripherals. The report attempts to determine if any of the labels are available on products for sale in the United States and whether any incorporate life-cycle assessment approaches. Interested purchasers can ask their suppliers to provide certified products or equivalents and can check with the labeling and certification entities for additional details and, in some cases, lists of certified products.

Summary of Eco-Labels and Certification Programs

Scientific Certification Systems

SCS certifies selected "Environmentally Preferable Products, Services, and Technologies." It applies to many products besides electronics. For any product, service or technology, the SCS determination of environmental preferability starts by assessing its environmental impacts at each life-cycle stage, and SCS uses a combination of techniques to complete this assessment.

These techniques include life-cycle impact assessment, supplemented by information from other scientific studies such as Environmental Impact Assessment, Risk Assessment, and Environmental Resource-based studies, and knowledge about "best available" technologies and practices in a given industry.

Examples of attributes that have been certified for various products include:

- Recycled content
- Recovered content
- Salvaged wood from urban sources
- Biodegradability
- No Ozone depleting chemicals
- No VOCs/Low VOCs
- No added formaldehyde emissions
- Organic ingredients
- Poison-free/alternatives to poisons
- Water efficient

Only one attribute, ozone-depleting chemicals, has been applied to electronics so far. Currently, about 24 electronics products have been certified as containing no ozone-depleting chemicals. Of these only a few are monitors, printed circuit boards, and a few computer units of Taiwanese manufacture.

International Labels or Certification Programs Applicable to Products for Sale in the U.S.

ECMA

European Computer Manufacturers Association

The European Computer Manufacturers Association (ECMA) is an international industry association founded in 1961 and dedicated to the standardization of information and communication systems.

Members include major computer software and hardware manufacturers Alcatel, Ericsson, Lucent Technologies, OKI Europe Ltd, Siemens, Apple, Fujitsu/ICL, Microsoft, Openwave, Sony, Avaya, Hewlett-Packard, NCR, Panasonic, Sun, Canon, Hitachi, NEC, Philips, Tenovis, Compaq, IBM, Netscape, Pioneer Electric, Toshiba, Dell, Intel, Network Appliance, Ricoh, and Xerox. The US actively participates in ECMA.

ECMA's environmental efforts reside primarily with Technical Committee 38, Product-Related Environmental Attributes. The scope of TC 38 is, according to their web site, "To identify and describe the environmental attributes related to Information and Communication Technology and Consumer Electronics products during their entire life cycle, from conception to end-of-life treatment." Active members of TC 38 include representatives from major computer manufacturers, including Hewlett Packard, NEC, Dell, Compaq, and IBM (US representatives).

ECMA publications include Technical Report TR/70, the *Product-Related Environmental Attributes.* TR/70 is a voluntary declaration form ("Eco-declaration"), which incorporates the following criteria:

- Product information/description (product and manufacturer identification)
- Extension of product lifetime (repair, warranty, upgradability/extendibility
- Power consumption in several modes
- Radio frequency emissions (EMC)
- ELF/VLF emissions (only visual display units)
- Acoustical noise emissions
- Chemical emissions*
- Materials (declaration of not used suspiciously materials)
- Disassembly (declaration of design features supporting easy disassembly)
- Batteries (types, weight, disposal)
- Product packaging (types, weight, takeback)
- Takeback information (for product and consumables)
- Documentation (paper type and bleaching method)

TCO Development

The Swedish Confederation of Professional Employees (TCO) is an environmental labeling scheme and authority for TCO 1992, TCO'95, and TCO'99 (95 being phased out and replaced by 99). The TCO website contains a large database of TCO-labeled products.

The TCO label addresses ergonomics, emissions (radiation and energy use and noise), and several other environmental attributes for computers, monitors, and printers. TCO has about 50% market penetration world wide, 100% in northern Europe, and about 35% in US. According to a US representative for TCO, the program is strongest for computer monitors. At present too few computers and printers qualify in the US to be a useful tool. All qualifying products tend to be "high end" products.

TCO has looked at life cycle analysis, but their main focus has been on workplace safety. They seek to work and harmonize with other standards bodies/organizations (such as ISO, EnergyStar) on other environmental aspects, such as energy and life cycle. Search the TCO database online for TCO labeled products at http://tco.networks.nu/index_publicfirst.htm

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Canadian Labels or Certification Programs

Environmental Choice

Established in 1988, Canada's "Environmental Choice" Eco-Logo program helps consumers identify products and services that are less harmful to the environment. A product or service may be certified because it is made or offered in a way that improves energy efficiency, reduces hazardous by-products, uses recycled materials or because the product itself can be reused.

Guidelines are developed in consultation with industry, environmental groups, universities and independent technical and scientific advisors. According to currently available information, several printer manufacturers have received certification including Canon Canada Inc., Lexmark Canada Inc., Sharp Electronics of Canada Ltd, and Xerox Canada Ltd. Neither computers nor monitors have received certification. You can search the Environmental Choice website for certified products at http://www.environmentalchoice.com/index_main.cfm.

European Labels or Certification Programs

Blue Angel

The world's first eco-labeling program, Blue Angel, was created in 1977 to promote environmentally sound products, relative to others in the same group categories. This eco-label relies on information and voluntary cooperation, as well as on the motivation and the willingness of each individual to make a contribution towards environmental protection.

The criteria for awarding the Blue Angel include:

- the efficient use of fossil fuels
- alternative products with less of an impact on the climate
- reduction of greenhouse gas emission
- conservation of resources

Once approved, eco-labeled products are reviewed every two or three years to reflect state-of-the-art developments in ecological technology and product design.

Germany's Blue Angel certification for computers is primarily concerned with waste avoidance and reuse potential. According to the Blue Angel site, "Pursuance of these aims helps to prevent possible entries of pollutants into the environment, protect resources and save disposal site space." As a result, their Environmental Label is "awarded to those products which combine a potential longevity of the system and its components with a recyclable design and the opportunity to reuse and recycle used products or product components. In addition, the use of environmentally harmful substances shall be avoided wherever possible."

The Basic Criteria apply to components of workstation computers, including workstations consisting of controller (console), keyboard and monitor. Most products that qualify appear to be of strictly European make and/or model.

Nordic Swan

In November 1989, the Nordic Council of Ministers adopted a measure to implement a voluntary, positive co-labeling scheme in the Nordic countries (Norway, Sweden, Finland, Iceland, and Denmark). The objective of this eco-labeling was to provide information to consumers to enable them to select products that are the least harmful to the environment. Nordic Co-labeling follows the ISO 14024 standard: "Environmental labels and declarations - Guiding principles".

The criteria for co-labeling include requirements for the composition of the product, construction, materials, chemicals, marking of parts, waste disposal, recycling, energy consumption, noise level, ergonomics, electromagnetic fields and safety of use. The criteria have been fixed taking into account the environmental load during the whole life cycle of the product and the principles of the scheme for recyclable products (DfR - Design for Recycling).

IT-Företagen

NITO

The Nordic Information Technology Organization is comprised of IT organizations from Sweden, Norway and Denmark. The NITO eco-declaration for personal computers was a product of the Swedish industry organization's environmental group, SITO. It was first used in 1996 and adopted in Norway and Denmark in 1998.

The NITO eco-declaration is a detailed checklist/questionnaire that lists both voluntary standards and those required by law. Many of the voluntary requirements come from Germany's Blue Angel 94 and/or Nordic SWAN 95 certifications.

Attributes are in the areas of "ecologically adapted construction," "batteries," "noise characteristics," "monitor characteristics/visual ergonomics, keyboard," "electrical safety," "ecological recycling," "packaging and documentation," "energy consumption," and "environment- and quality management." (The criteria in ECMA TR/70 is a subset of the Nordic declaration which has additional criteria based on market demand.)

Eco-label (EU)
The European Union's eco-labeling program was launched throughout the European Community in 1993 to encourage the manufacture of less environmentally damaging products. The European Union's Eco-label, a flower with the EU's star symbol, is awarded to products that have passed a life cycle analysis. On 26 February 1999 the Commission adopted the criteria for personal computers. The criteria were later revised in August 2001. For a limited time, both the new and the previous criteria are valid. This gives companies that have already been awarded the "Flower" time to adapt their products to the new criteria.

The product group is personal computers, definition is consisting of a monitor, system unit, and keyboard. The criteria focus on:

- energy consumption
- life-time extension
- takeback and recycling
- user instructions

The new criteria brought the following changes:

- a limit on the mercury content of the background lighting in liquid crystal display (LCD) monitors
- restrictions on the noise level produced by the person computer system
- maximum exposure limits for electromagnetic emissions of the computer monitor
- a reference to Energy Star power consumption requirements has been introduced and the energy savings criteria for the system unit have been strengthened
- takeback and recycling criteria have been specified
- restricted flame retardants are listed
- user instructions must include information on the EU eco-labeling scheme
- the information appearing on the eco-label has been made shorter and more precise.

For a brief overview of the eco-label for personal computer see the EU's product fact sheet (pdf).

Other Programs of Interest

U.S. Environmental Protection Agency. The Energy Star program has information about EnergyStar labeled computers, monitors, and printers, including criteria and lists of qualifying products.

Design for the Environment (DfE)-The Computer Display Partnership is assessing the life cycle impacts of flat panel displays (FPDs) and conventional cathode ray tube monitors (CRTs) by combining Cleaner Technologies Substitutes Assessment (CTSA) and life-cycle assessment (LCA) approaches. Developed under the DfE program, CTSAs evaluate and compare substitute processes,

products, or technologies and generate data that allow businesses to make environmentally informed choices. Human and ecological risk, energy and resource use, performance, and costs are evaluated in a CTSA. Other areas of future investigation include life cycle assessments/comparisons of leaded and un-leaded wireboards.

Environmentally Preferable Purchasing Database-The EPA Office of Pollution Prevention and Toxics, Environmentally Preferable Purchasing web site provides a summary of and links to EPA (e.g., EnergyStar) and other programs related to environmental preferable purchasing of computers and related equipment. This includes summary of voluntary and mandatory standards and guidelines with vendor lists, where available for EnergyStar, the State of Massachusetts, SCS, Blue Angel, EU, TCO, Nordic Swan, SITO, and the UK Center for Sustainable Design.

Silicon Valley Toxics Coalition

The Clean Computer Campaign, a project of the Silicon Valley Toxics Coalition, recently released the 4th annual Computer Report Card. The Report Card researches 28 major computer corporations operating in the USA, Japan, Korea, Taiwan and Europe to see how responsible these corporations were to their consumers regarding these issues:

- Extended Producer Responsibility
- Hazardous Materials Use
- Occupational Health and Safety
- Online Access to Information the use of hazardous material use in computers

The higher the score, the better the company fared against the criteria. Companies were graded on a number of questions in each category and could receive a score of 0 to 4. There was a total 68 points possible. Below are some results:

- **Passing grade:** Fijitsu (Japan) had 35 points (51.5%), the only company to pass.
- **Needs Improvement category:** 8 companies
- **Poor category:** 3 companies
- **Failing category:** 16 companies (6 of the 9 US companies failed)

The complete report is at http://www.svtc.org/cleancc/pubs/2002report.htm

SVTC also created an eco-label comparison guide for computers. On their site is one for desktops, and one for laptops .

Additional Computer Resources

Prepared by: Center for New American Dream

Contract Language

Indiana
http://www.newdream.org/procure/products/IN RFP - 2004.pdf
Links to Indiana's 2004 RFP.

Massachusetts
http://www.newdream.org/procure/products/MARFR.pdf
Links to Massachusetts' March 2004 RFR, which uses New American Dream's Principles as a basis for its environmental specifications.

Western States Contracting Alliance (WSCA)
http://www.mmd.admin.state.mn.us/wsca/PDF/WSCA-NASPO%20RFP%20-%20PCs%20-%20Complete%20RFP%20with%20Addenda%20-%20Feb%2004.pdf
Links to WSCA's February 2004 RFP.

Other Resources for Developing Contract Language

The Center for a New American Dream's Principles for Purchasing Environmentally Preferable Computers, Monitors, and Peripherals
http://www.newdream.org/procure/products/ComputerPrinciples.pdf
Includes guidelines for purchasing environmentally preferable computers and a listing of over 30 institutions and environmental organizations that participated in the Principles' development.

The Center for a New American Dream's Computer Language Matrix (excel spreadsheet 52kb)
http://www.newdream.org/procure/products/computermatrix.xls
Compares criteria from select eco-labels, RFPs, and other initiatives for use in writing environmental specifications.

Computer Take-Back Campaign and Health Care Without Harm's Environmentally Preferable Procurement Guidelines for Information Technology Equipment in Health Care
http://www.cehca.org/hcwhsuccesses.htm#ComputersandHealthCare
Series of documents that contains procurement guidelines and evaluation tools for procuring electronic equipment. Created to assist health care providers and administrators in their efforts to reduce the environmental impact of their facilities.

Product Stewardship Institute's Purchasing Environmentally Preferable Computers: A Guide for Government Procurement Officials
http://www.productstewardship.us/supportingdocs/epp.pdf
Offers purchasing recommendations, background information on environmental and human health concerns, and summaries of manufacturer and government initiatives.

Information on Energy Efficiency

EPA's Energy Star Computer Information Web Site
http://www.energystar.gov/index.cfm?c=computers.pr_computers
Provides information on the energy-saving features of Energy Star labeled computers as well as manufacturer and product lists.

EPA's Energy Savings Calculator
http://208.254.22.7/ia/business/bulk_purchasing/bpsavings_calc/Calc_computers_monitors.xls
Calculates cost and energy savings from using Energy Star computer equipment.

Information on Environmental and Human Health Issues

Basel Action Network and Silicon Valley Toxics Coalition's Exporting Harm: The High-Tech Trashing of Asia

http://www.ban.org/E-waste/technotrashfinalcomp.pdf
Outlines the consequences of exporting hazardous electronic waste overseas.

Silicon Valley Toxics Coalition's Poison PCs and Toxic TVs
http://www.svtc.org/cleancc/pubs/poisonpc.htm
Details the problems associated with the disposal of obsolete electronic equipment, highlighting electronics' toxic components.

Federal Initiatives

Electronic Products Environmental Assessment Tool (EPEAT)
http://www.epeat.net/about_epeat.htm
Initiative, funded by the EPA, to develop a tool to help purchasers identify environmentally preferable computers and help manufacturers receive a market advantage for their environmentally preferable designs.

Federal Electronics Challenge
http://www.federalelectronicschallenge.net/
Offers a recognition system for federal agencies that reduce the environmental impact of computers through procurement, use, and end-of-life management.

European Initiatives

European Union's Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Directive (RoHS)
http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_037/l_03720030213en00190023.pdf
Links to the text of the European Union's RoHS directive, which deals with the reduction and elimination of certain hazardous substances in electronic equipment.

European Union's Waste Electrical and Electronic Equipment Directive (WEEE)
http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_037/l_03720030213en00240038.pdf
Links to the text of the European Union's WEEE directive, which deals with the management of electronic waste.

INFORM's European Union Electrical and Electronic Products Directives
http://www.informinc.org/fact_WEEEoverview.pdf
Summarizes the European Union's WEEE and RoHS directives.

Manufacturer Initiatives

Silicon Valley Toxics Coalition Fifth Annual Computer Report Card
http://www.svtc.org/cleancc/pubs/2003report.pdf
Rates computer manufacturers' environmental performance in areas including product design and end-of-life management.

Eco-Labels

Blue Angel (Germany)
http://www.blauer-engel.de/englisch/vergabe/download_uz_e/e-UZ-078.PDF

Eco-Flower (European Union)
http://europa.eu.int/comm/environment/ecolabel/
pdf/personal_computers/new_decision_2001/personal_computers_en.pdf

IT-ECO Declaration (Denmark, Norway, and Sweden)
http://www.itforetagen.se/pdf/GUIDELINE.doc

Nordic Swan (Denmark, Iceland, Finland, Norway, and Sweden)
http://www.svanen.nu/DocEng/048e.pdf

TCO Development (Sweden)
http://www.tcodevelopment.com

Environmentally Preferable Purchasing:
A Getting Started Guide

Cleaning Supplies - General Resources

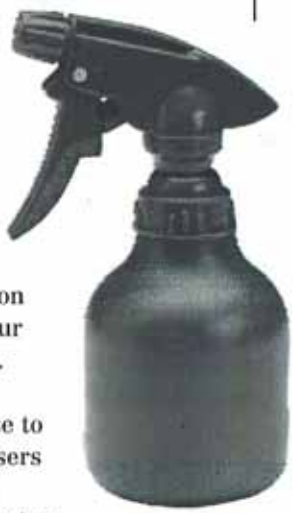
GREEN REPORT
GREEN SEAL'S Choose

MARCH 1998

GENERAL PURPOSE CLEANERS

Scrub, squirt, splash, scour. We could be winning the war against filth and grime . . . but at what cost to the environment? Cleaning products are among the most hazardous chemicals you will find in your home or office and are therefore regulated by the Consumer Product Safety Commission. These cleaners are part of our burgeoning hazardous waste stream.

Cleaners are becoming part of our burgeoning hazardous waste stream.



These types of products can threaten human health as well as the natural environment. Of the majority of human poison exposure cases reported to poison control centers, most (~90%) occur in the home. Because the chemicals found in cleaners are not as easily dispersed indoors as outdoors, concentrations of toxic chemicals may be higher in your home or office than outside. A recent 5-year EPA study found the concentrations of 20 toxic compounds to be as much as 200 times higher inside homes and offices than outdoors. General purpose cleaners can be toxic, corrosive, irritating, and flammable. All-purpose cleaners may contain phosphates, volatile organic compounds (VOCs), EDTA, NTA, glycol ethers, phenolic compounds and many others. Many of these ingredients are considered hazardous, are toxic, cause pollution and poison our environment.

In response to pleas from users and environmental advocates, many manufacturers have created cleaners which are safer for the environment. But beware. There are few concrete definitions or legal requirements for using such popular words as "natural" or "green," and manufacturers are not required to disclose all the ingredients in their products. Many ingredients are considered proprietary. So read labels carefully.

Green Seal surveyed manufacturers of general purpose cleaners and these products are available in the market at

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competitive prices. You should be able to find an environmentally responsible product that does the job without paying more for it.

In this report we identify environmentally responsible general-purpose cleaners. These are cleaners currently available on the market which have a reduced impact upon the environment and upon human health. This report also reviews the information you will need to look for when buying cleaners.

What To Look For In A Greener Cleaner

■ **Is it biodegradable?**

This means that the product can be broken down by microbial action. Biodegradability usually applies to a cleaner's surfactants, which are the active ingredients that perform the main cleaning function. The rate at which they break down is important. If ingredients biodegrade slowly or incompletely, they can threaten our environment. For example, even at low concentrations, surfactants can increase the penetration of harmful chemicals into the tissues of plants and animals. A general rule of thumb (although there are exceptions) is that surfactants made from petroleum fatty acids degrade slowly. Those derived from vegetable oil fatty acids break down more quickly. Look particularly for products that are "readily biodegradable," which implies that they break down quickly and harmlessly. And if the product does not say biodegradable anywhere on the label, don't buy it!

Using a concentrated product correctly cuts down on packaging waste and transport . . . which could ultimately save you money. Save energy too by using cold water to dilute mixtures.

■ **Is it non-toxic?**

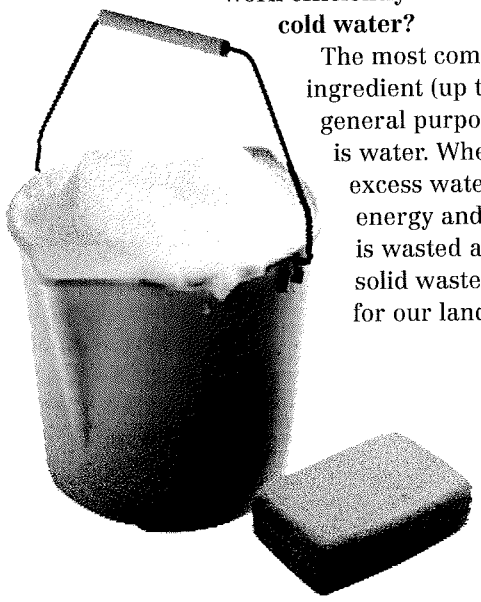
Use products specifically identified as non-toxic to humans and aquatic life. Non-toxic means that the product is not injurious to humans or aquatic life when used for its normal, intended use and under normal concentrations. To be labeled as non-toxic to humans, the product must meet Federal requirements.

■ **Does it contain EDTA (ethylene diamine tetraacetic acid or ethylene dinitrilotetraacetic acid), NTA (nitrilotriacetic acid), phosphates or derivatives of phosphates?**

Phosphates and EDTA (both known as builders) have traditionally been used to soften water and to increase the cleaning power of the surfactants. Phosphates encourage plant growth and algal blooms which can lead to oxygen depletion, eutrophication of water bodies, and ultimately to the death of aquatic life. EDTA and NTA are not readily biodegradable. They are moreover, suspected carcinogens, and can mobilize heavy metals in sewage treatment plant sludge and in stream and lake sediments. Other builders such as sodium carbonate, sodium bicarbonate, sodium citrate and sodium silicate have much milder environmental impacts.

■ **Is it concentrated and does it work efficiently when diluted in cold water?**

The most common ingredient (up to 90%) of general purpose cleaners is water. When this excess water is shipped, energy and packaging is wasted and more solid waste is created for our landfills.



The ***Choose Green Report*** is published for Green Seal Environmental Partners. To become an Environmental Partner, or to receive a copy of this report, contact Green Seal at (202) 588-8400 x 21 or lcarr@greenseal.org.

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www.greenseal.org

GREEN SEAL
Environmental Partner

Using a concentrated product cuts down on packaging waste and fuel costs associated with transport. This can also ultimately save the consumer money. A product is considered concentrated when it contains less than 20% water by weight. The optimum dilution to look for is 1 ounce of cleaner to 1 gallon of water. And remember, use cold water when making dilutions, because this helps to save energy.

■ **Does it contain chlorine bleach?**

Many products use sodium hypochlorite to whiten, disinfect, deodorize and to remove stains. But in wastewater, chlorine-containing bleaching agents can react with other chemicals to form chlorinated organic compounds, which can be toxic and carcinogenic. When buying non-chlorine bleach cleaning products, be sure they are labeled to be effective in cold water. A preferable substitute for chlorine-bleach is sodium percarbonate.

■ **Does it contain high concentrations of Volatile Organic Compounds (VOCs)?**

Solvents are used to assist the cleaning action or to help dissolve other ingredients in the product. VOCs include hundreds of compounds, such as, benzene, toluene, xylene and trichloro-ethane. Cleaning products contribute approximately 8% of total non-vehicular VOC emissions. They enter the air during product use or after being disposed of. Some may also combine with water and enter the wastewater stream. VOCs react with nitrous oxides in the presence of sunlight to produce ground-level ozone and photochemical smog. Smog can cause health problems, especially

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Checklist

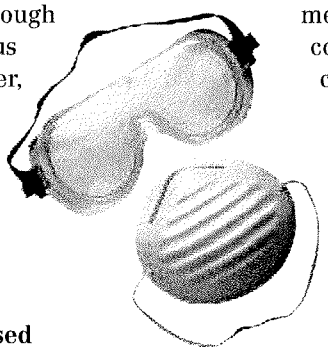
WHAT TO LOOK FOR IN A SUPERIOR CLEANER

A superior green cleaner is one that lessens its environmental impacts at every stage of its life cycle, including its packaging.

- ❑ Product should be **BIODEGRADABLE AND NON-TOXIC** to *both* humans and aquatic life.
- ❑ **EDTA and NTA** - avoid purchasing products with these ingredients. Instead choose builders such as sodium citrate, sodium bicarbonate, sodium carbonate, or sodium silicate
- ❑ **PHOSPHATES** - choose products with a phosphate concentration of 0.5% by weight or less. Those without are the best!
- ❑ Product should be **CONCENTRATED** and able to work in cold water.
- ❑ **AVOID** products containing **CHLORINE BLEACH** or **SODIUM HYPOCHLORITE.**
- ❑ **VOC CONCENTRATIONS**—choose products with a VOC concentration no more than 10% of the weight of the product, when diluted for use as directed.
- ❑ Generally try to avoid ingredients derived from petroleum. Choose **SURFACTANTS** derived from vegetable oil when possible. Avoid those with nonylphenol ethoxylate. Look for d-limonene and pine oil **SOLVENTS**.
- ❑ Favor products with a **NEUTRAL pH.**
- ❑ **PACKAGING** - choose products in recycled containers with recyclable HDPE or PET. Choose those shipped in recycled and recyclable cardboard boxes and other recyclable and refillable containers.

What to Look for in a Greener Cleaner
continued from page 3

for those with respiratory ailments. These solvents when inhaled or absorbed through the skin can have serious health effects on the liver, kidneys, respiratory system, and central nervous system. Some VOCs are also known or suspected carcinogens.



■ **Avoid petroleum-based solvents, glycol ethers, phenolic compounds and surfactants.**

Petroleum-based solvents are made from non-renewable resources, are extremely flammable and are toxic upon inhalation. Glycol ethers (e.g., ethylene glycol, butoxy ethanol) are also commonly used, especially in spray cleaners. These are manufactured through petrochemical processes and many are toxic. Isopropyl alcohol, although not as toxic, is manufactured through petrochemical processes as well and is therefore associated with the release of toxic pollutants during these processes. Phenolic compounds are highly volatile, highly toxic, corrosive, suspected of causing cancer in humans and can be harmful upon inhalation or absorption through the skin or eyes. Sometimes phenol is also used as a germ killer in cleaners.

Petroleum-derived surfactants are associated with more serious environmental impacts than those made from vegetable oils. While many of the commonly used surfactants are relatively non-toxic to humans, they may be based on chemicals that are toxic, such as ethoxylated surfactants based upon ethylene oxide, an animal carcinogen.

Cleaners that contain chlorine bleach, solvents with high concentrations of VOCs, and toxins are human and environmental health hazards.

Look for pine oil or citrus-based solvents. Pine oil is a coproduct of tree harvesting for paper production and has antimicrobial properties. It is, however, irritating to the skin, eyes and mucous membranes in high concentrations and is combustible. Another effective solvent is d-limonene, which is created from citrus peels, but it can also be fairly irritating. Sometimes citrus-based solvents will contain petroleum distillates as well, so be careful when choosing these types of products. Both pine oil and d-limonene are agricultural byproducts and are considered renewable resources.

■ **Favor neutral pH products.**

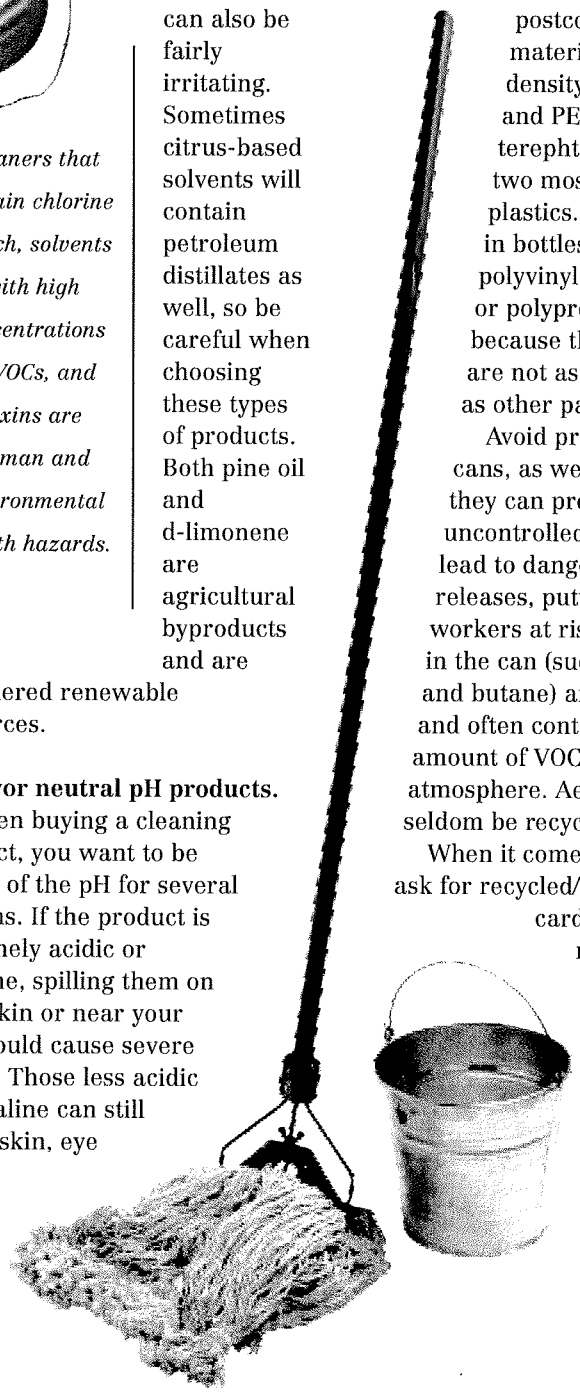
When buying a cleaning product, you want to be aware of the pH for several reasons. If the product is extremely acidic or alkaline, spilling them on your skin or near your face could cause severe burns. Those less acidic or alkaline can still cause skin, eye and mucous membrane irritations. A pH of 7.0 is ideal, because this is neutral and is the same pH as clean water. Keep in mind that a pH of 1.0 is most acidic and a pH of 14.0 is most alkaline.

■ **Look for smarter containers/ smarter packaging.**

Find products that are packaged as a concentrate and are contained in recyclable/refillable containers which contain postconsumer materials. HDPE (high density polyethylene) and PET (polyethylene terephthalate) are the two most recycled plastics. Avoid cleaners in bottles made from polyvinyl chloride (PVC) or polypropylene (PP) because these products are not as easily recycled as other packaging.

Avoid pressurized aerosol cans, as well. If punctured, they can produce an uncontrolled spray, and can lead to dangerous chemical releases, putting sanitation workers at risk. The aerosols in the can (such as propane and butane) are flammable and often contribute to the amount of VOCs in our atmosphere. Aerosol cans can seldom be recycled, either.

When it comes to shipping, ask for recycled/recyclable cardboard boxes and refillable and reusable shipping containers.



Recommended General Purpose Cleaners — Green Buys

All of the recommended general purpose cleaners listed in this table . . .

- Are labeled as biodegradable.
- Are non-toxic to both humans and aquatic life.
- Do not contain EDTA or NTA.
- Do not contain chlorine bleach or sodium hypochlorite.
- Do not contain phosphates or derivatives of phosphates.
- Have acceptable packaging.
- Do not contain phenolic compounds.
- Do not contain glycol ethers.
- Do not contain petroleum or petrochemical compounds.
- Are concentrated and work optimally in cold water.
- Have an acceptable pH when diluted.
- Have an acceptable VOC levels when diluted.

MANUFACTURER / BRAND	pH	VOC concentration (by weight)	CONTAINER/PACKAGING
Alfa Kleen / **Alfa-Kleen AK-020 All Purpose Degreaser** 714-524-2530	9.0-10.0	0%	• Recyclable HDPE • Refillable
American Resource / **Natrasol** 800-638-1209	7.5	2.5%	• Steel drum or pail with recycled content • Refillable
Church & Dwight / **Arm & Hammer Baking Soda** 800-524-1328	8.2	0%	• Boxes are 100% recycled paperboard with min. 35% postconsumer content
Earth Care Products, Inc. / **ECP-89 General Purpose Bacterial Cleaner** 800-689-2847	7.0	0%	• Recyclable HDPE • Contains 15-20% recycled materials • Recyclable, refillable
Gaylord Industries, Inc. / **Formula G-510** 800-547-9696	9.7	0%	• Recyclable HDPE • 30 & 55 gallon steel drums with 65% recycled content • Refillable • Recyclable cardboard boxes
J.E. Jones Supply / **Orange Essence #2** 606-273-0116	7.4	10% (concentrated)	• Recyclable HDPE • Recyclable cardboard boxes have preconsumer content
KC Products, Inc. / **ECO 2000** 800-927-9442	11.4	0%	• 40% postconsumer plastic • Recycled, recyclable, spray bottle is refillable
Lifestyles International / **Envirolife All Purpose Cleaner Concentrate** 800-288-7570 604-878-1059	10.7-11.1	1%	• Recyclable HDPE with 18% preconsumer content • Recyclable cardboard boxes which contain recycled content
Lifetime Solutions, Ltd. / **Universal Concentrate, Heavy Duty Degreaser & Multi-Purpose Cleaner** 941-573-3233	9.2-11.2	0%	• Recyclable HDPE • Recyclable cardboard boxes
Mamco International, Corp. / **Bio-T Max, Bio-T 200 A, & Bio-T 300 B, & Bio-T General Purpose** 800-442-4686	7.0	6.7%	• Recyclable HDPE 1 gallon container, tin pails, or steel drums • 100% postconsumer recycled cardboard boxes • Reusable wooden pallets
National Chemical Laboratories, Inc. / **Citrol 100% Active All Natural Citrus Degreaser/Deodorizer** 800-NAT-CHEM (purchasing)	6.5-8.0	2%	• Recyclable HDPE • Refillable

Recommended General Purpose Cleaners — Green Buys (continued)

MANUFACTURER / BRAND	pH	VOC concentration (by weight)	CONTAINER/PACKAGING
P&D Creative Co., Inc. / **Magic 555 All Purpose Cleaner** 301-797-3503	10.7-10.9 (concentrated)	0%	• Recyclable HDPE, LDPE*–refillable container • Recycled plastic
Proactive International / **Multi-purpose Cleaner & Degreaser, Neutral Cleaner** 888-802-5873	7.0	10%	• Recyclable HDPE with 25% postconsumer content • Cardboard containers have 25% postconsumer content & are recyclable
Rochester Midland Corp. / **Cleanaire 1100, 1200, 1250** 716-336-2200	12.0	0%	• Recyclable HDPE plastic drums & pails • Refillable
Ultra Shield Products International, Inc. / **Ultra Shield Cleaner Concentrate & Ultra Clean All Purpose Cleaner** 800-483-4083 or 800-484-4063	8.5-9.0 (concentrated)	1.4%	• Recyclable HDPE • Recyclable cardboard

Recommended General Purpose Cleaners — Honorable Mentions

MANUFACTURER / BRAND	pH	VOC concentration (by weight)	CONTAINER / PACKAGING	COMMENTS
Arrowak Manufacturing and Distributors, Inc.) / **Klean E-Z** 803-754-5168	10.5	12.7% (concentrated)	• Recyclable HDPE • Refillable • Recyclable cardboard boxes	1,4
Blue Coral, Inc. / **Clear Magic, Industrial Clear Magic** 800-416-1600	7.0	5% 9.7%	• Recyclable HDPE for 5 gal and larger sizes • Recyclable cardboard boxes	1,4,5
Colgate Palmolive / **Ajax Expert No Rinse Hard Surface Cleaner** 770-431-5700	7.0	1%	• Recyclable HDPE with 25% postconsumer content	4,5
Dyna Chem, Inc. / **$H_2Orange_2$ Super Concentrate Rtu Solutions** 800-281-9604	6.5-8.0	0%	• Recyclable HDPE and paper • Recyclable paper • Recyclable cardboard box	5
Earth Clean Systems, Inc. / **Magnum Clean, Easy Clean, Degrease It & Grease Clean** 888-53E-ARTH or 888-883-3562	7.0-10.0	0%	• Recyclable HDPE • Recyclable cardboard boxes	3,4
Ipax Cleanogel, Inc. / **Green Unikleen** 313-933-4211	9.5	0%	• Plastic • Refillable • Recyclable corrugated boxes	2
Maintex / **Citra Clean** 626-961-1988	8.0-9.0	6%	• Recyclable HDPE with 15% postconsumer content • Recyclable cardboard boxes	4
PCI Of America / **Hurrisafe 9010 All Purpose Cleaner** 301-581-9700	10.0	0%	• Recycled HDPE • Refillable & reusable • Recyclable cardboard boxes which contain recycled content	4

Recommended General Purpose Cleaners — Honorable Mentions (continued)

MANUFACTURER / BRAND	pH	VOC concentration (by weight)	CONTAINER / PACKAGING	COMMENTS
Rite-Kem / **Citrus-Klean** 800-841-5351	7.5	1.7%	• Recyclable HDPE • Refillable totes	1,4
Rochester Midland Corp. / **Biogenic SE 373, 374** 716-336-2200	7.0	4.8-9.5%	• Steel • Refillable, recyclable	1
Rochester Midland Corp. / **DfE 401** 800-RMC-4448	10.0 (concentrated)	0%	• HDPE (typically contains 10% preconsumer recycled material) • Totes returned & reused • Drums can be reused • Cardboard containers have recycled content & are recyclable	1
Rochester Midland Corp. / **Enviro Care All Purpose Cleaner** 800-RMC-4448	7.5 (concentrated)	0%	• HDPE (typically contains 10% preconsumer recycled material) • Totes returned & reused • Drums & pails may be reused • Cardboard containers have recycled content & are recyclable	1
Rochester Midland Corp. / **Enviro Care Tough Job Cleaner** 800-RMC-4448	9.0 (concentrated)	6%	• HDPE (typically contains 10% preconsumer recycled material) • Recyclable, refillable, • Cardboard containers have recycled content & are recyclable	1
Rochester Midland Corp. / **Enviro Care Washroom & Fixture Cleaner** 800-RMC-4448	4.0 (concentrated)	0%	• HDPE (typically contains 10% preconsumer recycled material) • Recyclable, refillable, • Cardboard containers have recycled content & are recyclable	1
Seventh Generation / **Seventh Generation All Purpose Cleaner** 800-456-1191	10.0-10.7	0%	• HDPE with 50% postconsumer recycled material • Cardboard containers have 50% postconsumer content & are recyclable	6
Shadow Lake, Inc. / **Citra-Solv® Concentrate & Citra-Solv® Spray Formula** 800-343-6588	7.0-9.0	2% (diluted)	• PET & HDPE • Bottles are recyclable, spray formula is refillable	5
Sunshine Makers, Inc. / **Crystal Simple Green** 800-228-0709	9.5	0%	• HDPE for 1 gallon and larger sizes • Cardboard containers have 25% postconsumer content and are recyclable	4
Sunshine Makers, Inc. / **Simple Green** 800-228-0709	9.5	0.8%	• HDPE for 1 gallon and larger sizes • Cardboard containers have 25% postconsumer content and are recyclable	4

NOTES:

1. Product is not explicitly labeled as non-toxic to both humans and aquatic life.
2. Product may contain phosphates or derivatives of phosphates.
3. Product may contain phenolic compounds.
4. Product may contain glycol ethers.
5. Product may contain petroleum or petrochemical compounds (other than phenolic compounds and/or glycol ethers).
6. Product is not sold as a concentrate.

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IN THIS ISSUE

WHO IS GREEN SEAL?

Green Seal 's mission is to achieve significant environmental benefits by encouraging organizations and individuals to choose environmentally responsible products and services. We accomplish this goal in two key ways.

First, we set rigorous environmental standards for products and services and award a seal of approval to those meeting the standards. When consumers select products bearing the Green Seal, they know they are buying products that have a lessened impact on the environment, without sacrificing performance.

Second, through our Green Seal Environmental Partners Program and the ***Choose Green Reports,*** *we help large and small institutions become environmentally sensitive shoppers. We provide detailed guidance — such as this report —on how organizations can protect the environment while saving money. Please contact us to find out how you can become a partner and receive our monthly newsletters.*

Approved Products
(Information Last Updated: March 29, 2005)

The following products meet or appear to meet the environmentally preferable cleaning product criteria developed by the Institutional Purchasing Program's cleaning product work group. Massachusetts was the first work group member to incorporate the criteria into its contracts. A copy of the Massachusetts Request for Response (RFR), which includes the consensus-based purchasing criteria, is available at http://www.newdream.org/procure/products/MassRFP.pdf. The products are arranged by those that are Approved for Use by work group members, Green Seal Certified, and Certified by Others.

Approved for Use

The following products have been verified as meeting the mandatory environmental criteria by purchasing departments using the work group's environmental criteria. A copy of the Massachusetts Request for Response (RFR), which includes the consensus-based purchasing criteria, is available at http://www.newdream.org/procure/products/MassRFP.pdf.

Application	Manufacturer	Product Name
General Purpose Cleaner	3M http://www.3m.com/US/index.jhtml	Twist 'n Fill #8 General Purpose Cleaner
	The Clean Environment Company http://www.cleanenvironmentco.com/	All-Purpose Cleaner
		Super Orange
	Cleanline Products, Inc. http://www.cleanlineproducts.com/	H202 Citrus Concentrate
		Super H202 Citrus Concentrate
	Cogent Environmental Solutions, Ltd. http://www.ecogent.ca/	ECOgent Light Duty
		ECOgent Heavy Duty
	EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117
		H2Orange2 Grout-Safe Concentrate
		H2Orange2 Super Concentrate 112
	M.D. Stetson http://www.mdstetson.com/ (*Product Central [PC] Product Line*)	PC101 Neutral
		PC108 General
	Naturally Yours http://www.naturallyyoursclean.com/	NY-2 All Purpose Cleaner
		NY-1 Spray & Wipe
	The Ramsey Company http://www.ramseycompany.com/	Ramsey Freefall General Purpose Cleaner
		Ramsey Reflecta Neutral Floor Cleaner
	Rochester Midland Corporation http://www.rochestermidland.com/ (*Enviro Care Product Line*)	Enviro Care Low Foam All Purpose Cleaner
		Enviro Care Tough Job Cleaner
	Spartan Chemical Company, Inc. http://www.green-solution.com/greensolutions/grnsol.nsf	Green Solutions All Purpose Cleaner

Heavy Duty Cleaner	EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117
Cleaner/Degreaser	3M http://www.3m.com/US/index.jhtml	Industrial Degreaser #26
	The Clean Environment Company http://www.cleanenvironmentco.com/	Heavy Duty Degreaser
	EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Tough Job Cleaner
Bathroom Cleaner	3M http://www.3m.com/US/index.jhtml	Twist 'n Fill #4 Bathroom Disinfectant Cleaner
	The Clean Environment Company http://www.cleanenvironmentco.com/	Basin, Tub & Tile Cleaner
	Cleanline Products, Inc. http://www.cleanlineproducts.com/	H202 Citrus Concentrate
		Super H202 Citrus Concentrate
	Cogent Environmental Solutions, Ltd. http://www.ecogent.ca/	ECOgent Bathroom
	Enviro-Solutions http://www.enviro-solution.com/	ES 51C Washroom Cleaner
	EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117
		H2Orange2 Grout-Safe Concentrate 130
		H2Orange2 Super Concentrate 112
	M.D. Stetson http://www.mdstetson.com/ (*Product Central [PC] Product Line*)	Lav Safe
	The Ramsey Company http://www.ramseycompany.com/	Ramsey Freefall General Purpose Cleaner
		Ramsey Reflecta Neutral Floor Cleaner
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Washroom Cleaner
	Spartan Chemical Company, Inc. http://www.green-solution.com/greensolutions/grnsol.nsf	Green Solutions Restroom Cleaner
Glass Cleaner	3M http://www.3m.com/US/index.jhtml	Twist 'n Fill #1 Glass Cleaner
	The Clean Environment Company http://www.cleanenvironmentco.com/	Glass Cleaner
	Cleanline Products, Inc.	H202 Citrus Concentrate

	http://www.cleanlineproducts.com/	Super H202 Citrus Concentrate
	Cogent Environmental Solutions, Ltd. http://www.ecogent.ca/	ECOgent Glass Cleaner
	Enviro-Solutions http://www.enviro-solution.com/	ES 77C NFP Glass Cleaner
	EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117
		H2Orange2 Grout-Safe Concentrate 130
		H2Orange2 Super Concentrate 112
	M.D. Stetson http://www.mdstetson.com/ (*Product Central [PC] Product Line*)	PC101 Glass
	Naturally Yours http://www.naturallyyoursclean.com/	NY-6 Glass & Window Cleaner
	The Ramsey Company http://www.ramseycompany.com/	Ramsey Freefall General Purpose Cleaner
		Ramsey Reflecta Neutral Floor Cleaner
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Glass Cleaner
	Spartan Chemical Company, Inc. http://www.green-solution.com/greensolutions/grnsol.nsf	Green Solutions Glass Cleaner
Carpet/ Upholstery Cleaner	The Clean Environment Company http://www.cleanenvironmentco.com/	Cycle Emulsifier
		Traffic Lane Cleaner
	Cleanline Products, Inc. http://www.cleanlineproducts.com/	H202 Citrus Concentrate
		Super H202 Citrus Concentrate
	Cogent Environmental Solutions, Ltd. http://www.ecogent.ca/	ECOgent Carpet Extractor
		ECOgent Carpet Pre-Spray
	Enviro-Solutions http://www.enviro-solution.com/	ES 87 Carpet Extraction Cleaner with Envirocide
	EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117
		H2Orange2 Grout-Safe Concentrate 130
	M.D. Stetson http://www.mdstetson.com/ (*Product Central [PC] Product Line*)	PC112 Carpet
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Carpet Spot Lifter
	Spartan Chemical Company, Inc.	Green Solutions Carpet Cleaner

	http://www.green-solution.com/greensolutions/grnsol.nsf	
Enzymatic Cleaner/ Digester	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Liquid Bac
Disinfectant	3M http://www.3m.com/US/index.jhtml	Twist 'n Fill #3 Neutral Cleaner
	The Clean Environment Company http://www.cleanenvironmentco.com/	Cycle-Traffic Lane Cleaner
	Enviro-Solutions http://www.enviro-solution.com/	ES 64C General Purpose Neutral Disinfectant
	EnvirOx http://www.h2orange2.com/	Critical Care
		H2Orange2 Concentrate 117
	M.D. Stetson http://www.mdstetson.com/ (*Product Central [PC] Product Line*)	PC 103/256 HBV
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Neutral Disinfectant
	Spartan Chemical Company, Inc. http://www.green-solution.com/greensolutions/grnsol.nsf	Green Solutions Neutral Disinfectant Cleaner
Sanitizer/Virucide	EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117
Floor Stripper	The Clean Environment Company http://www.cleanenvironmentco.com/	Cycle Strip
	Enviro-Solutions http://www.enviro-solution.com/	ES 85 Scrub Free Floor Stripper
	Johnson Wax Professional http://www.jwp.com/JWP/ProdInfo.nsf/formGreenSealCert	Johnson Wax Professional Bravo Floor Stripper
	M.D. Stetson http://www.mdstetson.com/ (*Product Central [PC] Product Line*)	Blue Power Stripper
		EPS Stripper
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Floor Finish Remover
Floor Finish	The Clean Environment Company http://www.cleanenvironmentco.com/	Cycle Finish
	Enviro-Solutions http://www.enviro-solution.com/	ES 80 High Gloss Floor Finish
	Johnson Wax Professional http://www.jwp.com/JWP/ProdInfo.nsf/formGreenSealCert	Johnson Wax Professional Vectra High Performance Floor Finish
	M.D. Stetson http://www.mdstetson.com/	Transend Floor Finish

	(*Product Central [PC] Product Line*)	
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Conseal
		Enviro Care Resilient Tile Coating
Floor Maintenance	The Clean Environment Company http://www.cleanenvironmentco.com/	Cycle Spray Buff
	M.D. Stetson http://www.mdstetson.com/ (*Product Central [PC] Product Line*)	PC 110 Floor Maintenance
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Tough Job Cleaner
Floor Cleaner	3M http://www.3m.com/US/index.jhtml	Twist 'n Fill #24 3-in-1 Floor Cleaner
	Johnson Wax Professional http://www.jwp.com/JWP/ProdInfo.nsf/formGreenSealCert	Johnson Wax Professional Stride-Citrus Neutral Cleaner
	M.D. Stetson http://www.mdstetson.com/ (Product Central [PC] Product Line)	PC 117 Floor Cleaner
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care All Purpose Cleaner
Furniture Polish	3M http://www.3m.com/US/index.jhtml	Furniture Polish
	The Clean Environment Company http://www.cleanenvironmentco.com/	Furniture Protector & Polish
	EnvirOx http://www.h2orange2.com/	Earth Friendly Furniture Polish
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Sun Gloh
Hand Soap	3M http://www.3m.com/US/index.jhtml	Pink Hand Soap #54
	The Clean Environment Company http://www.cleanenvironmentco.com/	Hand Soap
	Enviro-Solutions http://www.enviro-solution.com/	ES 50 Deodorant Lotion Soap
	EnvirOx http://www.h2orange2.com/	Earth Friendly Hand Soap
	M.D. Stetson http://www.mdstetson.com/ (Product Central [PC] Product Line)	Softy Hand Cleaner
	Naturally Yours	NY-14 Gentle Soap

	http://www.naturallyyoursclean.com/	
	Rochester Midland Corporation http://www.rochestermidland.com/ (Enviro Care Product Line)	Enviro Care Hand Soap

- ***Floor care systems*** *are required in the Request for Response (RFR) to be designed to work together in an environmentally preferable system of overall floor care. These products' ingredients were not tested in the evaluation phase. Their compliance with the mandatory criteria is based on the MSDS and other data submitted by the manufacturers to demonstrate such compliance.*
- ***Janitorial paper*** *products offered on this contract meet or exceed the federal standards for post-consumer recycled content. For additional information, visit EPA's Comprehensive Procurement Guidelines web site at* http://www.epa.gov/cpg/.

Green Seal Certified

The following products are certified by Green Seal and meet all of the mandatory environmental criteria developed by the Institutional Purchasing Program's cleaning product work group. A copy of the Massachusetts Request for Response (RFR), which includes the consensus-based purchasing criteria, is available at http://www.newdream.org/procure/products/MassRFP.pdf. Please note, however, that Green Seal certification is currently unavailable for all of the product categories covered under the Center's environmental criteria. For additional information on this distinction, see http://www.newdream.org/procure/products/greenseal. To ensure you have the most recent list of Green Seal certified products, please visit Green Seal's web site at http://www.greenseal.org/certproducts.htm#cleaners.

Note: Only those products listed below have been certified by Green Seal. Other products manufactured by the companies listed in this table may or may not meet the work group's purchasing criteria or Green Seal's certification requirements.

Manufacturer	Green Seal Certified Products
3M http://www.3m.com/US/index.jhtml	Twist 'n Fill #1 Glass Cleaner Twist 'n Fill #3 Neutral Cleaner Twist 'n Fill #4 Bathroom Disinfectant Cleaner Twist 'n Fill #8 General Purpose Cleaner Twist 'n Fill #24 3-in-1 Floor Cleaner
AQP Corporation http://www.aqpcleans.com/	SOYMAX Heavy Duty Cleaner
Betco http://www.betco.com/	Green Earth Daily Floor Cleaner Green Earth Glass Cleaner Green Earth Peroxide Cleaner
Buckeye International http://www.buckeyeinternational.com/	Tenacity True 7 RAM Star Spray Concentrate
Butcher's http://www.butchers.com/gforce.htm	Butcher's G-Force All-Purpose & Glass Cleaner Butcher's G-Force H202 Multi-Surface Cleaner Butcher's G-Force Washroom Cleaner Butcher's Look Non-Ammoniated Glass Cleaner Butcher's Raindance Neutral Cleaner
Canberra Corporation http://www.canberracorp.com/zone/greenseal.htm	Husky 320 N/A Bowl and Bathroom Cleaner Husky 325 T/N/A Bowl and Bathroom Cleaner Husky 421 Glass, Plastic, & CRT Cleaner Concentrate Husky 700 Multi-Purpose Synthetic Detergent Complex Husky 702 No Rinse Damp Mop Cleaner Husky 804 G/P Non-Acid Bathroom Disinfectant Cleaner JAWS 3700 Deep Scrub Multi Purpose Cleaner

	JAWS 3702 Neutral Damp Mop Cleaner JAWS Glass & Hard Surface Cleaner JAWS Multi-Purpose Cleaner/Degreaser JAWS Tile, Grout, & Bathroom Cleaner/Deodorizer Maxi-Blend 4000 All Purpose Cleaner Maxi-Blend 4010 Heavy Duty Degreaser Cleaner Maxi-Blend 4020 Glass Cleaner Maxi-Blend 4030 Multi-Surface Bathroom Cleaner Maxi-Blend 4072 Neutral Damp Mop Cleaner
CDC Products Corp. http://www.cdcproductscorp.com/	Cleaner/Conditioner Degreaser Glass Cleaner Heavy Duty Cleaner
ChemBlend International http://www.chemblendllc.com/elogical.html	e.logical Concentrated All Purpose Cleaner e.logical Concentrated Non-Solvent Cleaner Degreaser e.logical Concentrated VOC Free Glass Cleaner e.logical GO2 Concentrated e.logical Non Corrosive Bathroom & Bowl Cleaner/Degreaser
Chemical Specialties Manufacturing Corporation http://chemspecworld.com/	Chemspec ECOgent General Purpose Cleaner
Cleaning Technologies Group http://www.trumix.biz/	TRUMIX #4 Hydrogen Peroxide Multi Purpose Cleaner TRUMIX #8 Glass Cleaner TRUMIX #9 All Purpose Cleaner TRUMIX #10 Speed Spray Power Cleaner
Cleanline Products, Inc. http://www.cleanlineproducts.com/	H2O2 Citrus Concentrate Super H2O2 Citrus Concentrate
Coastwide Laboratories http://www.coastwidelabs.com/	Sustainable Earth 60 General Purpose Cleaner Sustainable Earth 61 Glass Cleaner Sustainable Earth 64 Neutral General Purpose Cleaner Sustainable Earth 65 Heavy Duty General Purpose Cleaner Sustainable Earth 70 Washroom Cleaner
Cogent Environmental Solutions, Ltd. http://www.ecogent.ca/	ECOgent General Purpose Cleaner
Core Products Company http://www.coreproductsco.com/Hydroxi.htm	Hydroxi Pro Concentrated Cleaner Hydroxi Pro Grout Smart
Drummond American http://www.drummondamerican.com/	Mean Green
Dura Wax http://www.durawax.com	PEROX-C
Ecolab http://www.ecolab.com/	QC 51E General Purpose Cleaner QC 52E Glass Cleaner QC 91E Neutral Bathroom Cleaner Quik Fill 510E General Purpose Cleaner Quik Fill 520E Glass Cleaner Quik Fill 910E Neutral Bathroom Cleaner Oasis 139G All Purpose Cleaner Oasis 258G Glass Cleaner Oasis 305G Neutral Bathroom Cleaner
Enviro-Solutions	ES 51C Washroom Cleaner

http://www.enviro-solution.com/	ES 70C General Purpose Cleaner ES 75C Heavy Duty Cleaner/Degreaser ES 77C NFP Glass Cleaner ES 84C Neutral Floor Cleaner
EnvirOx http://www.h2orange2.com/	H2Orange2 Concentrate 117 H2Orange2 Grout-Safe Concentrate 130
Essential Industries http://www.essind.com/	Daily Restroom Cleaner General Cleaner/Degreaser Glass Advantage Multi-Purpose Cleaner Neutral Cleaner Plus Ultra Spray Cleaner
Franklin Cleaning Technology http://www.franklintechnology.com/	Lightning Blend #7 Hydrogen Peroxide Cleaner/Degreaser
Fuller Brush Commercial Products http://www.fullercommercial.com/	Earth-Gard Floor Cleaner Earth-Gard Glass Cleaner Earth-Gard HyperOx Earth-Gard Restroom Cleaner
General Products & Supply http://www.gmpgeneralproducts.com/	H202 Green Kleen H202 Grout Kleen
Guardian Chemicals http://www.guardianchem.ca/	E-3 Industrial Cleaner E-4 Industrial Cleaner E-5 Industrial Cleaner E-6 Industrial Cleaner
Handi-Clean Products http://www.handi-clean.com/	Proxie
Hillyard Industries http://www.hillyard.com/	#140 Super Shine-All #808 Arsenal Super Shine-All #827 Arsenal Green Select Glass Cleaner #828 Arsenal Green Select Degreaser #829 Arsenal Green Select Bathroom Cleaner #960 Green Select Glass Cleaner #961 Green Select Degreaser #962 Green Select Bathroom Cleaner
Johnson Wax Professional http://www.jwp.com/JWP/ProdInfo.nsf/formGreenSealCert	Johnson Wax Professional Alpha-HP Multi-Surface Cleaner Johnson Wax Professional Concentrated All Purpose & Glass Cleaner Johnson Wax Professional Crew Bathroom Cleaner & Scale Remover Johnson Wax Professional General Purpose Cleaner Johnson Wax Professional Glance Non-Ammoniated Glass Cleaner Johnson Wax Professional Glass & Multi-Purpose Cleaner Non-Ammoniated Johnson Wax Professional Heavy Duty Washroom Cleaner Johnson Wax Professional Non-Ammoniated Glass & Surface Cleaner Johnson Wax Professional Stride-Citrus Neutral Cleaner Johnson Wax Professional Stride-Floral Neutral Cleaner
Misco Products Corporation http://www.miscoprod.com/	elements All Surface Cleaner elements Non-Ammoniated Glass Cleaner

	elements Organic Acid Restroom Cleaner elements Peroxide Powered Cleaner/Degreaser
National Chemical Laboratories http://www.nclonline.com/esolution.asp	e-solution #16 pH Neutral All Purpose Cleaner e-solution #18 Multi-Surface Cleaner with H202 e-solution #19 Glass & Window Cleaner e-solution #20 Washroom Cleaner e-solution Degreaser Cleaner
Neutron Industries http://www.neutronindustries.com/	Eco-Choice All Purpose Cleaner
Pioneer Eclipse http://www.pioneer-eclipse.com/	EnviroStar Green All Purpose Cleaner EnviroStar Green Glass & Surface Cleaner EnviroStar Green Spray & Wipe Degreaser
The Ramsey Company http://www.ramseycompany.com/	Ramsey Freefall General Purpose Cleaner
Rochester Midland Corporation http://www.rochestermidland.com/	Enviro Care Glass Cleaner Enviro Care Low Foam All Purpose Cleaner Enviro Care Tough Job Cleaner Enviro Care Washroom Cleaner
SafeSource http://www.safesourceproducts.com/	All-Purpose Cleaner Bathroom Cleaner Neutral Floor Cleaner Window Cleaner
Spartan Chemical Company, Inc. http://www.green-solution.com/	Clean on the Go Clean by Peroxy #15 Green Solutions All Purpose Cleaner Green Solutions Glass Cleaner Green Solutions Industrial Cleaner Green Solutions Restroom Cleaner
State Chemical http://www.statechemical.com/	Ecolution All Purpose Cleaner
Stearns Packaging Corporation http://www.stearnspkg.com/premeasuredprod.htm	GS Extra-Strength Cleaner Concentrate GS Neutral Cleaner Concentrate GS Window Cleaner Concentrate
Ultra Chem Industries http://www.ultrachemlabs.com/	Cleaner & Conditioner Glass & Surface Cleaner Heavy Duty Cleaner Super Heavy Duty Degreaser
Unisource/Jefco http://www.unisource-jefco.com/	CITROLENE Certified Concentrated Non-Solvent Cleaner Degreaser CONQUER Certified Non-Corrosive Bathroom & Bowl Cleaner/Descaler POWER-UP Certified Concentrated All Purpose Cleaner
WAXIE Sanitary Supply http://www.waxie.com/	Green Cleaner/Degreaser Green Glass & Surface Cleaner Green Mild Acid Bath & Grout Cleaner Green Neutral Cleaner
Zep Manufacturing http://www.zep.com/	Multi-Clean Green Verdiza

Certified by Others

An independent laboratory verified that the following products meet the consensus-based green cleaning criteria. To be listed below, a company must submit information from an independent laboratory certifying that the company's product meets all of the environmental criteria specified in the Massachusetts Request for Response (RFR) at http://www.newdream.org/procure/products/MassRFP.pdf. The independent laboratory's evaluation must be based upon a review of the supporting documentation required under the Massachusetts RFR. To submit products or to request additional information, please contact Scot Case at scot@newdream.org.

Note: No companies have submitted independent laboratory certification that their product(s) meet the green cleaning criteria.

Additional Cleaning Products Resources

Prepared By: Center for New American Dream

These resources were originally compiled for the US Environmental Protection Agency's April 2000 EPP Update.

Government Purchasing Agencies

City of Santa Monica, California

Includes a copy of Santa Monica's custodial products bid specifications, which many other purchasers have used as a basis for their own specifications.

http://santa-monica.org/epd/

Commonwealth of Massachusetts Contains extensive details on the process Massachusetts used to identify environmentally preferable cleaning products. It includes the actual specifications, Massachusetts' environmental ratings for specific products, and product pricing information provided by the vendors.

http://www.mass.gov/portal/index.jsp?pageID=osdmodulechunk&L=1&L0=Home&sid=Aosd&b=terminalcontent&f=osd_es_green&csid=Aosd

State of Minnesota

Provides comprehensive information on the process Minnesota used to evaluate the environmental preferability of cleaning products. Also includes links to and information about other related resources.

http://www.moea.state.mn.us/lc/purchasing/cleaners.cfm

King County, Washington

Includes excerpts from the county's 1996 environmentally preferable cleaning specifications. The site also includes links to other useful cleaning product resources.

http://www.metrokc.gov/procure/green/cleaners.htm

Other Government Resources

Canada's Environmental Choice Program

Includes a copy of the specifications for earning Environment Canada's EcoLogo for industrial and commercial cleaners.

http://www.environmentalchoice.ca/index.cfm?fuseaction=main.DspDivision&PageID=28&fkMainPage=0

U.S. EPA's Greening You Purchase of Cleaning Products

Provides information on some of the human health and environmental concerns of traditional cleaning products as well as benefits, product attributes, and success stories of green cleaners. Also contains a resources section.

http://www.epa.gov/oppt/epp/documents/clean/cleaning1.htm

Janitorial Products Pollution Prevention Project

Contains a series of helpful tools including information on the risks associated with more than 100 cleaning product ingredients, a list of high risk products, and risk evaluation forms. The site also includes a series of fact sheets highlighting the pollution prevention opportunities associated with cleaning products, including recommendations about which chemicals to avoid. It also contains information on a 4-hour workshop entitled, "How to Select and Use Safe Janitorial Products."

http://www.wrppn.org/Janitorial/jp4.cfm

US Environmental Protection Agency's Environmentally Preferable Purchasing Program

Includes information on several cleaning product pilot projects, including a pilot project conducted jointly by EPA and the US General Services Administration (GSA) and case studies documenting efforts by the city of Santa Monica and the Commonwealth of Massachusetts. It also contains a database containing contract specifications and environmental attribute information for a wide variety of products, including cleaning products. The site also includes a "Purchasing Decision Wizard" to help purchasers select cleaning products from the GSA schedule.

http://www.epa.gov/opptintr/epp/

US General Services Administration Environmental Products and Services Guide

Provides environmental attribute information on cleaning products available through the US General Services Administration,one of the federal government's primary suppliers.

http://pub.fss.gsa.gov/environ/pdf/EPSG2001.pdf

Nongovernmental Resources

Green Seal

Contains a copy of Green Seal's environmental preferability standards for household cleaning products and the March 1998 *Choose Green* report, which discusses general purpose cleaners and recommends Green Seal-approved products.

http://www.greenseal.org/

INFORM's Cleaning for Health: Products and Practices for a Safer Indoor Environment

Describes product evaluation methods, lists products meeting INFORM's environmental and performance criteria, and presents model specifications. This report also provides manufacturer contacts and other resources on green cleaners.

http://www.informinc.org/cleanforhealth.php

Scientific Certification Systems

Includes a list of more than 50 cleaning products for which Scientific Certification Systems has documented the accuracy of specific environmental claims such as biodegradability and VOC content. (Users will need to type "clean" into the product category search field to generate the most current list.)

http://www.scscertified.com/

Environmentally Preferable Purchasing:
A Getting Started Guide

Cleaning Supplies - Sample Contract Language, Specifications, and Policies

Int. No. 552

By Council Members Moskowitz, The Speaker (Council Member Miller), Gennaro, Quinn, Baez, Brewer, Comrie, Fidler, Gentile, Gerson, Koppell, Liu, Martinez, Nelson, Recchia Jr., Reed, Sears, Stewart, Weprin, DeBlasio, James, Barron, Perkins, McMahon, Reyna, Monserrate, Vallone Jr., Yassky, Gioia, Sanders Jr., Katz, Lopez and Palma

A Local Law to amend the administrative code of the city of New York, in relation to the use of less toxic cleaning and other custodial products.

Be it enacted by the Council as follows:

Section 1. Declaration of legislative findings and intent. The Council finds that products that we commonly use for routine tasks, such as cleaning, maintaining interior building finishes and hand washing, can adversely impact human health and the environment. Indeed, many such products contain ingredients that may result in eye, skin or respiratory irritation, or may contain carcinogens, reproductive toxins or other hazardous substances. Furthermore, a recent study published in the May 2003 issue of the Journal of Occupational and Environmental Medicine concluded that approximately twelve percent of work-related asthma cases can be linked to cleaning products. At greatest risk for exposure to such harmful products are those who apply them and those who occupy buildings where such products are used.

In addition to health impacts, certain products may also contain ingredients that pollute our waterways and ambient air and are toxic to aquatic life. Such substances are often disposed of in drains and ultimately end up in our rivers, ocean, harbor or air, since New York City's wastewater treatment plants are not designed to treat such toxic materials.

In addition to the United States Department of the Interior, a number of jurisdictions have already taken steps to reduce exposure to harmful substances contained in cleaning and other custodial products, including the cities of Santa Monica, Seattle and Austin, in addition to Vermont, Massachusetts and Minnesota. In fact, Santa Monica found that its switch to less toxic cleaning products annually eliminated approximately 3,200 pounds of hazardous materials in products that it purchases and resulted in reduced spending of five percent on custodial products.

The Council finds that it is not necessary to sacrifice our health and environment for product effectiveness, since there are many less toxic alternatives available. Accordingly, the Council, in recognizing the importance of a work environment that is healthy and clean, finds that the requirements included in this legislation will result in improved indoor air quality in City buildings and enhanced environmental health.

§2. Title 24 of the administrative code of the city of New York is amended by adding thereto a new chapter 8 to read as follows:

Chapter 8
GREENING OUR CLEANING ACT

§24-807 Annual report.

§24-808 Penalties.

§24-801 **Short title.** This chapter shall be known and may be cited as the "Greening Our Cleaning Act."

§24-802 **Definitions.** For the purposes of this chapter only, the following terms shall have the following meanings:

a. "Air freshener" means any product including, but not limited to, sprays, wicks, powders, and crystals, designed for the purpose of masking odors, or freshening, cleaning, scenting or deodorizing the air. Air freshener does not include products that are used on the human body, products that function primarily as cleaning products or disinfectant products claiming to deodorize by killing germs on surfaces.

b. "Bathroom cleaner" means any product used to clean hard surfaces in a bathroom, such as counters, walls, floors, fixtures, basins, tubs, and tile, but shall not include products specifically intended to clean toilet bowls.

c. "Carpet cleaner" means any product used for the routine cleaning of carpets and other textile floor coverings and shall not include spot cleaners.

d. "City agency" means a city, county, borough, administration, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the city treasury, and the New York city housing authority.

e. "Contractor" means any person or entity that enters into a contract with a city agency, or any person or entity that enters into an agreement with such person or entity, to perform work or provide labor or services related to such contract.

f. "Degreaser" means any product designed to remove or dissolve grease, grime, oil and other oil-based contaminants from a variety of substrates, including automotive or miscellaneous metallic parts.

g. "Disinfectant" means any agent that is used to destroy or irreversibly inactivate infectious fungi, viruses and bacteria, but not necessarily their spores.

h. "Floor finish" means any product designed to polish, protect, or enhance floor surfaces by leaving a protective wax, polymer or resin coating that is designed to be periodically removed and reapplied.

i. "Floor stripper" means any product designed to remove floor finish through breakdown of the finish polymers, or by dissolving or emulsifying the finish, polish, or wax. Floor stripper does not include general-purpose cleaners that can be used to clean floors.

j. "Furniture polish" means a wax or polish or any other product designed for the purpose of polishing, protecting or enhancing finished wood surfaces other than floors.

k. "General-purpose cleaner" means any product used for routine cleaning of hard surfaces, including impervious flooring, such as concrete or tile. This term shall not include any cleaner intended primarily for the removal of rust, mineral deposits, or odors; any product intended primarily to strip, polish or wax floors; any product intended primarily for cleaning toilet bowls, dishes, laundry, glass, carpets, upholstery, wood or polished surfaces; or any product required to be registered under the federal insecticide, fungicide, and rodenticide act, such as those making claims as sterilizers, disinfectants or sanitizers.

l. "Glass cleaner" means any product used to clean windows, glass and polished surfaces. This term shall not include any product required to be registered under the federal insecticide, fungicide, and rodenticide act, such as those making claims as sterilizers, disinfectants or sanitizers.

m. "Metal cleaner" means any product designed primarily to improve the appearance of finished metal, metallic, or metallized surfaces by physical or chemical action.

n. "Product as used" means the most concentrated form of the product that the manufacturer recommends for a product's intended use.

o. "Sanitizer" means any agent that is used to reduce, but not necessarily eliminate microorganisms to levels considered safe by public health codes or regulations.

p. "Undiluted product" means the most concentrated form of the product produced by the manufacturer for transport outside its facility.

§ 24-803 Use of less toxic cleaning and other custodial products. No city agency, or contractor in the fulfillment of a contract with a city agency, shall make available for use in or apply to any property owned or leased by the city or the New York city housing authority any product that does not meet the following requirements:

a. For a general purpose cleaner, bathroom cleaner or glass cleaner:

1. the product shall meet all applicable Product-Specific Health and Environmental Requirements included in the Green Seal Standard for Industrial and Institutional Cleaners (GS-37);

2. the undiluted product shall not contain any ingredient that is classified as a mutagen under the harmonized system for the classification of chemicals which cause mutations in germ cells (United Nations, 2003); and

3. the product shall not contain petrochemical-based fragrance.

b. For a carpet cleaner:

1. the product shall meet all Product-Specific Health and Environmental Requirements included in the Green Seal Standard for Industrial and Institutional Cleaners (GS-37), and with respect to the requirement included therein regarding photochemical smog, tropospheric ozone production and indoor air quality, the product as used shall not contain volatile organic compounds that exceed 1% of the product by weight, as determined by the California air resources board method 310; and

2. the product shall meet the requirements contained in paragraph two and paragraph three of subdivision a of this section.

c. For a disinfectant or sanitizer:

1. the product shall meet the requirements contained in subdivision b of this section, except that active ingredients of such disinfectant or sanitizer need not meet the biodegradability requirement of the Product-Specific Health and Environmental Requirements included in the Green Seal Standard for Industrial and Institutional Cleaners (GS-37); and

2. the product shall be registered with the United States environmental protection agency.

d. or a floor finish, floor stripper or other floor maintenance product:

1. the product shall meet the requirements included in the Green Seal Environmental Standard for Floor-Care Products: Finishes and Compatible Strippers Used for Industrial and Institutional Purposes (GS-40); and

2. the product shall not contain petrochemical-based fragrance.

e. For a hand soap, the product shall not be an anti-microbial and shall have a pH between 6 and 8.5.

f. For an air freshener, the product shall not contain paradichlorobenzene or ammonium quarternary compounds.

§24-804 **Additional product requirements.** a. City agencies, and contractors in the fulfillment of contracts with city agencies, shall make best efforts to use degreasers, graffiti removers, furniture polishes and metal cleaners that meet as many of the requirements set forth in subdivision a of section 24-803 of this chapter as possible.

b. City agencies, and contractors in the fulfillment of contracts with city agencies, shall make best efforts to use products addressed in this chapter that:

1. do not contain any known respiratory irritants;
2. are produced from bio-based materials;
3. are sold in recyclable containers; and
4. are sold in containers that reduce worker exposure to the chemicals contained therein.

§24-805 **Product list.** No later than November 1, 2005, the department, in consultation with the mayor's office of environmental coordination, shall publish a list of products that comply with this chapter. Such list shall be made available to each city agency and shall be updated on a regular basis, as needed, but in no event less often than once every six months.

§ 24-806 **Exceptions.** This chapter shall not apply:

a. where federal or state funding precludes the city from imposing the requirements of this chapter; or

b. to emergency procurements pursuant to section three hundred fifteen of the charter.

§ 24-807 **Annual report.** Beginning October 1, 2006, and every October 1 thereafter, the commissioner, in consultation with the mayor's office of environmental coordination, shall submit a report to the speaker of the council and the mayor regarding the compliance with this chapter by city agencies, and contractors in the fulfillment of contracts with city agencies, which shall be disaggregated according to city agency and which shall include, but not be limited to:

a. 1. a list of the general-purpose cleaners, bathroom cleaners, carpet cleaners, glass cleaners, disinfectants, sanitizers, floor finishes, floor strippers and other floor maintenance products, hand soaps and air fresheners used by each city agency, or by a contractor in the fulfillment of a contract with a city agency, during the immediately preceding fiscal year;

2. information concerning whether each product contained on the list required pursuant to paragraph one of this subdivision meets the applicable requirements for such product contained in subdivision a through subdivision f of section 24-803 of this chapter;

b. 1. a list of the degreasers, graffiti removers, furniture polishes and metal cleaners used by each city agency, or by a contractor in the fulfillment of a contract with a city agency, during the immediately preceding fiscal year;

2. information concerning whether each product contained on the list required pursuant to paragraph one of this subdivision meets the standards contained in subdivision a of section 24-803 of this chapter; and

c. information concerning whether each product contained on the lists required pursuant to subdivision a and subdivision b of this section meets the standards contained in subdivision b of section 24-804 of this chapter.

§ 24-808 **Penalties.** a. Any contractor who violates this chapter shall be liable for a civil penalty not to exceed one thousand dollars for a first violation; two thousand dollars for a second violation within a period of five years; and three thousand dollars for a third or subsequent violation within a period of five years.

b. Each application or making available for use of a product in violation of this section shall be considered a separate violation.

§3. If any section, subsection, sentence, clause, phrase or other portion of this local law is, for any reason, declared unconstitutional or invalid, in whole or in part, by any court of competent jurisdiction, such portion shall be deemed severable, and such unconstitutionality or invalidity shall not affect the validity of the remaining portions of this law, which remaining portions shall continue in full force and effect.

§4. This local law shall take effect January 1, 2006, except that the Commissioner of Environmental Protection, in consultation with the Mayor's Office of Environmental Coordination, shall take all actions necessary, including the promulgation of rules, to implement this local law on or before the date upon which it shall take effect.

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1/31/05, 4:37 p.m.

Environmentally Preferable Purchasing:
A Getting Started Guide

Paper Products - General Resources

Buying Better Copy Paper

By Scot Case

Ever since a government employee in China invented paper almost 2,000 years ago, governments have been using paper as the primary means to explain government policies. What more and more governments are beginning to realize, however, is that the paper itself also says a lot about a government's policies. Buying recycled-content, process-chlorine free paper (PCF), that was not made with trees from endangered forests, for example, is increasingly viewed as an important indicator of the value a government agency or private-sector company places on protecting human health and reducing related environmental impacts.

Promoting "Green" Copy Paper Purchases

Most governments promote the use of recycled-content and other environmentally preferable papers. Many, however, also continue to make it easy to buy traditional copy papers that contain zero recycled content ("virgin" papers) by permitting individual agencies to determine whether to support the recycled content purchasing goals. (See Table 1.)

As the public increasingly recognizes the human health and environmental impacts associated with virgin papers, more governments are beginning to strengthen their commitments to recycled content and other environmentally preferable papers. Some governments are refusing to provide virgin papers under contract and are only offering more environmentally preferable options. The U.S. General Services Administration (GSA), for example, only offers copy papers containing at least 30 percent postconsumer recycled

Spending Federal Dollars on Paper?

The Resources Conservation and Recovery Act requires federal agencies and others spending federal money to buy recycled content products designated by the U.S. Environmental Protection Agency (EPA). EPA's Comprehensive Procurement Guidelines program has designated more than 60 products, including copy paper. EPA recommends copy papers contain at least 30 percent postconsumer content. For additional information on the EPA's guidelines, visit: www.govinfo.bz/4590-260.

content. At least five states—Hawaii, Massachusetts, New Hampshire, Tennessee, and Vermont—also only offer copy paper containing at least 30 percent postconsumer content. While both Maryland and Pennsylvania continue to offer virgin papers, both report that more than 95 percent of their copy paper purchases contain recycled content.

GSA and others also increasingly offer a wide variety of other environmentally preferable papers as the following examples illustrate:

■ **Minnesota, Ohio, and Vermont** require copy papers to be manufactured in a PCF manner, which reduces dioxin emissions by eliminating the use of chlorine and chlorine derivatives during the manufacturing process. Arkansas, Indiana, Massachusetts, and Oregon have established goals to move towards PCF papers.

■ **Arkansas, Massachusetts, Oregon, and Vermont** want to buy papers certified by the Chlorine Free Products Association (CFPA) to ensure the paper is manufactured with PCF methods. They have also set goals to buy copy papers certified by the Forest Stewardship Council (FSC) as a way to ensure the papers they are buying were not manufactured with trees from old growth or endangered forests. South Carolina has established a similar goal, but they are not currently pursuing FSC certification requirements.

■ **Hawaii, Indiana, Maine, Maryland, Massachusetts, Minnesota, Missouri, New Hampshire, Oregon, Pennsylvania, and Vermont** report that more than three-quarters of their copy paper purchases contain at least 30 percent postconsumer recycled content. Many others make recycled-content papers available, but have not yet achieved such significant usage.

■ **Vermont** only buys copy paper containing at least 60 percent postconsumer recycled content manufactured with PCF methods.

■ The **U.S. Environmental Protection Agency (EPA)** headquarters and several EPA regions only buy copy paper containing at least 50 percent postconsumer recycled content manufactured with PCF methods.

■ **Maryland, Minnesota, and Vermont** report that 10 percent or more of their copy paper purchases contain at least 85 percent postconsumer recycled content.

■ **Seattle, WA,** recently established a goal to buy only 100 percent postconsumer recycled-content copy paper.

■ **Washington** hopes at least half of its copy paper purchases will contain at least 50 percent postconsumer content by September 2009.

■ Paper purchases for **Portland, OR,** must either exceed their minimum 30 percent postconsumer requirement or demonstrate that a portion of its non-postconsumer content originates from a sustainably managed source. Portland also asks suppliers to submit chain of custody documentation to confirm the origin of the wood used to produce the paper and the way in which it was processed.

Protecting Human Health and Reducing Related Environmental Impacts

One of the reasons governments focus on improving their paper purchases is that paper is a commodity for which the general public understands the direct human health and environmental impacts. U.S. copy paper use consumes 100 million mature trees every year, which means almost half of the trees cut in North America are used for producing paper. The paper industry in the Southern United States alone consumes 5 million acres of forests each year, an area equal to the size of New Jersey.

Table 1
Recycled-Content Copy Paper Is Available From Most State Contracts*

Papers Offered Under State Contract	Number of States	States
Only recycled-content copy paper containing at least 30% postconsumer content	5	Hawaii Massachusetts New Hampshire Tennessee Vermont
Both recycled content and virgin copy papers	17	Arkansas Connecticut District of Columbia Florida Illinois Indiana Maryland Maine Minnesota Missouri New York Ohio Oregon Pennsylvania South Carolina South Dakota Wyoming
Only virgin copy paper	2	Utah Nevada

*Based on a January 2005 survey conducted by the Center for a New American Dream that was completed by 23 states and the District of Columbia.

The paper industry also uses more fresh water to produce a ton of product than any other industry. It is estimated that each sheet of copy paper takes 13 ounces of water to produce, more than the contents of a typical soda can. The paper industry is the second largest industrial user of energy. It ranks third in toxic chemical releases and fourth in emission of air pollutants known to impair respiratory health.

Specifying Better Copy Papers

Many organizations interested in buying more environmentally preferable copy papers have historically been overwhelmed with a barrage of conflicting advice from the environmental community. The environmentalists talk about recycled-content, tree-free alternatives such as kenaf or hemp, using agricultural wastes to make paper, alternative bleaching technologies, and other related issues. There are papers made from exotic materials such as banana peels, old blue jeans, and coffee pulp. Which environmental attributes are really most important?

To introduce some consistency to their recommendations, the Environmental Paper Network (a group of 75 environmental organizations) met in November 2002 to prioritize the most relevant environmental attributes. They produced a "Common Vision for Transforming the Paper Industry" that prioritizes specific recommendations for the purchasing community. The recommendations include:

- Make a public commitment to buy more environmentally preferable papers.
- Reduce paper consumption by buying office equipment capable of double-sided printing and showing end users how they can save money by reducing paper use.
- Maximize the postconsumer recycled content of all paper purchases.
- Buy papers that are guaranteed not to harm endangered forests by requesting FSC certification.
- Give preference to papers made without chlorine or chlorine derivatives (e.g., PCF).

The Common Vision and additional environmental paper purchasing information is available at www.govinfo.by/4590-261.

In addition to the purchasing recommendations from the environmental community, a group of large private-sector purchasers is currently developing a fee-based service to obtain standardized environmental information from paper manufacturers. The Paper Working Group includes 11 well-known companies, including Bank of America, FedEx-Kinko's, Hewlett Packard, Nike, Staples, and Starbucks.

The companies are collecting data for more than 30 indicators to quantify the pollutants associated with specific papers, the mills that manufacture the paper, and the companies that operate the mills. Once finalized, interested purchasers will be able to use the Environmental Paper Assessment Tool to prioritize their individual environmental requirements and automatically screen them against the confidential industry information. The tool will produce an environmental score for each paper. The resulting scores, based on each purchaser's specific environmental priorities, can then be integrated into the decision making process to easily balance price, performance, and environmental requirements.

While the Paper Working Group project is still in its pilot phase and has not yet been endorsed by the environmental community, it is expected that environmental organizations will eventually develop recommendations to help purchasers use the information to compare papers. Additional information on the Paper Working Group is available at www.govinfo.bz/4590-262.

Addressing Quality and Performance Issues

In the early 1980s when buyers began aggressively seeking environmentally preferable copy papers, some vendors sold them very low quality papers that were never designed for use in high speed copiers or fax machines. After an initial

Important Distinctions

There are important differences between postconsumer recycled content and total recycled content, and between process chlorine free and elemental chlorine free.

■ **Postconsumer recycled content** refers to the percentage of a paper made from waste paper collected by office recycling and curbside collection programs. Total recycled content includes both postconsumer and pre-consumer content such as paper scraps during the manufacturing process. It is the postconsumer content that is the most relevant figure for paper purchasers.

■ **Process chlorine free** means the paper is manufactured without the use of chlorine or chlorine derivatives. Elemental chlorine free, a less environmentally stringent standard, means no chlorine was used, but chlorine derivatives are permissible. Elemental chlorine bleaching was phased out in the United States in 2001. Although chlorine might still be used by some overseas manufacturers, many environmental groups dismiss elemental chlorine free papers as those made by "the most polluting process legally allowed." Elemental chlorine free remains preferable to any process that still uses pure chlorine. Enhanced elemental chlorine free further reduces energy and chemical use. Most environmental groups consider process chlorine free to be the most preferable.

One of the reasons governments focus on improving their paper purchases is that paper is a commodity for which the general public understands the direct human health and environmental impacts.

period of excitement, markets for these inferior-quality papers quickly disappeared.

Paper manufacturing technologies have improved dramatically since the early 1980s. Recycled content and other environmentally preferable papers now perform just as well as virgin papers.

Unfortunately, many of the deficiencies of the early recycled-content papers continue to plague the perceptions of some paper buyers and end users. As a result, a few people continue to assume that any poor performance issue is related to recycled content rather than to more common factors that equally affect both recycled-content and virgin papers.

Dispelling Myths

The following section refutes a few persistent misconceptions that prevent some purchasers from buying recycled-content papers. Despite the myths, the facts are:

■ **If you want recycled-content copy paper, you must specify it.** A few people mistakenly believe that all copy paper contains some recycled content. In reality, less than 10 percent of copy papers contain any postconsumer fiber.

■ **Recycled-content copy paper performs just as well as virgin papers.** In 1998, the U.S. Government Printing Office, U.S. Conference of Mayors, Cannon, Hewlett-Packard, and Lexmark tested more than two million sheets of paper on a wide variety of copiers and printers. Recycled-content papers performed just as well as virgin paper. Buyers Laboratory, Inc., an independent testing laboratory for copiers, printers, and fax machines, also routinely tests a variety of recycled-content and virgin papers as part of its office product evaluations. It reports "no noticeable difference in the runnability of recycled paper versus virgin paper."

Innovative Contract Language

One of the persistent sources of misinformation about the quality of recycled-content copy paper is photocopier technicians who are reluctant to blame any poor performance issues on their copiers and instead blame the paper. Because organizations like the Los Angeles Department of Water and Power and the Commonwealth of Massachusetts know that all modern copiers run just as effectively with recycled-content and virgin papers, they prohibit technicians from blaming recycled-content papers for poor copier performance as part of their copier contracts.

The language Massachusetts uses in its contracts is:

Warranties and service contracts [for copiers] MUST not preclude the use of recycled paper and/or the use of remanufactured supplies under this contract. Service contractors MAY NOT fault the use of such recycled paper and/or supplies for equipment failures, so long as these products are on contract with the Commonwealth.

In addition, the U.S. Government Printing Office evaluates papers against its JCP-065 copier paper standard and identifies dozens of environmentally preferable papers meeting the standard. For a copy of the JCP-065 standard and a list of papers meeting it, visit www.govinfo.bz/4590-263.

■ **Office equipment warrantees permit the use of recycled-content copy papers.** Before the quality of recycled-content copy paper was improved, some office equipment manufacturers used to actively discourage its use. All major office equipment manufacturers currently permit the use of recycled-content papers. Some manufacturers such as Xerox and Hewlett Packard even sell recycled-content papers under their own brand names.

■ **Paper jams occur just as frequently with virgin paper.** In addition to the studies mentioned above, other studies have also concluded that virgin copy paper is just as likely to jam as recycled-content papers. Pennsylvania, in fact, reported no jamming problems until it temporarily switched from recycled to virgin papers. The 1995 Paper Task Force Report published by Environmental Defense concluded that "Frequency of copier machine jams is not correlated with the use of recycled-content paper." Virgin copy papers "curl" just as frequently as recycled-content papers. Copier jams are caused by factors independent of the recycled content, including humidity levels, copier settings, or user error such as loading the paper incorrectly. All new copy papers should be tested in properly tuned office equipment before making large purchases.

■ **There is plenty of recycled-content paper available.** A 2002 survey identified enough existing capacity to manufacture an additional 1.5 million tons per year of 30 percent postconsumer recycled-content copy paper, enough to supply about one-third of the entire U.S. copy paper market. Rising demand is actually increasing production capacities with two mills recently announcing plans for expansion. Additional demand for recycled-content papers will result in additional supply. As one U.S. manufacturer of recycled-content paper exclaimed, "Buy up, folks! We can make all you need!"

Saving Money

Some private-sector and government purchasers report buying 30 percent postconsumer recycled-content copy papers for the same price as equivalent virgin papers. Minnesota actually reports it is paying 1 percent less for recycled-content copy paper than it pays for virgin. Both South Dakota and Citibank pay the same price for both recycled and virgin. Based on a recent survey of state government purchasers, however, it appears 30 percent postconsumer recycled-content papers currently average about seven percent more than virgin papers.

RESOURCES

To find a complete list of resources for "Buying Better Copy Paper," visit: www.govinfo.bz/4590-265.

Any additional costs for buying better paper might be offset by buying lower weight or less bright papers. According to the survey data, 24-pound paper costs 24 percent higher than the 20-pound paper most purchasers are buying. Switching from 24-pound, virgin paper to 20-pound, 30-perent postconsumer recycled-content paper can actually save money.

Similarly, some purchasers are paying premium prices for extremely bright papers. Papers with brightness levels of 84 or higher tend to be about 9 percent higher than papers with brightness levels of 84 or less. Most users can not tell the difference between brightness levels without careful side-by-side comparisons. As a result, many purchasers recognize that unusually high brightness levels are not necessary.

Another way of decreasing paper costs is to decrease paper use. The average U.S. office worker uses about 10,000 sheets of copier paper every year. Any reduction in paper use saves money. As a result, it appears a growing number of governments are implementing or revamping efforts to reduce overall paper consumption. Seattle's recent decision to buy 100 percent, postconsumer, recycled-content paper was accompanied by a related effort to reduce paper use. Washington recently set a goal of reducing overall paper use 30 percent by 2009 from its 2003 baseline. Portland and Multnomah County, OR, continue tracking their progress towards a 15 percent paper use reduction goal by 2008.

Several other governments are investing at least part of the financial savings from reducing paper use into efforts to buy better paper that further reduces adverse human health and environmental impacts.

While purchasing departments are not frequently tasked with running paper reduction programs, many end up supporting such efforts by tracking paper consumption or improving efforts to educate end users about the advantages of buying office equipment capable of double-sided printing.

What About Us?

Recycled-content and other environmentally preferable copy papers have improved significantly since they were first introduced more than 25 years ago. The general public's understanding of the importance of buying such papers has also improved and is leading political leaders, end users, and the general public to ask, "What do our paper purchases say about us?" It is the purchasing community that controls the answer. ❐

Editor's Note: Scot Case is the Director of Procurement Strategies at the Center for a New American Dream where he helps institutional purchasers buy less polluting products from less polluting companies. For additional information, visit: www.govinfo.bz/4590-264 or e-mail Scot at scot@newdream.org.

Additional Environmentally Preferable Paper Links
Prepared by: Center for New American Dream

Alliance for Environmental Innovation
www.environmentaldefense.org/alliance

Highlights a project to help Citibank purchase more environmentally preferable paper with an initial emphasis on recycled-content papers. The site includes an overview of the environmental benefits of buying recycled.

Alliance for Environmental Technology
www.aet.org/epp/index.html

Provides the chemical industry's perspective on the difference between elemental chlorine-free (ECF) and totally chlorine-free (TCF) bleaching technologies. (Note: This site is funded by industries profiting from the ECF technology.)

American Institute of Graphic Arts
www.celerydesign.com/paper/matrix.html

An undated list that identifies the fiber-content, bleaching process, formats, weight, and price range for a variety of environmentally preferable papers. The matrix is also available as a poster.

California Integrated Waste Management Board's Recycled-Content Product Database
www.ciwmb.ca.gov/RCP/

Contains information on thousands of recycled-content product vendors, including numerous paper vendors from across the United States.

Center for a New American Dream's Procurement Strategies Web Site
www.newdream.org/procure/products/paper.html

Provides recommendations for buying more environmentally preferable paper and lists a number of resources for additional information. Additional information is available at www.newdream.org/procure/confcalls/paper.html, including the PowerPoint presentation and minutes from a December 2001 conference call on buying environmentally preferable paper.

Chlorine Free Products Association
www.chlorinefreeproducts.org

Identifies papers meeting its chlorine-free designations (process chlorine-free and totally chlorine-free). In addition to being chlorine-free, any virgin pulp content of papers earning the Chlorine Free Products Association labels are also certified not to contain old growth forest materials.

Conservatree
www.conservatree.org

One of the most extensive resources for environmentally preferable paper. Includes numerous studies documenting the environmental impacts of paper. Also identifies the environmental attributes associated with a large number of commercially available papers.

Consumer Choice Council's How to Save Forests Through Environmentally and Socially Responsible Procurement
http://www.consumerscouncil.org/forest/forest_procurement_book.html

Provides tools, information, and other resources to help people develop and implement successful environmentally preferable purchasing campaigns. Includes an overview of environmental and social problems of unsustainable logging and consumption of wood products and an outline of strategic choices and policy options.

Dolphin Blue
http://www.dolphinblue.com/whybuy.html

Contains excerpt from Paul Hawken's "The Ecology of Commerce" which discusses how to calculate trees to paper, the cost of recycled versus virgin fiber paper, and chlorine issues.

Co-Op America's WoodWise Resources Directory
www.coopamerica.org/woodwise/directory.pdf

Identifies more than 50 vendors of environmentally preferable papers.

Environmental Paper Summit's Common Vision for Transforming the Paper Industry
http://www.conservatree.com/paper/Choose/commonvision.shtml

Links to the Common Vision, a set of paper recommendations agreed to by the more than 56 environmental organizations attending the Environmental Paper Summit. Also contains background information on the Summit and a list of signatories.

Federal Network for Sustainability
www.federalsustainability.org/initiatives/gfcp.htm

Provides an overview of efforts by a group of federal government purchasers to increase the environmental preferability of their paper purchases. Includes an excellent list of frequently asked questions that identifies several environmentally preferable papers currently available along with lots of useful advice and tips.

Forest Ethics' Green Purchasing Web Site
http://www.forestethics.org/purchasing/

Provides steps on how to buy environmentally preferable paper, alternatives to virgin fiber paper from trees, information on companies' paper policies, and other resources pertaining to paper consumption.

Minnesota
www.moea.state.mn.us/lc/purchasing/copypaper.cfm

Includes a list of more environmentally preferable papers approved for use in Minnesota that was last updated April 2002. Also includes success stories, buying tips, and additional resources.

New Leaf Paper
www.newleafpaper.com/ecopaper.html

Contains recommendations to help purchasers select paper. Also provides links to purchase the papers via New Leaf Paper's own supply.

Office of the Federal Environmental Executive's Paper Calculator
www.ofee.gov/recycled/cal-index.htm

Allows purchasers to compare the environmental impacts of papers with different recycled-content percentages. Results include energy use, atmospheric impacts, solid waste volumes, water waste, effluents, and wood use. Also offers a fact sheet debunking myths about performance issues associated with recycled-content paper available at: www.ofee.gov/recycled/30paper.pdf.

Paper Campaign's List of Alternative Papers
www.thepapercampaign.com/alternatives.html#copy

Identifies five papers the Paper Campaign, a grassroots forest protection organization, considers to be environmentally preferable. All of the papers are process chorine-free and contain at least 50 percent post-consumer recycled content. In addition to identifying the papers, the site also lists contact and generic pricing information from dozens of vendors.

Conservatree's Paper Listening Study
http://www.paperlisteningstudy.org/

An ongoing forum for purchasers, environmental advocates, manufacturers, and other experts to discuss paper issues. Topics include market factors, recycled-content paper, chlorine-free paper, tree-free paper, and sustainable forestry.

Paper Task Force's Recommendations for Purchasing and Using Environmentally Preferable Paper
www.environmentaldefense.org/article.cfm?ContentID=1689

Contains general recommendations developed during a three-year research initiative by a task force convened by Environmental Defense that included Duke University, Johnson & Johnson, McDonald's, Prudential Insurance, and Time Inc. It examined environmental impacts through the full lifecycle of paper, along with economic and functional issues across major paper grades. The Paper Task Force report, published in 1995 and updated in March 2001, was extensively peer-reviewed by scientists, academics, environmental experts, and government and industry representatives.

Portland, Oregon's Sustainable Paper Use Policy
Paper Polict PDF

Contains provisions on reducing paper consumption, purchasing more environmentally friendly paper, and reusing and recycling paper products.

Recycled Paper Coalition's Recycled Paper Fact Sheet
www.papercoalition.org/PaperFactSheet.pdf

Six-page fact sheet that lists numerous reasons to buy recycled-content paper, explains the recycling process, reviews common purchasing challenges, and addresses common myths.

ReThink Paper
www.rethinkpaper.org

Requires visitors to register, but registration is free. Includes a paper selector to help purchasers locate papers meeting their environmental needs and information about the various environmental attributes currently available.

U.S. Government Printing Office
www.access.gpo.gov/qualitycontrol/cpypaper.html

Identifies papers containing at least 30 percent post-consumer recycled content that meet the federal government's JCP-O65 paper performance standard. Also highlights papers going beyond the 30 percent standard (including process chlorine-free papers). The one-page JCP-O65 paper standard is available at: www.access.gpo.gov/qualitycontrol/paperspecs/part1/096.pdf.

Watershed Media's Guide to Tree-Free, Recycled and Certified Papers
www.watershedmedia.org/paper/index.html

Electronic version of a 40+ page booklet highlighting some of the environmental benefits and costs of a variety of alternative papers. The printed version includes a variety of paper samples.

Environmentally Preferable Purchasing:
A Getting Started Guide

Paper Products -
Sample Contract Language, Specifications, and Policies

16B.122 Purchase and use of paper stock; printing.

Subdivision 1. **Definitions.** The definitions in this subdivision apply to this section.

(a) "Copier paper" means paper purchased for use in copying machines.

(b) "Office paper" means notepads, loose-leaf fillers, tablets, and other paper commonly used in offices.

(c) "Postconsumer material" means a finished material that would normally be discarded as a solid waste, having completed its life cycle as a consumer item.

(d) "Practicable" means capable of being used, consistent with performance, in accordance with applicable specifications, and availability within a reasonable time.

(e) "Printing paper" means paper designed for printing, other than newsprint, such as offset and publication paper.

(f) "Public entity" means the state, an office, agency, or institution of the state, the Metropolitan Council, a metropolitan agency, the Metropolitan Mosquito Control District, the legislature, the courts, a county, a statutory or home rule charter city, a town, a school district, another special taxing

district, or any contractor acting pursuant to a contract with a public entity.

(g) "Soy-based ink" means printing ink made from soy oil.

(h) "Uncoated" means not coated with plastic, clay, or other material used to create a glossy finish.

Subd. 2. **Purchases; printing.** (a) Whenever practicable, a public entity shall:

(1) purchase uncoated office paper and printing paper;

(2) purchase recycled content paper with at least ten percent postconsumer material by weight;

(3) purchase paper which has not been dyed with colors, excluding pastel colors;

(4) purchase recycled content paper that is manufactured using little or no chlorine bleach or chlorine derivatives;

(5) use no more than two colored inks, standard or processed, except in formats where they are necessary to convey meaning;

(6) use reusable binding materials or staples and bind documents by methods that do not use glue;

(7) use soy-based inks; and

(8) produce reports, publications, and periodicals that are readily recyclable within the state resource recovery program.

(b) Paragraph (a), clause (1), does not apply to coated paper that is made with at least 50 percent postconsumer material.

(c) A public entity shall print documents on both sides of the paper where commonly accepted publishing practices allow.

(d) Notwithstanding paragraph (a), clause (2), and section 16B.121, copier paper purchased by a state agency must contain at least ten percent postconsumer material by fiber content.

Subd. 3. **Public entity purchasing.** (a) Notwithstanding section 365.37, 375.21, 412.311, or 473.705, a public entity may purchase recycled materials when the price of the recycled materials does not exceed the price of nonrecycled materials by more than ten percent. In order to maximize the quantity and quality of recycled materials purchased, a public entity also may use other appropriate procedures to acquire recycled materials at the most economical cost to the public entity.

(b) When purchasing commodities and services, a public entity shall apply and promote the preferred waste management practices listed in section 115A.02, with special emphasis on reduction of the quantity and toxicity of materials in waste. A public entity, in developing bid specifications, shall consider

the extent to which a commodity or product is durable, reusable, or recyclable and marketable through the applicable local or regional recycling program and the extent to which the commodity or product contains postconsumer material. When a project by a public entity involves the replacement of carpeting, the public entity may require all persons who wish to bid on the project to designate a carpet recycling company in their bids.

HIST: 1Sp1989 c 1 art 18 s 2; 1991 c 337 s 3; 1992 c 464 art 1 s 7; 1992 c 593 art 1 s 2; 1993 c 249 s 2; 1994 c 465 art 1 s 1; 1995 c 247 art 1 s 1

NATIONAL WILDLIFE FEDERATION
www.nwf.org

Environmentally Preferable Purchasing:
A Getting Started Guide

Section Four:

State EPP Examples

Section Four: State EPP Examples

Laws, Resolutions, Executive Orders, Ordinances

- Minnesota Executive Order 99-4 – Implementation of pollution prevention and resource conservation by state government
- Minnesota Statutes 2004 – Purchase of recycled, repairable, and durable materials
- California Bill No. AB498 – Environmentally preferable purchasing
- Cincinnati, OH Ordinance No. 141-1994 – Environmentally preferable purchasing
- Buffalo, NY Resolution – PBT-Free Purchasing
- Sarasota County, FL Resolution No. 02-119, 2002 – Environmentally preferable purchasing, energy efficiency, sustainable stewardship
- Boulder, CO Environmental Purchasing Policy Directive
- Kansas City, MO Green Purchasing Ordinance
- Seattle, WA Environmental Policies & Procedures – Environmentally responsible purchasing
- Illinois Executive Order No. 6 (2000) – Establishing the Green Illinois government coordinating council

Model policies & initiatives

- Maine Environmentally preferable procurement program
- Minnesota Product stewardship policy initiative
- Alameda County, CA Environmentally preferable purchasing model policy & Implementation guidance for model policy
- Sample purchasing resolution – NACo's Environmental purchasing starter kit

Other resources

- Links to State EPP Resources

Environmentally Preferable Purchasing:
A Getting Started Guide

Laws, Resolutions, Executive Orders, Ordinances

Executive Order 99-4

Providing for the Implementation of Pollution Prevention and Resource Conservation by State Government

I, JESSE VENTURA, GOVERNOR OF THE STATE OF MINNESOTA, by virtue of the authority vested in me by the Constitution and the applicable statutes, do hereby issue this Executive Order:

WHEREAS, the Minnesota Environmental Policy Act, Minnesota Statutes, Chapter 116D, directs all departments and agencies of the state to promote efforts that will prevent or eliminate damage to the environment, and to improve and coordinate state plans, functions, programs and resources to carry out this policy; and

WHEREAS, for the purposes of this Order, pollution prevention shall include energy and resource conservation and waste reduction; and

WHEREAS, pollution prevention reduces pollution at its source rather than treating or controlling pollution after it has been created; and

WHEREAS, pollution prevention often results in cost savings and increased efficiencies as well as enhanced environmental protection; and

WHEREAS, the Minnesota Toxic Pollution Prevention Act, Minnesota Statutes, Chapter 115D, specifies that it is the policy of the state to encourage pollution prevention; and

WHEREAS, pollution prevention promotes sustainability, providing a better quality of life for all residents while maintaining nature's ability to function over time; and

WHEREAS, there is considerable potential for pollution prevention in state government; and

WHEREAS, Minnesota state agencies benefit from interagency communication and joint problem solving;

NOW, THEREFORE, I hereby order state departments and agencies to continue to take these steps to prevent pollution:

1. All departments and agencies of the State of Minnesota shall promote policy and cultural reform to give priority to preventing pollution at its source of generation.

2. The Interagency Pollution Prevention Advisory Team, established in 1991, shall continue to:

    a. promote regular communication and cooperation between state agencies in preventing pollution;

    b. provide guidelines for state agencies in meeting requirements 4 thorough 6 below;

c. review state agency progress reports;

d. serve as a clearinghouse of information on progress made by state agencies in preventing pollution;

e. encourage the implementation of pilot projects in which state government can serve as a model;

f. recognize outstanding pollution prevention efforts of state agencies through such programs as the Minnesota Governments Reaching Environmental Achievements Together (MnGREAT!) awards;

g. promote efficiency in governmental pollution prevention efforts by reducing overlap of activities and by sharing innovative ideas; and

h. make recommendations for enhancing pollution prevention in state government.

3. The Interagency Pollution Prevention Advisory Team shall be chaired by a representative of the Office of Environmental Assistance. All state agencies shall cooperate with the team in the execution of this order. The team shall include, but not be limited to representatives of the departments of Administration; Agriculture; Corrections; Children, Families and Learning; Health; Human Services; Military Affairs; Natural Resources; Public Safety; Public Service and Transportation. The team shall also include representatives from the Minnesota Pollution Control Agency, Office of Environmental Assistance, Office of Strategic and Long-Range Planning, Office of Technology, Minnesota State Colleges and Universities, University of Minnesota, Minnesota Lottery, Board of Water and Soil Resources, Metropolitan Airports Commission, Metropolitan Council, Metropolitan Sports Facilities Commission and Metropolitan Mosquito Control Commission. The team shall meet regularly.

4. State agencies that generate significant quantities of hazardous waste or use significant quantities of toxic chemicals shall develop or revise policy statements to indicate that pollution prevention is a priority. These agencies shall also undertake activities to reduce their generation of solid and hazardous waste and use of toxic chemicals and resources.

5. State agencies that regulate activities in the state that generate significant quantities of hazardous waste or use significant quantities of resources and/or toxic chemicals, or whose policies have important effects upon such activities, shall develop or revise policy statements indicating that pollution prevention is a priority. These agencies shall also integrate pollution prevention into their regulatory and policy activities as a primary means of meeting standards.

6. State agencies, subject to 4 and 5 above, shall prepare annual summary reports on their progress in preventing pollution with the reports to be completed by August 15 of each year. At a minimum, these reports shall include a description of steps

taken to integrate pollution prevention into agency activities, a summary of plans for future activities to prevent pollution, and an estimate of environmental and economic benefits, when applicable, which have resulted from preventing pollution.

7. State agencies shall, in cooperation with the Department of Administration, encourage pollution prevention through their purchasing policies and specifications.

8. Information on progress of state agencies in preventing pollution shall be included in the Pollution Prevention Evaluation Report to the Legislature required by section 115D.10 of the Minnesota Toxic Pollution Prevention Act.

9. State agencies are encouraged to apply for the annual Governor's Award for Excellence in Pollution Prevention, as authorized by section 115D.06 of the Minnesota Toxic Pollution Prevention Act. A special award for excellence in pollution prevention shall be established for state agencies.

10. The Office of Environmental Assistance shall provide technical assistance to state agencies in the implementation of this Order.

This Order shall be reviewed by the Governor, in consultation with the affected agency or agencies, every two years in order to assess its reasonableness and need.

Pursuant to Minnesota Statutes 1998, section 4.035, subd. 2, this Order shall be effective fifteen (15) days after publication in the State Register and filing with the Secretary of State and shall remain in effect until rescinded by proper authority or it expires in accordance with Minnesota Statutes 1998, section 4.035, subd. 3.

IN TESTIMONY WHEREOF, I have set my hand this second day of April, 1999.

Jesse Ventura
Governor

Filed According to Law:
Mary Kiffmeyer, Secretary of State

16B.121 Purchase of recycled, repairable, and durable materials.

The commissioner shall take the recycled content and recyclability of commodities to be purchased into consideration in bid specifications. When feasible and when the price of recycled materials does not exceed the price of nonrecycled materials by more than ten percent, the commissioner, and state agencies when purchasing under delegated authority, shall purchase recycled materials. In order to maximize the quantity and quality of recycled materials purchased, the commissioner, and state agencies when purchasing under delegated authority, may also use other appropriate procedures to acquire recycled materials at the most economical cost to the state.

When purchasing commodities and services, the commissioner, and state agencies when purchasing under delegated authority, shall apply and promote the preferred waste management practices listed in section 115A.02, with special emphasis on reduction of the quantity and toxicity of materials in waste. The commissioner, and state agencies when purchasing under delegated authority, in developing bid specifications, shall consider the extent to which a commodity or product is durable, reusable, or recyclable and marketable through the state resource recovery program and the extent to which the commodity or product contains postconsumer material.

HIST: 1Sp1989 c 1 art 18 s 1; 1992 c 514 s 3; 1992 c 593 art 1 s 1; 1993 c 249 s 1

BILL NUMBER: AB 498 CHAPTERED
BILL TEXT

CHAPTER 575
FILED WITH SECRETARY OF STATE SEPTEMBER 16, 2002
APPROVED BY GOVERNOR SEPTEMBER 14, 2002
PASSED THE ASSEMBLY AUGUST 29, 2002
PASSED THE SENATE AUGUST 27, 2002
AMENDED IN SENATE AUGUST 22, 2002
AMENDED IN SENATE MAY 9, 2002
AMENDED IN ASSEMBLY JANUARY 24, 2002
AMENDED IN ASSEMBLY JANUARY 18, 2002
AMENDED IN ASSEMBLY JANUARY 9, 2002

INTRODUCED BY Assembly Member Chan
(Coauthor: Senator Chesbro)

FEBRUARY 21, 2001

An act to add Chapter 6 (commencing with Section 12400) to Part 2 of Division 2 of the Public Contract Code, relating to public contracts.

LEGISLATIVE COUNSEL'S DIGEST

AB 498, Chan. Environmentally preferable purchasing.

Existing law regulates the purchase of recycled products by state agencies and the Legislature.

This bill would provide that the Department of General Services, in consultation with the California Environmental Protection Agency, members of the public, industry, and public health and environmental organizations, shall provide state agencies with information and assistance regarding environmentally preferable purchasing, as provided.

This bill would state the intent of the Legislature in enacting these provisions.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. The Legislature finds and declares all of the following:

(a) It is the policy of the state to protect human health and environmental well-being.

(b) The purpose of environmentally preferable purchasing is to protect human health and environmental well-being by reducing the procurement of goods and services that result in larger volumes of waste and pollutants.

(c) Goods and services, that result in reduced volumes of waste and pollutants, have additional value when considering future environmental and health costs.

(d) The state, through environmentally preferable purchasing, has the ability to to protect human health and environmental well-being

by promoting goods and services that result in reduced waste and pollutants.

(e) The Legislature declares that the responsibility of environmentally preferable purchasing shall be that of any agency that does procuring on behalf of the state.

(f) It is the intent of the Legislature, whenever economically feasible and as markets allow, to continually expand the policies of environmentally preferable purchasing in the daily operations of the state.

SEC. 2. Chapter 6 (commencing with Section 12400) is added to Part 2 of Division 2 of the Public Contract Code, to read:

CHAPTER 6. ENVIRONMENTALLY PREFERABLE PURCHASING

12400. For purposes of this chapter, "environmentally preferable purchasing" means the procurement or acquisition of goods and services that have a lesser or reduced effect on human health and the environment when compared with competing goods or services that serve the same purpose. This comparison shall take into consideration, to the extent feasible, raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, disposal, energy efficiency, product performance, durability, safety, the needs of the purchaser, and cost.

12401. The Department of General Services, in consultation with the California Environmental Protection Agency, members of the public, industry, and public health and environmental organizations, shall provide state agencies with information and assistance regarding environmentally preferable purchasing including, but not limited to, the following:

(a) The promotion of environmentally preferable purchasing.

(b) The development and implementation of a strategy to increase environmentally preferable purchasing. This may include the development of statewide policies, guidelines, programs, and regulations.

(c) The coordination with other state and federal agencies, task forces, workgroups, regulatory efforts, research and data collection efforts, and other programs and services relating to environmentally preferable purchasing.

(d) The development and implementation, to the extent fiscally feasible, of training programs designed to instill the importance and value of environmentally preferable purchasing.

(e) The development, to the extent fiscally feasible, of an environmentally preferable purchasing best practices manual for state purchasing employees.

12401.5. Within existing resources, the Department of General Services shall designate a single point of contact for state agencies, suppliers, and other interested parties to contact regarding environmentally preferable purchasing issues.

12402. Nothing contained in this chapter shall prohibit, limit, or supersede recycled content requirements pursuant to any other provision of law.

12403. Nothing contained in any policy regarding environmentally preferable purchasing may be construed as requiring the acquisition of goods or services that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

12404. Manufacturers, vendors, or other nongovernmental entities

contracting with the Department of General Services shall certify in writing that any environmental attribute claims they make concerning their products and services are consistent with the Federal Trade Commission's Guidelines for the Use of Environmental Marketing Terms.

City of Cincinnati

An Ordinance No. 141

J.F.L.

-1994

MODIFYING the provisions of Chapter 321 Procurement and Disposal of Supplies, Services and Constitution of the Cincinnati Municipal Code by ordaining Section 321-1-E Environmentally Preferable; 321-1-R1 Recycled, Section 321-22 Bid; Specifications, Section 321-37 Bid; Award to Lowest and Best, Section 321-52 Proposal; Specifications, Section 321-65 Proposal; Award to Most Advantageous and Section 321-109 Contract; Annual Report and repealing present Section 321-37 Bid; Award to Lowest and Best and Section 321-65 Proposal; Award to Most Advantageous.

BE IT ORDAINED by the Council of the City of Cincinnati, State of Ohio:

Section 1. That Section 321-1-E Environmentally Preferable; Section 321-1-R1 Recycled; Section 321-22 Bid; Specifications, Section 321-37 Bid; Award to Lowest and Best, Section 321-52 Proposal; Specifications, Section 321-65 Proposal; Award to Most Advantageous and Section 321-109 Contract; Annual Report are hereby ordained to read as follows:

§321-1-E. Environmentally Preferable.

"Environmentally Preferable" shall mean supplies, services or construction that have a lesser or reduced effect on human health and the environment when compared with competing supplies, services or construction that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the supply, service or construction.

§321-1-R1. Recycled.

"Recycled" shall mean the series of activities, including collection, separation, and processing, by which products or other materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion.

Definitions of recycling terms used in this chapter are:

(a) "Recovered Materials" shall mean waste materials and by products which have been recovered or diverted from solid waste.

(b) "Preconsumer Materials" shall mean recovered materials which were production finished materials, products or by products which did not reach the consumer for whose use they were intended, and have been diverted from solid wastes for the purposes of collection, recycling and disposition.

(c) "Postconsumer Materials" shall mean recovered materials which were generated by a business or consumer, have served their intended end uses, and have been separated or diverted from solid wastes for the purposes of collection, recycling and disposition.

(d) "Recycled Content Product" shall mean a product made from pre-consumer or postconsumer recovered materials whose portion as a percentage of the weight or volume of the product meets or exceeds the minimum content percentage established by the city purchasing agent.

§321-22. Bid; Specifications.

(a) Specifications are any description of the physical or functional characteristics or of the nature of supplies, services or construction.

(b) All city departments, boards and commissions shall specify environmentally preferable supplies, services or construction when appropriate.

All city departments, boards and commissions shall conduct a review of supplies, services or construction specifications to determine whether the specifications either require the use of products manufactured from virgin materials or exclude the use of recycled products, reusable products, or products designed to be recycled.

In the event that such specifications do exclude the use of recycled products or require the use of virgin materials,

then such exclusions or requirements may be eliminated unless the department, board or commission can demonstrate to the satisfaction of the city purchasing agent that the recycled products would not achieve a necessary requirement or performance standard.

All city departments, boards and commissions shall recommend changes to the city purchasing agent to ensure that performance standards for particular supplies, services or construction can be met and that the specifications are not overly stringent, and to recommend changes to ensure that the specifications will incorporate a requirement for the use of recycled materials, reusable products, and products designed to be recycled to the maximum extent possible, subject to an alternative showing that either the performance of the product will be jeopardized or that the product will negatively impact health, safety, or operational efficiency.

The city purchasing agent may request the bidder to affirmatively demonstrate that recycled material will not jeopardize the performance of the product and will not negatively impact health, safety, or operational efficiency.

§321-37. Bid; Award to Lowest and Best.

Except where otherwise provided by ordinance, the city purchasing agent shall award a contract to the lowest and best bidder or in the case of multiple awarded bidders who has the capability in all respects to perform fully the contract requirements and the integrity and reliability which will assure good-faith performance. The city purchasing agent may consider the bidder's performance on prior and current contracts with the city in determining to whom the award shall be made.

Factors which may be considered in determining the lowest and best bid include, but are not limited to, the following factors which may indicate a bidder's potential for effectively providing equal opportunity for minority group members and women in its contract with the city; information concerning the bidder's current, past and proposed payment of prevailing wages, utilization of minority group members and minority business enterprises, including employment and subcontracts, in the event the selection of the lowest and best bidder is based in large part upon factors indicating the bidder's potential for effectively providing

equal opportunity for minority group members and women in a city contract, the contract award may be made only if the bid does not exceed by more than three percent to a maximum of $10,000 any other lowest and otherwise qualified bidder and if in the opinion of the city purchasing agent the selection of such bidder as the lowest and best bidder will have the greatest potential among the bidders for providing equal opportunity to local minority group members and women to participate in city contracts. "Minority group member" shall mean a person belonging to one of the following racial or ethnic groups: Blacks, Hispanics, American Indians, Alaskan natives, and Asian and Pacific Islanders.

In invitations to bid designated by the city purchasing agent as an environmentally preferable comparison bid, the city purchasing agent, in determining the lowest and best bid, shall deem as favorable the fact that the bidding company offers supplies that contain recycled material, and shall select such bidder as the lowest and best bidder if its bid does not exceed by more than three percent to a maximum of $10,000 any other lowest and otherwise qualified non-recycled bidder.

In such circumstances where more than one bidder offers supplies with recycled material that do not exceed by more than three percent to a maximum of $10,000 any other lowest and otherwise qualified non-recycled bidder, the following factors, listed in descending order of preference, shall be considered in determining the lowest and best bid.

(a) The highest percentage of post-consumer material content.

(b) The highest percentage of pre-consumer material content.

In addition, the following factors may be considered in determining the lowest and best bid.

(c) The ability of the product and package to be reused or recycled.

(d) The volume and toxicity of waste and by-products that a given product generates in its manufacture, use and disposal.

The decision of the city purchasing agent or designee, including whether the environmentally preferable product satisfies the bid requirements, shall be final in the determination of the award.

The total accumulation of all preference percentages from all preference programs now in existence or hereafter established shall not exceed ten percent.

§321.52. Proposal; Specifications.

(a) Specifications are any description of the physical or functional characteristics or of the nature of supplies, services or constructions.

(b) All city departments, boards and commissions shall specify environmentally preferable supplies, services or construction when appropriate.

All city departments, boards and commissions shall conduct a review of supplies, services or construction specifications to determine whether the specifications either require the use of products manufactured from virgin materials or exclude the use of environmentally preferable or recycled content products, reusable products, or products designed to be recycled.

In the event that such specifications do exclude the use of recycled products or require the use of virgin materials, then such exclusions or requirements may be eliminated unless the department, board or commission can demonstrate to the satisfaction of the city purchasing agent that the recycled products would not achieve a necessary requirement or performance standard.

All city departments, boards and commissions shall recommend changes to the city purchasing agent to ensure that performance standards for particular supplies, services or construction can be met and that the specifications are not overly stringent, and to recommend changes to ensure that the specifications will incorporate a requirement for the use of recycled materials, reusable products, and products designed to be recycled to the maximum extent possible, subject to an alternative showing that either the performance of the product will be jeopardized or that the product will negatively impact health, safety, or operational efficiency.

The city purchasing agent may request the offeror to affirmatively demonstrate that recycled material will not jeopardize the performance of the product and will not negatively impact health, safety, or operational efficiency.

§321-65. Proposal; Award to Most Advantageous.

Award shall be made to the offeror whose proposal is determined, in writing by the city manager, city purchasing agent, board or commission to be the most advantageous to the city taking into consideration price and evaluation factors set forth in the request for proposals. The contract file shall contain the basis on which the award is made.

In request for proposals designated by the city purchasing agent as an environmentally preferable comparison request, the city purchasing agent may consider the following factors, listed in descending order of preference, in evaluating competitive proposals as the most advantageous to the city;

(a) The highest percentage of post-consumer material content.

(b) The highest percentage of pre-consumer material content.

In addition, the following factors may be considered in determining the most advantageous proposal.

(c) The ability of the product and package to be reused or recycled.

(d) The volume and toxicity of waste and by-products that a given product generates in its manufacture, use and disposal.

§321-109. Contract; Annual Report.

Annually, the city purchasing agent will report to city council the types and dollar amounts of recycled products contracts used by all city departments, boards and commissions in the previous year. Additional information regarding recycled material may also be included in the annual report.

Section 2. That present Section 321-37 Bid; Award to Lowest and Best and Section 321-65 Proposal; Award to Most Advantageous are hereby repealed.

Section 3. That this ordinance shall take effect and be in force from and after the earliest period allowed by law.

Passed May 4 A.D., 1994

Mayor

Attest:

Clerk

I HEREBY CERTIFY THAT ORDINANCE NO 141
19 94 WAS PUBLISHED IN THE CITY BULLETIN
IN ACCORDANCE WITH THE CHARTER ON 5-12-94

Clerk of Council

On November 7, 2004, The Friends of the Buffalo Niagara Rivers Board of Directors Executive Committee voted unanimously to endorse the attached City of Buffalo PBT-Free Purchasing policy resolution.

City of Buffalo

RESOLUTION FOR PBT-FREE PURCHASING

A RESOLUTION relating to persistent, bioaccumulative, toxic chemicals (PBTs), stating the City of Buffalo's intent to reduce its use of PBTs, and setting forth a work program.

WHEREAS:	A group of pollutants known as Persistent Bioaccumulative Toxic chemicals (PBTs) are toxic, persist in the environment and build up in the food chain, and can pose risks to public health and the environment through their carcinogenic and endocrine disrupting effects, immune system impairment, neurotoxicity, birth defects, and reproductive dysfunction; and
WHEREAS:	The Great Lakes are home to 33 million people, 47 percent of whom draw their drinking water from the Lakes. The Great Lakes are also vital to many North American fish and wildlife species. PBTs in the Great lakes are associated with widespread, long-term adverse effects on wildlife, and, through their bioaccumulation, are of concern for human health.
WHEREAS:	The Great Lakes Binational Toxics Strategy, signed in 1997 by the United States, provides a framework for actions to reduce or eliminate PBTs in the Great Lakes.
WHEREAS:	The New York State Department of Health has issued almost 100 fish consumption advisories for waterbodies across New York State due to PBT pollution, including advisories for the Buffalo River and Harbor, Hoyt Lake, the Niagara River, and Lake Erie.
WHEREAS:	Phasing out the use, production and release of PBTs is important to protecting environmental and public health because once these chemicals are produced, it is difficult and costly to manage, destroy or degrade them; and
WHEREAS:	The American Public Health Association, the United Nations Environment Program, the Chicago Medical Society and the International Joint Commission of the U.S. and Canadian governments have agreed upon the benefits of reducing certain PBT pollution in the environment; and
WHEREAS:	According to INFORM, more than 90% of PBTs are leaving factories in products, not in waste, and are found in a wide range of consumer and industrial products including paints, pesticides, solvents, inks, dyes, solder, etc.

WHEREAS:	Purchasers of these products are often unwittingly choosing products that contain PBTs, even though in many cases safer alternatives are available.
WHEREAS:	EPA's national PBT policy issued in Novemeber 1998 urges states, localities and the federal government to reduce PBTs in waste by 50% by the year 2005.
WHEREAS:	The cities of Boston, Seattle, San Francisco, and Oakland, as well as the states of Washington, Oregon and New Hampshire, have all established laws, policies, and/or initiatives to eliminate and reduce certain PBTs such as dioxin; and
WHEREAS:	The Erie County Department of Environment and Planning is working to reduce the use of PBT chemicals through environmentally preferable purchasing, and has reduced the annual release of 2,000 pounds of para-dichlorobenzene into the environment in Erie County.
WHEREAS:	With leadership from the Common Council, the City of Buffalo has established a strong policy framework to guide the City's actions and investments toward environmental stewardship and sustainability, including the creation of the Environmental Management Commission, the establishment of the Buffalo Pest Management Board to reduce toxic pesticide use, the initial creation of the City's recycling program, the creation of a 100 foot setback to protect the Buffalo River, and dozens of other Council initiatives that have resulted in a cleaner and safer environment for Buffalo's citizens.
WHEREAS:	Potential adverse environmental and health effects from PBTs may be reduced through purchasing decisions that reduce or eliminate products that result in the creation or release of PBTs; and less toxic options exist for many products,

NOW, THEREFORE, BE IT RESOLVED:

That the City of Buffalo considers persistent pollution prevention a high priority for action to reduce risk to public and environmental health, and intends by this resolution to encourage the reduction of pollution from PBTs; and

BE IT FURTHER RESOLVED:

That the City of Buffalo encourages elimination of PBTs through its procurement practices wherever possible and urges the Purchasing Department and other appropriate Departments of the City of Buffalo to consider the presence of PBTs in making purchasing decisions by:

a) Developing and applying criteria that differentiate products containing PBTs and those that result in release of PBTs during production or disposal from those that do not; and

b) Developing an implementation plan with reduction targets for considering these criteria along with other environmental, social, and economic factors when purchasing products in city departments, offices and agencies in order to reduce pollution from PBTs. Within one year of passage of this Resolution, the City will report on their progress and will achieve an Implementation Plan for the purchase of products on behalf of City departments, offices, and agencies by six months thereafter. The Implementation Plan shall include identification and analysis of City uses of PBT-generating products, and purchasing shall be prioritized based on PBT-reduction opportunity, technical and economic feasibility, and protection of human health and the environment.

c) Items to be considered in the development of the implementation plan will be determined by identifying and analyzing City uses of products containing chemicals identified on the EPA PBT priority list or products that result in the generation of such PBTs during their manufacture. Implementation plan actions will be prioritized based on reduction opportunity potential, technical feasibility, economic feasibility, and protection of human health and the environment. The use of an alternative product should be considered economically feasible if its cost, including cost of application, is within 110% of the full costs of the product of concern. In assessing economic feasibility, long-term public health and environmental implications should be considered, as well as the opportunity to stimulate development of alternatives. By encouraging the development of new products, the City's purchasing policies may encourage market transformation and drive costs down below the 110% threshold.

RESOLUTION N0. 02 - 119
RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF SARASOTA COUNTY, FLORIDA

A Resolution of The Board of County Commissioners of Sarasota County, Florida which demonstrates a significant commitment on the part of Sarasota County Government (herein referred to as the "COUNTY"), to establish and implement policies, guidelines, goals and strategic actions to promote sustainability.

Whereas, Sustainability means satisfying our present needs without compromising the ability of future generations to meet their needs; and

Whereas, the COUNTY is committed to lead by demonstrating sustainable stewardship that will yield cost savings to taxpayers by reducing COUNTY operating costs, providing healthy work environments for COUNTY staff and visitors, protecting, conserving and enhancing the COUNTY'S resources, and establishing community standards of sustainable living practices; and

Whereas, the COUNTY is committed to designing, constructing, and operating COUNTY facilities to minimize environmental impacts by incorporating the use of resource and energy efficient materials, renewable resources, alternative energy sources, water conservation, waste reduction, pollution prevention; and

Whereas, environmentally preferred products are generally produced and disposed of in ways that have less negative impact on human health and the environment because they consume fewer natural resources and less energy, generate less waste, and release fewer pollutants; and

Whereas, the COUNTY approved the establishment of a recycled content materials procurement policy, and the implementation of various waste reduction techniques and recycling measures; and

Whereas, on May 19, 1998, the COUNTY joined the United States Department of Energy's Rebuild America program, establishing the Rebuild Sarasota County partnership; and

Whereas, this Resolution will establish the COUNTY as a leader in Florida in setting policies, guidelines, goals and strategic actions that will result in:

- a more sustainable community
- the use of renewable resources
- energy, water and cost savings through the construction, operation and maintenance of high performance buildings and landscapes
- the procurement of environmentally preferred products, materials and services
- increased recycling and materials reuse
- historical preservation
- waste reduction at the source

- healthier and more productive work environments
- less local and global adverse environmental impacts
- reduced County liability
- minimized future disposal infrastructure needs
- adoption of Environmental Landscape Management (ELM) practices

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF SARASOTA COUNTY, FLORIDA, in public meeting assembled:

That the County Administrator may direct COUNTY staff to develop policies, guidelines, and strategic actions for sustainable building practices for COUNTY facilities. The County Administrator may charge COUNTY staff with overseeing the development and application of the guidelines to all facilities; and

BE IT FURTHER RESOLVED:

That the County Administrator may direct COUNTY staff to develop policies, guidelines, and strategic actions for Environmentally Preferred Procurement (EPP) practices for the COUNTY Government, and that the County Administrator may direct COUNTY staff to oversee the development and application of the guidelines COUNTY wide; and

That the County Administrator may direct COUNTY staff to provide on-going training and education opportunities for affected staff to further sustainable stewardship, and that the County Administrator may direct COUNTY staff to develop, promote, and implement sustainable stewardship education programs within the community, and establish marketing partnerships to advance these principles; and

That the COUNTY shall be guided by established energy efficiency standards providing for an integrated whole building design approach to ensure the best processes are implemented through every phase of design, construction and renovation so that buildings realize substantial economic and environmental benefits through their entire life cycle; and

That for the COUNTY to achieve these initiatives, the County Administrator may direct COUNTY staff to explore the feasibility of an Office of Sustainability, its structure, potential funding sources and partners, future benefits, roles, responsibility, and related dynamics and present its recommendations to the Board of County Commissioners.

2002-119

PASSED AND DULY ADOPTED BY THE BOARD OF COUNTY COMMISSIONERS OF SARASOTA COUNTY, FLORIDA, the 7th day of May, 2002, A.D.

BOARD OF COUNTY COMMISSIONERS
OF SARASOTA COUNTY, FLORIDA

By: Nora Patterson
Chairman

Attest:
Karen E. Rushing, Clerk of Circuit
County and Ex-Officio Clerk to the
Board of County Commissioners,
Sarasota County, Florida

By: Paula J. Klinterman
Deputy Clerk

City of Boulder
Environmental Purchasing Policy Directive

1. Statement of Intent

The City of Boulder's goal is to encourage and increase the use and procurement by City departments of recycled and environmentally preferable products. By using an affirmative procurement policy, the City seeks to (1) strengthen the markets for such products, (2) maximize diversion of materials from the solid waste stream, and (3) promote both human and environmental health.

2. Definitions

Products with recycled content or *recycled products:*

(a) Concerning printing and writing paper, the minimum content standard as certified by the manufacturer, shall be no less than 20 percent post-consumer materials beginning December 31, 1994, and increasing to 30 percent beginning on December 31, 1998. These minimum content standards are in accordance with the United States Federal Acquisition, Recycling and Waste Prevention policy.

(b) Concerning other goods, supplies, and materials for which the United States Environmental Protection Agency has adopted procurement guidelines under the Resource Conservation and Recovery Act of 1976 (RCRA) [40 CFR Part 247, et seq.] and RCRA section 6002, as amended, the minimum recycled content standard may not be less than the content standards specified in such guidelines.

(c) Concerning other non-paper products, products certified by the manufacturer to contain post-consumer material, with a percentage of post-consumer material content stated.

Post-consumer material: a material or product that has served its intended use and has been discarded for disposal or recovery by a final consumer.

Environmentally preferable product: a material or product which is durable, repairable, reusable, or recyclable; has a minimum of packaging, toxic content or chemical hazard potential; is resource or energy efficient in any or all phases of its manufacture, use, and disposal; or in its use or disposal minimizes or eliminates the City's potential environmental liability.

3. Goals and Monitoring

The City Purchasing office and the Environmental Affairs office shall establish (a) goals for increasing the purchase of products with recycled content and environmentally preferable products and (b) measures to monitor progress toward these goals. Progress shall be reviewed on an annual basis and the policy shall be revised as needed to increase participation and achieve the stated goals.

4. Minimum Recycled Content Standards

As stated in **Section 2. Definitions**, the City's definition of products with recycled content or recycled products will follow the EPA's Procurement Guidelines for RCRA Section 6002 and the United States Federal Acquisition, Recycling and Waste Prevention policy. Appendix A lists minimum recycled content standards for those products for which such standards have been established.

5. Purchasing Procedures

The City Purchasing Office and purchasing agents within City departments shall follow the procedures below to maximize purchase of products with post-consumer recycled content and environmentally preferable products:

(a) All bid documents shall include information on the City's programs to buy recycled and environmentally preferable products. Vendors shall be encouraged to provide bids on products with recycled content or which meet criteria for environmentally preferable products wherever such products meet the performance criteria specified in bid documents.

(b) To support the purchase of recycled products, purchasing agents have the following three options. They may:

(i) specify recycled content or criteria for environmentally preferable products or services as a necessary criterion in any bid document;

(ii) accept a bid which is not the lowest bid if (1) the lowest bid is for a non-recycled product and (2) a recycled content product meets the performance criteria specified, or (3) a bid other than the lowest bid meets the criteria for environmentally preferable products or services, or (4) a cost analysis conducted over the life and disposal of the product reveals lower total costs than are reflected in short-term analysis; or

(iii) award a portion of the contract to bidders offering recycled content or environmentally preferable products.

(c) Unless otherwise specified, bidders and contractors shall use recycled paper and double-sided copying for the production of all printed and photocopied documents related to the fulfillment of City contracts and shall otherwise fully comply with the provisions of this policy.

6. Expanding Procurement Opportunities

The City Purchasing office and the Office of Environmental Affairs shall:

(a) maintain and distribute to City departments a list of *Target Environmental Procurement Products.* This list, provided as Appendix B, shall contain:

(i) products which **must** be purchased as recycled content products and may not be purchased in virgin form;

(ii) products which are available with recycled content or which meet the criteria for environmentally preferable products, which departments **shall purchase whenever possible.**

(iii) provisions for exceptions in order to maintain health and safety, performance standards, and avoid undue financial hardship.

(b) work jointly to identify new products on the market and make information available to City departments on recycled and environmentally preferable products and services. Examples: carpet made from recycled plastic, wallboard and insulation from recycled paper, non-chlorine-bleached paper, non-toxic cleaners, oil recycling services, ceramic kitchen supplies, etc.

(c) work with the Fleets Division to ensure that the City meets its commitment to the Environmental Protection Agency's "Buy Recycled" Campaign to purchase rerefined lubricating oil and retread tires by April 18, 1994.

(d) where possible, establish programs to test recycled and environmentally preferable products. Examples: glassphalt, glass beads for paint and paving markers, plastic lumber (for traffic barricades and cones, fences, posts, guardrails, benches, picnic tables, decking), compost and mulch, non-toxic cleaning products; and

(e) encourage bidders to propose demonstration and trial uses of recycled and environmentally preferable products in applications which are highly visible and will promote the use of these products.

(f) identify opportunities to participate in cooperative purchasing programs with the state, other local cooperatives, or other states and cities to buy recycled or environmentally preferable products.

(g) monitor departments' purchases and participation in programs to carry out the intent of this directive policy.

7. **Specification Review**

All City departments, in consultation with the City Purchasing office and the Environmental Affairs office, shall report annually regarding a review of existing product and services specifications to:

(a) identify and eliminate any specifications that require the use of virgin products or exclude the use of recycled or environmentally preferable products, unless they can demonstrate to the satisfaction of the City Manager that such specifications are necessary to protect health and safety or that recycled or environmentally preferable products do not meet performance standards, unfairly eliminate competition, or are unreasonable in price, taking durability and liability into account; and

(b) revise specifications, where appropriate, to include recycled content and environmentally preferable criteria; and

(c) ensure that wherever possible, the department purchases or leases copiers, printers and offset equipment capable of using both recycled paper of the appropriate grade and reusable toner cartridges where applicable, and of making two-sided copies; and

(d) re-use and recycle, to the greatest extent possible, the waste produced as a result of any City-sponsored construction or renovation project.

8. **Performance, Availability, and Cost**

Nothing contained in this policy shall be construed as requiring a department or contractor to exclude adequate competition, procure products that do not perform adequately for their intended use, or are not available at a reasonable price in a reasonable period of time.

Kansas City, Missouri Green Purchasing Ordinance
ORDINANCE NO._____

Amending Chapter 2 of the Code of Ordinances, entitled "Administration", by repealing Section 2-1871, entitled "Use and purchasing generally", and enacting in lieu thereof a new section of like number establishing an environmentally preferable procurement policy.

BE IT ORDAINED BY THE COUNCIL OF KANSAS CITY:

Section 1. That Chapter 2 of the Code of Ordinances, entitled "Administration", is hereby amended by repealing Section 2-1871 therein, entitled "Use and purchasing generally", and enacting in lieu thereof a new Section 2-1871, said section to read as follows:

Section 2-1871. Environmentally preferable procurement policy.

(a) *Purpose.* This section shall be known as the "Kansas City Environmentally Preferable Procurement Policy." Its purpose is to support markets for recycled and other environmentally preferable products by affirmatively encouraging City departments, offices, agencies and contractors to buy and use such products whenever practicable and to encourage vendors to make such products available in the marketplace. It is the City's long term objective to integrate environmentally preferable policies into all City purchases. Decisions relating to the implementation of this policy shall initially be made by the specifying department with the understanding that the purchase of recycled and environmentally preferable products is an affirmative policy of the City.

(b) *Definitions.* The following terms shall have the assigned definitions for all purposes under this policy:

(1) *Compost products* means mulch, soil amendments, ground cover, or other landscaping material derived from the biological or mechanical conversion of cellulose-containing waste materials.

(2) *Environmentally preferable products* means products that have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and disposal of the product.

(3) *Post-consumer recycled material* means only those products generated by a business or consumer which have served their intended end uses, and which have been separated or diverted from the solid waste stream for the purposes of collection, recycling and disposition.

(4) *Practicable* means sufficient in performance and are available at a reasonable price.

(5) *Price preference* means a percentage by which offered prices for recycled or environmentally preferable products are temporarily reduced solely for purposes of bid evaluation and comparison.

(6) *Recyclable product* means a product which, after its intended end use, can demonstrably be diverted from the City solid waste stream for use as a raw material in the manufacture of another product.

(7) *Recycled material* means material and byproducts that have been recovered or diverted from solid waste and that can be utilized in place of raw or virgin material in manufacturing a product. It is derived from post-consumer recycled material, manufacturing waste, industrial scrap, agricultural waste, and other waste material, but does not include material or byproducts generated from, and commonly reused within, an original manufacturing process.
(8) *Recycled product* means a product containing recycled material.

(9) *Life cycle costing* means the identification and inclusion of all direct and indirect costs associated with a particular product or material. This includes the initial cost of purchase, anticipated maintenance and repair and the direct and indirect disposal costs associated with disposal or removal of the product at the end of its useful life. Wherever practicable, a full cost accounting methodology shall be applied in life cycle costing.

(10) *Full cost accounting* means the identification and inclusion of all direct and indirect costs associated with providing a particular service or program.

(11) *Contractor* means any person, group or group of persons, consultant, association, partnership, corporation or other business entity that has a contract with the City (including suppliers) or serves in a subcontracting capacity with an entity having a contract with the City for the provision of goods or services.

(c) Policies. The Mayor, City Manager and City Council shall strongly support and aggressively implement the Kansas City Environmentally Preferable Procurement Policy.

All department, offices and agencies shall, whenever cost effective and to the extent reasonable practicable, use and require their contractors and consultants to use, environmentally preferable products with the maximum amount of recovered materials.

The Commissioner of Purchases and the Environmental Management Department with the guidance of the Coordinating Committee on Environmentally Preferable Procurement shall maintain minimum content standards for the purchase of certain designated products, such as a minimum post-consumer recycled content or specific limitations on hazardous materials.

The Commissioner of Purchases shall establish a price preference of up to fifteen percent (15%) for recycled and other environmentally preferable products. This price preference shall be established in advance of any bid and may be modified from time to time in the discretion of the Commissioner of Purchases with the objective of maximizing the City's purchase of environmentally preferable products to the extent practicable. Varying price preferences may be established for different products and for the same product from time to time, subject to the maximum fifteen percent (15%) limitation.

All departments, offices and agencies shall make every reasonable effort to ensure that their contractors use recycled paper in printed materials, and that it bears the imprint identifying the recycled content whenever practicable, and that such contractors use both sides of paper sheets whenever practicable.

Departments, offices and agencies may specify recycled content or other environmentally preferable standards higher than the minimum standards established by this policy.

(d) *Coordinating Committee on Environmentally Preferable Procurement.* There is hereby created a Coordinating Committee on Environmentally Preferable Procurement, to serve without compensation. It shall be the duty of the Coordinating Committee on Environmentally Preferable Procurement to meet not fewer than ten times each year for the purpose of developing environmentally preferable procurement practices, coordinating the implementation of this Kansas City Environmentally Preferable Procurement Policy and recommending to the City Council, the Commissioner of Purchases, and the Environmental Management Director the ways and means of improving environmentally preferable procurement by the City, its departments, offices, agencies and contractors. The Committee shall consist of: one member of the City Council; one member of an environmental organization with offices in Kansas City; one representative of a Kansas City business committed to environmentally preferable purchasing practices; and the Directors of four City departments with significant

purchasing responsibilities, or their designated representatives; all of whom shall be appointed by, and serve at the
pleasure of, the Mayor. In addition the following shall also serve on the Committee:

The City Manager or a designated assistant who shall serve as chairperson;
The Commissioner of Purchases or a designated representative;

The Director of Environmental Management or a designated representative;

One member of the Environmental Management Commission designated by that Commission;

The Jackson County Purchaser or a designated representative.

The Director of Environmental Management shall be the secretary and shall provide administrative support for the Committee.

(e) *Responsibilities of Environmental Management Department.* The Environmental Management Department shall:

(1) Serve as a resource to the Commission of Purchases and the Coordinating Committee to provide environmental expertise and to assist the Purchasing Division in the exercise of its responsibilities under this policy.

(2) Serve on such committees and task forces as may reasonable be requested by the Commission of Purchases or otherwise required to aid in the implementation of this policy.

(3) Provide a resource to the Commission of Purchases and City departments, offices and agencies to develop and maintain information about environmentally preferable products and recycled products and to encourage the implementation of this policy throughout City departments.

(4) Develop and maintain information about environmentally preferable products and recycled products containing the maximum practicable amount of recycled materials available for purchase by departments, offices and agencies whenever possible. Initially, these shall include the products designated in paragraph (h) of this Section.

(5) Assist the Commissioner of Purchases, as requested, in gathering information necessary for the submission of an annual report to the City Council as provided in Section (f)(5) hereof.

(6) Publicize the progress of policy implementation.

(f) *Responsibilities of Commissioner of Purchases.* The Commissioner of Purchases shall:

(1) Develop and maintain information about environmentally preferable products and recycled products containing the maximum practicable amount of recycled materials, available for purchase by departments, offices and agencies whenever possible. Initially, these shall include the products designated in paragraph (g) of this Section. The Commissioner of Purchases may modify this list as the Commissioner determines to be appropriate.

(2) Inform departments, offices and agencies to review policy requirements and new procurement opportunities, and to monitor the status of policy implementation product research results.

(3) Disseminate information on recycled and environmentally preferable product procurement opportunities, specifications, and performance to departments, offices and agencies.

(4) Communicate with departments, offices and agencies to review policy requirements and new

procurement opportunities, and to monitor the status of policy implementation product research results.

(5) Submit an annual report to the City Council reflecting the implementation status of the procurement program, including:

(i) A compilation of procurement data collected from all departments and other parties charged with implementation responsibility under this policy,

(ii) An account of the current status of product evaluations conducted by departments,

(iii) An assessment of procurement program effectiveness, an evaluation of program goals, and projections of future procurement opportunities, and

(iv) Recommendations for changes in procurement policy.

(6) Provide a readily accessible opportunity for other City departments, offices and agencies to provide input, feedback and recommendations for changes to the Kansas City Environmentally Preferable Procurement Policy and its implementation.

(7) Require that vendors utilized by the Purchasing Division maintain and report to the City the quantity and quality of recycled and environmentally preferable products purchased through the Purchasing Division during each fiscal year.

(g) *Responsibility of all other City departments, offices and agencies.* Each City department, office and agency shall:

(1) Survey existing service and product specifications to determine whether existing requirements require the use of products manufactured from virgin materials or in any manner exclude recycled, refined, remanufactured, reusable or renewable products or materials and to report the results of such survey to the Commissioner of Purchases and Environmental Management Director.

(2) Evaluate each recycled or environmentally preferable product designated by the Commissioner of Purchases to determine the extent to which the product may be practicably used by the department, office or agency and its contractors.

(3) Purchase recycled products with the maximum amount of recycled materials practicable.

(4) Ensure that contracts issued by the department, office or agency require recycled and environmentally preferable products wherever practicable.

(5) Ensure that contracts issued by the department, office or agency for recycled products require the maximum practicable amount of recycled material and that contractors provide certification of this content and report amounts used.

(6) Ensure that all printing by City departments, offices or agencies used recycled paper and bear the chasing arrow logo or other imprint identifying it as such, wherever practicable.

(7) Whenever recycled content products are used, reasonable efforts shall be undertaken to label the products to indicate that they contain recycled material.

(8) Use both sides of paper sheets whenever practicable in printing and copying.

(9) Ensure that requests for bids and proposals issued by the City require that, whenever practicable, contractors use recycled paper and both sides of paper sheets.

(10) As requested by the Commissioner of Purchases, report the progress of policy implementation by the department to the Commissioner of Purchases, including the status of product evaluations conducted by the department and types of environmentally preferable products purchased by the department and its contractors; and specifically address problems, satisfactions and recommendations.

(11) Report total purchases of environmentally preferable, recycled, and non-recycled products by the department and its contractors annually to the Commissioner of Purchases.

(12) Reporting requirements under this policy shall be addressed by the department, office or agency ordering or requesting the product and not the department, office or agency to whom it is shipped or which
uses the product to produce an item requested by another department, office or agency.

(h) *Environmentally preferable products.* The Commissioner of Purchases shall periodically designate certain products or product lines as targets for environmentally preferable City purchases. The Environmental Management Director, the Coordinating Committee and all City departments shall cooperate with the Commissioner of Purchases to examine purchases within those targeted lines and explore alternative environmentally preferable products to the fullest extent reasonably practicable. The following product lines are initially designated as areas of focus for environmentally preferable purchases:

(1) Paper and paper products

(2) Compost products

(3) Horticultural mulch made with recycled land clearing and other wood debris.

(4) Construction aggregates made with recycled content concrete, glass or asphalt.

(5) Cement and asphalt concrete containing glass cullet, recycled fiber or plastic, tire rubber, or fly ash.

(6) Lubricating oil and hydraulic oil with re-refined oil content.

(7) Antifreeze.

(8) Recycled plastic products.

(9) Remanufactured tires and products made from recycled tire rubber, including rubber mats and play field surfaces.

(10) Insulation products.

(11) Paint.

(12) Remanufactured laser printer toner cartridges.

(13) Alternative fuels and automotive products.

(14) Cleaning products.

(15) Other products as designated by the Commissioner of Purchases.

Approved as to form and legality:

Assistant City Attorney.

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6 ENVIRONMENTAL POLICIES AND PROCEDURES

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6.14 Environmentally Responsible Purchasing

6.14.1 Purpose

To expand and promote the City's use of environmentally preferable products and services.

6.14.2 Organizations Affected

All City departments and offices that make purchases of any kind or that contract with others to make purchases.

6.14.3 Definitions

Environmentally Preferable Product: A product that has a lesser or reduced negative effect on human health and the environment when compared with competing products that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and disposal of the product. This term includes, but is not limited to, recyclable products, recycled products, and reusable products.

Life Cycle Analysis: The comprehensive examination of a product's environmental and economic effects throughout its lifetime, including new material extraction, transportation, manufacturing, use, and disposal.

Practicable: Satisfactory in performance and available at a fair and reasonable price.

Recyclable Product: A product that, after its intended end use, can demonstrably be diverted from the City's solid waste stream for use as a raw material in the manufacture of another product, preferably higher value uses.

Recycled Product: A product containing recycled material.

Reusable Product: A product, such as a washable food or beverage container or a refillable ballpoint pen, that can be used several times for an intended use before being discarded.

6.14.4 Policy

The City shall acquire its goods and services in a manner that complies with federal, state, and City laws. The City shall promote the use of environmentally preferable products in its acquisition of goods and services. Environmental factors to be considered in selecting products include life cycle analysis of:

- Pollutant releases;
- Waste generation;
- Recycled content;
- Energy consumption;

- Depletion of natural resources; and
- Potential impact on human health and the environment.

City departments shall use, where practicable, reusable products, recycled-content products, and recyclable products.

Recognizing its role as a major purchaser of goods and services, the City shall seek opportunities to enhance markets for environmentally preferable products through employee education; encourage pilot testing of potential new products; adopt innovative product standards, specifications, and contracts; and embark on cooperative ventures with other jurisdictions.

6.14.5 Procedures and Responsibilities

6.14.5.1 Product Standards

The Director of the Executive Services Department (ESD) shall be responsible for:

- Adopting standards that specify minimum recycled content, recyclability, reusability, or other aspects of environmental preferability, consistent with the U.S. Environmental Protection Agency (USEPA) and Washington State standards. In no case shall these standards be less stringent than USEPA standards. In addition, ESD may adopt standards for products that have not been addressed by USEPA or Washington State;
- Encouraging pilot testing for environmentally preferable products; and
- Consulting with the appropriate departments regarding technical and performance specifications of products in those situations where a department has specific expertise in the use of a product or the establishment of a product's performance specifications.

6.14.5.2 Specifications and Contracts

The Director of the ESD shall be responsible for:

- Revising existing procurement policies and specifications to ensure that they include environmentally preferable standards, unless a recycled content or recyclable or reusable product does not meet the established performance standard of a department;
- Considering environmentally preferable factors in evaluating responsiveness of prospective bidders and establishing price preferences, if applicable, in its procurement of goods and services; and
- Utilizing expertise of City staff, through user-groups or other means, to pilot-test environmentally preferable products.

The director of each City department shall require, whenever practicable, its vendors, contractors, and consultants to use recycled-content paper on all documents submitted to the City and to use other environmentally preferable products, as appropriate.

6.14.5.3 Education and Technical Assistance

The Director of the ESD, in conjunction with the Director of Seattle Public Utilities, shall be responsible for establishing user-friendly tools to disseminate information to City staff about reusable, recycled content, recyclable, and otherwise environmentally preferable products; about vendors and City contracts for such products; and about user groups and other opportunities to test and discuss new products.

The director of each City department shall be responsible for:

- Ensuring departmental use, where practicable, of environmentally preferable products through training, information dissemination, development of internal procedures, and other means; and

- Ensuring departmental participation in user groups, pilot testing programs for new products, and other citywide efforts established to implement this policy.

6.14.5.4 Data Collection and Performance Reporting

The Director of the ESD shall be responsible for:

- Working with other departments to design and implement a data collection system for performance tracking and evaluation of the City's environmentally responsible purchasing program; and

- Compiling records for the purposes of producing an annual summary of the City's environmentally responsible purchasing actions, and for evaluating the effectiveness of these actions in reducing the environmental impacts of City procurement.

The director of each City department shall cooperate in information gathering for the purposes of tracking, reporting, and evaluating the environmentally responsible purchasing program.

6.14.5.5 Market Enhancement

The Director of the ESD shall be responsible for:

- Seeking opportunities to cooperate with other jurisdictions to enhance markets for environmentally preferable products, to obtain favorable prices, and to reduce waste packaging and product by combining purchases/contracting for the same or similar products; and

- Promoting the use of recycled-content products, recyclable products, and other environmentally preferable products to potential vendors to the City by publicizing their availability.

6.14.6 References

- Resolution 27828, directing Solid Waste to develop policies and practices to encourage, increase, and require recycling, waste reduction, and the purchase of recycled products.

- Resolution 28556, authorizing the Director of ESD to develop a "Recycled-content Procurement Plan."

- Seattle Municipal Code 3.18.900 - 926 (Ordinance 116720 and 116726).

- U.S. Executive Order 12873 and *"Greening the Government: A Guide to Implementing Executive Order 12873."*

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Julie Tobin (206-615-0817)
Last Updated: 5/18/01

Executive Order
Number 6 (2000)

Executive Order Establishing the Green Illinois Government Coordinating Council

WHEREAS, like other large businesses, manufacturers and service providers, state executive agencies generate waste products and consume large quantities of natural resources through their operation and the items they purchase;

WHEREAS, Illinois' economy and the health, safety and quality of life of its citizens are dependent on the careful stewardship of resources and utilization of environmentally-sustainable practices;

WHEREAS, state government can be a model for environmental leadership by implementing pollution prevention and resource conservation programs that not only enhance environmental protection, but also save taxpayers' money through reduced material costs, waste disposal costs and utility bills;

WHEREAS, state government can foster markets for emerging environmental technologies and products, and promote a culture of environmental sensitivity;

WHEREAS, a program of environmental education, demonstration projects and technical assistance is needed to better inform each executive agency about the opportunities and benefits of pollution prevention and resource conservation.

NOW THEREFORE, BE IT RESOLVED THAT I, George Ryan, by virtue of the power vested in me as Governor, do hereby establish the Green Illinois Government Coordinating Council (hereinafter referred to as "Council").

1. **Purpose of the Council.** The purpose of the Council is to, cooperatively across executive agency jurisdictions, facilitate the incorporation of pollution prevention and resource conservation practices into government management and operations, including but not limited to source and waste reduction, energy efficiency, water conservation, recycling/reuse, green building design and environmentally-friendly purchasing.

2. **Composition of the Council.** The Council shall include the Directors of the following agencies or their designees: Department of Commerce and Community Affairs, Environmental Protection Agency, Department of Natural Resources, Waste Management and Research Center, Department of Central Management Services, Department of Agriculture and Capital Development Board. The council shall be jointly chaired by the Directors of the Environmental Protection Agency and Department of Central Management Services or their designees. The

Environmental Protection Agency shall provide administrative support to the Council.

3. **Responsibilities of the Council.** The Council shall be responsible for the development of programs, plans and policies that prevent pollution and conserve natural resources throughout state government. The Council shall convene quarterly during the year and be responsible for the following:

    a. Review of state procurement guidelines and development of recommendations for increasing acquisition of recycled content products and incorporating other favorable environmental attributes into the state procurement process, consistent with price, performance, availability and safety considerations. Such environmental attributes may include but are not limited to energy efficiency, water conservation, toxics use reduction, conservation of natural resources and waste minimization.

    b. Creation of an incentives program that recognizes or rewards state employees for developing projects and/or work practices that achieve exemplary results in preventing pollution or conserving natural resources in government management or operations.

    c. Implementation of an environmentally-sustainable technologies and products demonstration program that tests the viability of incorporating innovative pollution prevention and resource conservation practices into government management and operations. The Council shall consider a broad range of environmental technologies and products in implementing the demonstration program, such as: energy and water conserving products; paints, cleaners, printing inks and other chemical items that have reduced pollutants; office paper reduction practices; installation of more efficient lighting systems; use of renewable energy technologies and fuels; landscaping techniques that minimize unnecessary water usage; alternatives to mercury-containing medical products and equipment; integrated pest management procedures; and use of reusable shipping containers. On or before September 1 of each year, the Council shall prepare an annual report that summarizes program accomplishments and identifies issues of future importance.

    d. Development of guidance materials to assist executive state agencies in identifying environmental impacts and evaluating practical actions to prevent pollution and conserve resources.

    e. Designation of a team of engineers and technical specialists to provide information, training and on-site consultation to

executive agencies on pollution prevention and resource conservation opportunities.

f. Creation of an educational program to help state employees understand the importance of environmental issues and the opportunities to use pollution prevention and resource conservation practices in daily decisions.

g. Identification of sustainable and energy-efficient design criteria for new and renovated building space.

4. **Responsibilities of State Agencies.**

   a. Each executive agency shall form an internal committee to assess the environmental impacts of its activities and identify practical alternatives for incorporating pollution prevention and resource conservation into agency management and operational practices. The committee shall consist of representatives from different departments and program areas, including purchasing, maintenance and facility management. A chairperson shall be appointed to coordinate committee activities and act as liaison to the Council.

   b. On or before March 1 of each year, each executive agency shall submit to the Council a list of any pollution prevention or resource conservation projects that were implemented in the previous calendar year. The Council shall assemble the individual agency projects and submit them, together with an executive summary, to the Governor before September 1 of each year.

   c. All executive agencies under the Governor's jurisdiction shall cooperate fully with the Council and provide assistance and information as needed to carry out its functions effectively.

   d. Independent agencies shall be invited to participate in the Council's efforts to foster pollution prevention and resource conservation practices throughout state government.

5. **Effective Date.** This order shall take effect immediately.

6. **Termination Date.** This order shall remain in effect unless revised or rescinded by the Governor.

Environmentally Preferable Purchasing:
A Getting Started Guide

Model Policies & Initiatives

State of Maine

Environmentally Preferable Procurement Program

Pursuant to the State of Maine Environmentally Preferable Procurement (EPP) Policy, the State hereby establishes an EPP Program to reduce the environmental and health impacts associated with procurement, reduce costs where possible, and increase operational efficiency. Under the program, the State shall engage in multiple strategies, which will include:

- Establishing an EPP Team with membership from the Departments of Administrative and Financial Services and Environmental Protection. Work will include developing and communicating specific work plans that promote the State EPP Policy, researching new environmentally sustainable products, educating employees about emerging best-practices in EPP, periodically re-evaluating goals, practices, and the EPP Policy and Program, and developing and providing information for State agencies to help them identify, assess, and procure EPP products, when feasible;

- Considering several factors in making best value (as that term is defined at 5 M.R.S.A. § 1825-B(7)) determinations, including, but not limited to, fuel efficiency and use of alternative fuels, recycled content percentages, energy- and water-efficiency ratings, materials content, emissions, waste generation, toxicity, and recyclability;

- Seeking recognized certifications in determining the products that best reflect the policy;

- Increasing the selection of EPP products on State contracts and eliminating non-EPP product alternatives, when feasible;

- Working with vendors to learn about and promote EPP;

- Identifying EPP cost-saving opportunities through product life-cycle cost assessments and alternative procurement methods;

- Setting annual targets for increased EPP purchases and communicating those targets to State agencies;

- Continuing to offer municipalities and school districts the opportunity to benefit from various State of Maine contracts, including those involving EPP products;

- Identifying the most significant purchases made on an annual basis and taking steps to ensure that the products contain EPP criteria when feasible; and

- Incorporating EPP specifications into service contracts and grants.

Product Stewardship Policy Initiative

Subdivision 1: Policy

Consistent with Minnesota Statutes, section 115A.02, it is the goal of the state to promote resource conservation and protect the public health and the environment through product stewardship. Product stewardship is one method used by the state to conserve resources, prevent waste and reduce toxicity and hazardous constituents of products.

The principles of product stewardship are:

1. All parties who have a role in designing, producing, or selling a product or product components assume responsibility for achieving the following goals:
   - Reducing or eliminating the toxic and hazardous constituents of products and product components.
   - Reducing the toxicity and amount of waste that results from the manufacture, use and disposal of products.
   - Using materials, energy and water efficiently at every stage of a product's life cycle, including product manufacture, distribution, sale, use and recovery.
2. All purchasers and users are responsible for reducing the amount of toxicity and waste that result from their use and disposal of products, and for using products in a manner that conserves resources.
3. The greater the ability of a party to influence the life-cycle impacts of the product, the greater the degree of responsibility the party has for addressing those impacts.
4. Parties responsible for addressing environmental impacts of products have flexibility in determining how to best address those impacts.
5. The costs of recovering resources and managing products at the end of life are internalized into the costs of producing and selling products, so that those costs are not paid for by government.
6. Government provides leadership in product stewardship in all its activities, including but not limited to, promoting product stewardship in purchasing products, making capital investments in buildings and infrastructure, procuring services, and ensuring products are recycled or properly managed at the end of their useful lives.

Subdivision 2: Priority product selection

(a) Based on criteria established in subd. 2(c), the following products are priority products upon enactment of this subdivision into law. The Director, in consultation with the parties specified in subd. 2(b), shall establish recovery and recycling goals as required under subd. 3 for the priority products listed below. Priority products are subject to the actions and requirements specified in subd. 3 and subd. 4.

1. Electronic products containing cathode ray tubes.
2. Paint, both latex and oil paint.
3. Carpet.

(b) beginning in 2001 and in each odd numbered year thereafter, the Director may recommend products to be established as priority products by the Legislature. The Director also may recommend products to be removed from the priority product list, as appropriate. The Director's recommendation shall be included in the solid waste policy report as required by section 115A.411. When developing the recommendation, the Director shall consult with representatives of appropriate interested parties, including but not limited to, the Commissioner, representatives of manufacturers, retailers, product users, environmental organizations, local government, and recycling and solid waste management service providers.

(c) the Director, in consultation with the parties specified in subd. 2 (b), shall use the following criteria to select priority products for recommendation to the Legislature. The products the Director recommends as priority products must demonstrate one or more of the following characteristics:

1. contain toxic or hazardous constituents;
2. are banned by statute or rule from disposal within MSW;
3. pose a threat to the safe or efficient operation of a solid waste facility or the solid waste system;
4. place significant economic burdens on the state or political subdivisions for end-of-life management because there is a significant amount of the product in the waste stream or because the nature of the product makes it difficult to manage in the existing integrated solid waste system;
5. possess significant potential for increased reuse and recycling.

Subdivision 3: Establishment of Recovery and Recycling Goals

(a) Within one year of enactment of legislation establishing a product as a priority product, and in consultation with the parties specified in subd. 2(b), the Director shall establish recovery and recycling goals for each priority product.

1. The goals shall identify levels of recovery and recycling appropriate for the priority products and the dates by which the goals shall be met.
2. When developing recovery and recycling goals appropriate for each priority product, the Director shall consider such factors as the current and potential opportunities for reduction, reuse, remanufacturing and recycling of the product, the existing and needed infrastructure for managing the product, and the availability of alternative products.

(b) Manufacturers responsible for meeting the requirements for priority products specified in subdivision 4 shall report biennially to the OEA on progress toward meeting the goals, including the total amount of products recovered and recycled. Industry associations or groups may submit a report on behalf of all parties to satisfy the reporting requirement.

Subdivision 4: Requirements for Priority Products

A manufacturer whose product is selected as a priority product shall:

1. ensure that the product is managed in a manner sufficient to meet the recovery and recycling goals as established in subdivision 3.
2. ensure that end-of-life management costs for priority products are not borne by government entities and are internalized into cost of the product. Government entities may agree to participate in operating collection programs for specific priority products.

3. provide clear information to final purchasers or users of a product about the options available for the reuse, recycling or recovery of priority products and how to access those options.

Subdivision 5. Monitoring Progress

The Director shall monitor progress towards meeting the goals established in subd. 3. If the Director determines that adequate progress toward the goals has not been made for a specific priority product, the Director shall recommend additional action for the Legislature to take in order to achieve the goals for that product.

Subdivision 6: State Assistance to Meet Recovery and Recycling Goals

To foster product stewardship, the Office shall provide assistance in meeting the goals established in subdivision 3. The Director may consider providing assistance such as the following:

(a) in conjunction with manufacturers, provide statewide education for consumers which promotes product stewardship and information on end-of-life management of priority products;

(b) promote innovative state assistance, such as regulatory reinvention efforts, to ease regulatory barriers to reuse and recycling of priority products, or the use of statewide contracts with manufacturers of priority products to provide the services to satisfy the requirements in subd. 4(a)(2).

(c) in conjunction with manufacturers, create a market development plan for each priority product which assesses recycling and recovery capacity in Minnesota, including the economic viability of recycling the product, and describes actions to be undertaken by the state and manufacturers to increase market opportunities in Minnesota, if necessary;

(d) direct a grant priority to promote environmentally preferable design of priority products;

(e) Work with the Commissioner of the Department of Administration and other state agencies to promote product stewardship in purchasing products, making capital investments in buildings and infrastructure, procuring services, and managing products at the end of their useful lives.

ENVIRONMENTALLY PREFERABLE PURCHASING
MODEL POLICY

PREPARED BY ALAMEDA COUNTY WASTE MANAGEMENT AUTHORITY
AND SOURCE REDUCTION AND RECYCLING BOARD

1.0 STATEMENT OF POLICY

It is the policy of [jurisdiction] to:

- institute practices that reduce waste by increasing product efficiency and effectiveness,
- purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable, and
- purchase products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, are lead-free and mercury-free, and use wood from sustainably harvested forests.

2.0 PURPOSE

This Policy is adopted in order to:

- conserve natural resources,
- minimize environmental impacts such as pollution and use of water and energy,
- eliminate or reduce toxics that create hazards to workers and our community,
- support strong recycling markets,
- reduce materials that are landfilled,
- increase the use and availability of environmentally preferable products that protect the environment,
- identify environmentally preferable products and distribution systems,
- reward manufacturers and vendors that reduce environmental impacts in their production and distribution systems or services,
- create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

3.0 SPECIFICATIONS

3.1 Source Reduction

3.1.1 [Jurisdiction] shall institute practices that reduce waste and result in the purchase of fewer products whenever practicable and cost-effective, but without reducing safety or workplace quality.

3.1.2 [Jurisdiction] shall purchase remanufactured products such as laser toner cartridges, tires, furniture, equipment and automotive parts whenever practicable, but without reducing safety, quality or effectiveness.

3.1.3 [Jurisdiction] shall require all equipment bought after the adoption of this policy to be compatible with source reduction goals as referred to in this section (3.1), when practicable.

3.1.4 All buyers shall consider short-term and long-term costs in comparing product alternatives, when feasible. This includes evaluation of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives.

3.1.5 Products that are durable, long lasting, reusable or refillable are preferred whenever feasible.

3.1.6 [Jurisdiction] requests vendors to eliminate packaging or use the minimum amount necessary for product protection, to the greatest extent practicable.

3.1.7 Packaging that is reusable, recyclable or compostable is preferred, when suitable uses and programs exist.

3.1.8 Vendors shall be encouraged to take back and reuse pallets and packaging materials.

3.1.9 Suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be required to take back equipment for reuse or environmentally safe recycling when [jurisdiction] discards or replaces such equipment, whenever possible.

3.2 Recycled Content Products

3.2.1 All products for which the United States Environmental Protection Agency (U.S. EPA) has established minimum recycled content standard guidelines, such as those for printing paper, office paper, janitorial paper, construction, landscaping, parks and recreation, transportation, vehicles, miscellaneous, and non-paper office products, shall contain the highest postconsumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

3.2.2 Copiers and printers bought shall be compatible with the use of recycled content products.

3.2.3 In accordance with California Public Contract Code, Sec. 10409, [jurisdiction] shall purchase re-refined lubricating and industrial oil for use in its vehicles and other equipment, as long as it is certified by the American Petroleum Institute (API) as appropriate for use in such equipment.

3.2.4 When specifying asphalt concrete, aggregate base or portland cement concrete for road construction projects, [jurisdiction] shall use recycled, reusable or reground materials when practicable.

3.2.5 [Jurisdiction] shall specify and purchase recycled content transportation products, including signs, cones, parking stops, delineators, and barricades.

3.2.6 All pre-printed recycled content papers intended for distribution that are purchased or produced shall contain a statement that the paper is recycled content.

3.3 Energy and Water Savings

3.3.1 Where applicable, energy-efficient equipment shall be purchased with the most up-to-date energy efficiency functions. This includes, but is not limited to, high efficiency space heating systems and high efficiency space cooling equipment.

3.3.2 When practicable, [jurisdiction] shall replace inefficient lighting with energy-efficient equipment.

3.3.3 All products purchased by [jurisdiction] and for which the U. S. EPA Energy Star certification is available shall meet Energy Star certification, when practicable. When Energy Star labels are not available, choose energy-efficient products that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program.

3.3.4 [Jurisdiction] shall purchase water-saving products whenever practicable.

3.4 Green Building - Construction and Renovations

3.4.1 All building and renovations undertaken by [jurisdiction] shall follow Green Building practices for design, construction, and operation, where appropriate, as described in the LEED™ Rating System.

3.5 Landscaping

3.5.1 All landscape renovations, construction and maintenance by [jurisdiction], including workers and contractors providing landscaping services for [jurisdiction], shall employ Bay-Friendly Landscaping or sustainable landscape management techniques for design, construction and maintenance whenever possible, including, but not limited to, integrated pest management, grasscycling, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.

3.5.2 Plants should be selected to minimize waste by choosing species for purchase that are appropriate to the microclimate, species that can grow to their natural size in the space allotted them, and perennials rather than annuals for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.

3.5.3 Hardscapes and landscape structures constructed of recycled content materials are encouraged. [Jurisdiction] shall limit the amount of impervious surfaces in the landscape, wherever practicable. Permeable substitutes, such as permeable asphalt or pavers,, are encouraged for walkways, patios and driveways.

3.6 Toxics and Pollution

3.6.1 To the extent practicable, no cleaning or disinfecting products (i.e. for janitorial or automotive use) shall contain ingredients that are carcinogens, mutagens, or teratogens. These include chemicals listed by the U.S. EPA or the National Institute for Occupational Safety and Health on the Toxics Release Inventory and those listed under Proposition 65 by the California Office of Environmental Health Hazard Assessment.

3.6.2 The use of chlorofluorocarbon-containing refrigerants, solvents and other products shall be phased out and new purchases shall not contain them.

3.6.3 All surfactants and detergents shall be readily biodegradable and, where practicable, shall not contain phosphates.

3.6.4 When maintaining buildings and landscapes, [jurisdiction] shall manage pest problems through prevention and physical, mechanical and biological controls. [Jurisdiction] may either adopt and implement an organic pest management policy and practices or adopt and implement an Integrated Pest Management (IPM) policy and practices using the least toxic pest control as a last resort.

3.6.5 When maintaining buildings, the [jurisdiction] shall use products with the lowest amount of volatile organic compounds (VOCs), highest recycled content, and low or no formaldehyde when purchasing materials such as paint, carpeting, adhesives, furniture and casework.

3.6.6 [Jurisdiction] shall reduce or eliminate its use of products that contribute to the formation of dioxins and furans. This includes, but is not limited to:

- Purchasing paper, paper products, and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives, whenever possible.
- Prohibiting purchase of products that use polyvinyl chloride (PVC) such as, but not limited to, office binders, furniture, flooring, and medical supplies whenever practicable.

3.6.7 [Jurisdiction] shall purchase products and equipment with no lead or mercury whenever possible. For products that contain lead or mercury, [jurisdiction] shall give preference to those products with lower quantities of these metals and to vendors with established lead and mercury recovery programs.

3.6.8 When replacing vehicles, [jurisdiction] shall consider less-polluting alternatives to diesel such as compressed natural gas, biobased fuels, hybrids, electric batteries, and fuel cells, as available.

3.7 Forest Conservation

3.7.1 To the greatest extent practicable, [jurisdiction] shall not procure wood products such as lumber and paper that originate from forests harvested in an environmentally unsustainable manner. When possible, [jurisdiction] shall give preference to wood products that are certified to be sustainably harvested by a comprehensive, performance-based certification system. The certification system shall include independent third-party audits, with standards equivalent to, or stricter than, those of the Forest Stewardship Council certification.

3.8 Agricultural Bio-Based Products

3.8.1 Vehicle fuels made from non-wood, plant-based contents such as vegetable oils are encouraged whenever practicable.

3.8.2 Paper, paper products and construction products made from non-wood, plant-based contents such as agricultural crops and residues are encouraged whenever practicable.

4.0 PRIORITIES

4.1 The health and safety of workers and citizens is of utmost importance and takes precedence over all other policies.

4.2 [Jurisdiction] has made significant investments in developing a successful recycling system and recognizes that recycled content products are essential to the continuing viability of that recycling system and for the foundation of an environmentally sound production system. Therefore, to the greatest extent practicable, recycled content shall be included in products that also meet other specifications, such as chlorine free or bio-based.

4.3 Nothing contained in this policy shall be construed as requiring a department, purchaser or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

4.4 Nothing contained in this policy shall be construed as requiring the [jurisdiction], department, purchaser or contractor to take any action that conflicts with local, state or federal requirements.

5.0 IMPLEMENTATION

5.1 The [Director of Purchasing, Director of Finance, other responsible director] shall implement this policy in coordination with other appropriate jurisdiction personnel.

5.2 Successful bidders shall certify in writing that the environmental attributes claimed in competitive bids are accurate. In compliance with State law, vendors shall be required to specify the minimum or actual percentage of recovered and postconsumer material in their products, even when such percentages are zero.

5.3 Upon request, buyers making the selection from competitive bids shall be able to provide justification for product choices that do not meet the environmentally preferable purchasing criteria in this policy.

5.4 Purchasers shall include businesses certified by the Bay Area Green Business Program in requests for products and services.

5.5 Vendors, contractors and grantees shall be encouraged to comply with applicable sections of this policy for products and services provided to the [jurisdiction], where practicable.

6.0 PROGRAM EVALUATION

6.1 The [Director of Finance, Director of Purchasing, other position responsible for implementing this policy] shall periodically evaluate the success of this policy's implementation.

7.0 DEFINITIONS

7.1 "Agricultural Bio-Based Products" means commercial or industrial products (other than food or feed) that utilize agricultural crops or residues but does not include products made from forestry materials.

7.2 "Bay Area Green Business Program" is a partnership of governments and businesses that certifies the environmental performance of government agencies and businesses.

7.3 "Bay-Friendly Landscaping" means working with the natural ecosystems of the San Francisco Bay Area to foster soil health, to reduce runoff and pollution, prevent and reuse plant waste, conserve water and other natural resources. Bay-Friendly Landscaping practices are described in the forthcoming *Bay-Friendly Landscape Guidelines*, by the Alameda County Waste Management Authority & Recycling Board.

7.4 "Buyer" means anyone authorized to purchase or contract for purchases on behalf of this jurisdiction or its subdivisions.

7.5 "Chlorine free" means products processed without chlorine or chlorine derivatives.

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

7.7 "Dioxins and furans" are a group of chemical compounds that are classified as persistent, bioaccumulative, and toxic by the Environmental Protection Agency.

7.8 "Energy Star" means the U.S. EPA's energy efficiency product labeling program.

7.9 "Energy Efficient Product" means a product that is in the upper 25% of energy efficiency for all similar products, or that is at least 10% more efficient than the minimum level that meets Federal standards.

7.10 "Federal Energy Management Program" is a program of the Department of Energy that issues a series of *Product Energy Efficiency Recommendations* that identify recommended efficiency levels for energy-using products.

7.11 The "Forest Stewardship Council" is a global organization that certifies responsible, on-the-ground forest management according to rigorous standards developed by a broad variety of stakeholder groups.

7.12 "Integrated Pest Management (IPM)" is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.

7.13 "LEED™ Rating System" means the self-assessing system developed by the U.S. Green Building Council designed for rating new and existing commercial, institutional, and high-rise residential buildings.

7.14 "Organic Pest Management" prohibits the use and application of toxic chemical pesticides and strives to prevent pest problems through the application of natural, organic horticultural

and maintenance practices. All pest control products shall be in keeping with, but not limited to, those products on the approved list of California Certified Organic Foods (CCOF).

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

7.16 "Practical" and "Practicable" mean whenever possible and compatible with local, state and federal law, without reducing safety, quality, or effectiveness and where the product or service is available at a reasonable cost in a reasonable period of time.

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

7.18 "Proposition 65" means a list of chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

7.19 "Recovered Material" means fragments of products or finished products of a manufacturing process, which has converted a resource into a commodity of real economic value, and includes preconsumer and postconsumer material but does not include excess resources of the manufacturing process.

7.20 "Recycled Content" means the percentage of recovered material, including preconsumer and postconsumer materials, in a product.

7.21 "Recycled Content Standard" means the minimum level of recovered material and/or postconsumer material necessary for products to qualify as "recycled products."

7.22 "Recycled Product" means a product that meets [jurisdiction's] recycled content policy objectives for postconsumer and recovered material.

7.23 "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.

7.24 "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.

7.25 "Source Reduction" refers to products that result in a net reduction in the generation of waste compared to their 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.

7.26 The "Toxics Release Inventory" (TRI) is a publicly available U. S. EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities.

7.27 "U.S. EPA Guidelines" means the Comprehensive Procurement Guidelines established by the U.S. Environmental Protection Agency for federal agency purchases as of May 2002 and any subsequent versions adopted.

7.28 "Water-Saving Products" are those that are in the upper 25% of water conservation for all similar products, or at least 10% more water-conserving than the minimum level that meets the Federal standards.

8.0 EFFECTIVE DATES

8.1 This policy shall take effect on [date].

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Reducing the Waste Stream for Alameda County

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Environmentally Preferable Purchasing Policy Implementation

ENVIRONMENTALLY PREFERABLE PURCHASING
IMPLEMENTATION GUIDANCE FOR THE MODEL POLICY*

PREPARED BY ALAMEDA COUNTY WASTE MANAGEMENT AUTHORITY
AND SOURCE REDUCTION AND RECYCLING BOARD (ACWMA)

This ***Implementation Guidance*** is a supplement to the **Environmentally Preferable Purchasing *Model Policy***. It provides additional information for purchasers on selected sections of the *Model Policy* to help write specifications, evaluate products and services, and further implement the Policy. For example, websites and other information for additional resources are provided for regulations and specifications referenced in the *Model Policy*.

For ease in cross-referencing, the sections numbered below correspond to the numbering in the *Model Policy*. Included are the following:

- Section 3.0 Specifications for Source Reduction, Recycled Content Products, Energy and Water Savings, Green Building – Construction and Renovations, Landscaping, and Toxics and Pollution.
- Section 5.0 Implementation.
- Section 6.0 Program Evaluation.

Definitions are also provided for new terms or references in this *Implementation Guidance*.

If you have questions, or need any assistance in either modifying the Model Policy for adoption by your organization or implementing any or all aspects of the Policy, please contact the ACWMA Recycled Product Central staff – Debra Kaufman at dkaufman@stopwaste.org or Rachel Balsley at rbalsley@stopwaste.org. You may also contact them by calling (510) 614-1699.

3.0 SPECIFICATIONS

3.1 Source Reduction

3.1.1 Certain practices and purchasing strategies can help prevent waste before it is created. Such practices are suggested whenever practicable and cost-effective, but are not meant to reduce workplace safety or compromise product performance. Many are expected to reduce costs incurred by the organization for labor and operations.

Examples include:

- electronic communication instead of printed, double-sided photocopying and printing,
- washable and reusable dishes and utensils,
- rechargeable batteries,

- streamlining and computerizing forms,
- "on-demand" printing of documents and reports as they are needed,
- leasing long-life products when service agreements support maintenance and repair rather than new purchases, such as carpets,
- sharing equipment and occasional use items,
- choosing durable products rather than disposable,
- reducing product weight or thickness when effectiveness is not jeopardized in products such as, but not limited to, paper and plastic liner bags,
- buying in bulk, when storage and operations exist to support it,
- reusing products such as, but not limited to, file folders, storage boxes, office supplies, and furnishings.

3.1.2 Some products can prevent waste by being "remanufactured" (see Definitions) or refurbished into a newly usable product. Examples of some of these common products are toner cartridges, tires, furniture, equipment and automotive parts. When remanufactured, these products are often lower in cost and perform comparably to new products. It is suggested that purchases of these types of products be made whenever practicable, as long as safety, performance and cost standards continue to be met. For more information on purchasing remanufactured toner cartridges, see the ACWMA's Fact Sheet on "Remanufactured Toner Cartridges in Alameda County".

3.1.3 Equipment purchases can also be compatible with source reduction goals and practices when practicable.

Examples include:

- copiers and printers capable of duplexing,
- battery-operated equipment capable of being recharged or using rechargeable batteries,
- dishwashing equipment, when washable and reusable dishes and utensils are practicable,
- bulk storage and operation.

3.1.4 Certain products may have a higher initial purchase cost, but may require less maintenance or long-term costs over the life of the product, so it is important that buyers consider short-term and long-term costs in comparing product alternatives, when feasible. This includes evaluation of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives. Examples of products for which such cost comparisons can indicate significant differences between short- and long-term costs include, but are not limited to, janitorial towels and tissues (including installation and dispensing hardware), parking stops, park benches and tables, office equipment, software and vehicles.

This kind of comparison is sometimes referred to as "ownership costs" or "life cycle costs". "Ownership costs" best describes the purpose here of calculating the cost of owning the product during the purchased use time. "Life cycle costs" is more complex and not specifically required. It more accurately describes an analysis of the impacts of products from initial resource extraction, through production, use, and then through disposition after use. For an example comparing the costs of purchase and use of traditional concrete parking stops with recycled plastic parking stops, see the ACWMA's Fact Sheet on "Recycled Content Transportation Products in Alameda County".

3.1.9 Some electronic equipment has been found to contain toxic materials. In particular, the California Department of Toxic Substances Control ruled in 2001 that cathode ray tubes (CRTs) found in computer monitors and televisions are banned from California landfills to prevent the release of lead and must be

properly reused or recycled. This has created an expected increased cost for safe and efficient collection and recovery of these items. Many large government and commercial purchasers of electronic equipment have responded by successfully requiring, in bid specifications, suppliers of electronic equipment to take back their equipment for reuse or environmentally safe recycling. The Silicon Valley Toxics Coalition website at www.svtc.org has information about their "Clean Computer Campaign," which is working for sustainability, accountability and cleaner production in the high-tech industry. See also "A Guide to Environmentally Preferable Computer Purchasing" prepared by the Northwest Product Stewardship Council Computer Subcommittee.

3.2 Recycled Content Products

3.2.1 Purchasing products that contain recycled content, particularly postconsumer not just preconsumer (see Definitions) recycled content, creates markets for materials that are collected in recycling programs and saves valuable natural resources. It is suggested that products be purchased with the highest postconsumer content practicable. A commonly used and accepted set of minimum standards is the U.S. Environmental Protection Agency's (U.S. EPA) Comprehensive Procurement Guidelines (CPG) that specify ranges of minimum recycled content standards for a growing list of product types (see http://www.epa.gov/epaoswer/non-hw/procure/products.htm). The U.S. EPA Guidelines establish minimum recycled content standards for products in the categories of paper, construction, landscaping, parks and recreation, transportation, vehicles, and nonpaper office products, as well as some other miscellaneous products like pallets, signs and mats. Consider noting on materials printed for distribution that recycled content paper was used.

Fact Sheets on purchasing paper office products, janitorial paper supplies, parks and recreation products, transportation products, and nonpaper office products in Alameda County are available online at ACWMA's website along with many other tools and resources for buying recycled content products.

3.2.2 Copiers and printers bought should be compatible with the use of recycled content products like paper and remanufactured toner cartridges. Purchasing specifications should also require training for equipment operators and maintenance personnel in the appropriate use of recycled products with the equipment. Specifications that require this compatibility will avoid improper uses and allow technicians to properly diagnose paper jams or equipment malfunctions without simply blaming what may be unfamiliar recycled content products.

3.2.3 Re-refined motor oil that is certified by the American Petroleum Institute (API) complies fully with vehicle manufacturers' warranty requirements. For information on the API's Engine Oil Licensing and Certification System for purchasing re-refined lubricating and industrial oils, see http://api-ep.api.org/quality/index.cfm and click on "Engine Oil (Lubricants)". For additional resources such as automotive industry positions, Public Contract Code requirements, and the Department of General Services Contract for purchasing re-refined oil products, refer to the California Integrated Waste Management Board's information at http://www.ciwmb.ca.gov/UsedOil/Rerefined.

3.2.4 When specifying asphalt concrete, aggregate base or portland cement concrete for road construction projects, preferable recycled, reusable or reground materials include, but are not limited to, in-place recycling of asphalt concrete, aggregate base and portland cement concrete; rubberized asphalt concrete; recycled aggregate base; or recycled asphalt concrete. For more information on rubberized asphalt, see the resources available from the Rubberized Asphalt Technology Center at http://www.rubberizedasphalt.org.

3.2.5 When a jurisdiction specifies and purchases recycled content transportation products, it is important

to note that many of these products are approved by the California Department of Transportation (Caltrans). For a sample list of such products and Bay Area distributors, see the ACWMA's Fact Sheet on "Recycled Content Transportation Products in Alameda County".

3.3 Energy and Water Savings

3.3.1 High efficiency space heating systems should be purchased that use natural gas rather than electricity, and have an annual fuel utilization efficiency (AFUE) of 0.86 or greater. High efficiency space cooling equipment should be purchased with an energy efficiency rating (EER) of 11.5 or greater. When applicable, specifications should require that equipment operators and maintenance personnel be trained in the proper enabling and use of energy efficient and sleep mode functions on the equipment.

3.3.2 Incandescent, mercury vapor and T12 fluorescent lamps should be replaced with compact fluorescent lamps, high-intensity discharge (HID) fixtures and low-mercury T8 or T5 fluorescent lamps. The magnetic ballasts used in older fluorescent lighting should be replaced with electronic ballasts. New lighting should be designed to use no more than 85% of the power allowed by Title 24 Energy Code. Title 24 is the State of California's energy efficiency standards for residential and nonresidential buildings (Title 24, Part 6) maintained by the California Energy Commission and described at http://www.energy.ca.gov/title24. Purchasers should require vendors to recycle discarded lighting fixtures and lamps appropriately.

3.3.3 The U.S. EPA's Energy Star certification program certifies that certain products meet energy efficiency standards. Typically, this would include exhaust fans, water heaters, computers, exit signs, water coolers and appliances such as refrigerators, dishwashers and microwave ovens. Further, whenever roofs are replaced, Energy Star-qualifying roof materials should be used. When Energy Star labels are not available, choose energy efficient products that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program (FEMP). FEMP is a program of the Department of Energy that issues a series of Product Energy Efficiency Recommendations that identify recommended efficiency levels for energy-using products. In the Web versions of the Recommendations there are links to complying models for most products and some have interactive "energy cost calculators". See http://www.eere.energy.gov/femp/procurement/. For basic and detailed resources for performing a life-cycle cost analysis to evaluate the cost-effectiveness of investments in energy saving products and projects, see http://www.eere.energy.gov/femp/techassist/life_cycle_cost.html.

3.3.4 Water-saving products include high-performance fixtures such as toilets and conservation devices such as low-flow showerheads, faucet aerators and other water-saving devices. Purchases should support water conservation practices such as retrofitting cooling towers, replacing water-cooled with air-cooled equipment, and upgrading irrigation systems. Purchasers should consider applicable water conservation services and programs of the East Bay Municipal Utility District (EBMUD). EBMUD supplies water and provides wastewater treatment for parts of Alameda and Contra Costa counties. Commercial, industrial and institutional customers in the District's service area may qualify for rebates for installing water-saving fixtures or equipment or for increasing the efficiency of process water uses. See http://www.ebmud.com.

3.4 Green Building - Construction and Renovations

3.4.1 Green Building practices produce durable, useful and comfortable buildings with a minimum of waste allowing the purchase of cost-saving, practical and environmentally sound products. The U.S. Green Building Council has developed a rating system that specifies green building standards for commercial and institutional construction. The "LEEDTM Rating System" is the self-assessing system designed for rating new and existing commercial, institutional, and high-rise residential buildings. Credits are earned for

satisfying defined criteria and standards. Different levels of green building certification are awarded based on the total credits earned. The LEEDTM Green Building Rating System is described at http://www.usgbc.org. All newly constructed and renovated jurisdiction-sponsored buildings should achieve as many pre-requisites and credits as feasible as described in the LEEDTM Rating System, including the LEEDTM Rating System for Existing Buildings Pilot Phase and any subsequent versions adopted. For example, in their adopted Environmentally Preferable Purchasing Policy, the ACWMA is requiring that all their building and renovation projects meet a minimum LEEDTM –Silver rating or an Agency approved equivalent.

The ACWMA has resources and technical assistance available to help jurisdictions incorporate green building methods and techniques. For assistance, information, or copies of the ACWMA Civic Green Building Model Ordinance, Green Building Model Resolution, and the ACWMA Residential Green Building Guidelines and Green Points Rating System contact Wendy Sommer at wsommer@stopwaste.org or (510) 614-1699. Other Green Building and Construction & Demolition resources from the ACWMA can be found at http://www.stopwaste.org/fsbuild.html.

3.5 Landscaping

3.5.1 Bay-Friendly Landscaping or sustainable landscape management practices include, but are not limited to:

- Managing pest problems through prevention and physical, mechanical and biological controls. The jurisdiction may choose to do this by either adopting and implementing an organic pest management policy and practices or adopting and implementing an Integrated Pest Management (IPM) policy using the least toxic pest control as a last resort.
- Grasscycling (leaving the clippings on the lawn) for at least 50% of all mowings. Contact ACWMA for a copy of A Landscaper's Guide to Grasscycling for more detailed information on successful grasscycling techniques.
- Structural pruning as the preferred method of pruning. Heading or shearing is avoided.
- Avoiding synthetic quick release fertilizers which frequently wash through the soil before they are taken up by the plants. Avoiding the use of weed and feed formulations. Fertilizing on an as needed basis, as indicated by a soil analysis. Slow release and/or organic fertilizers are preferred. Slow release fertilizers make nutrients available to the plants when they are needed so their efficiency is increased making them a better value.
- Irrigation scheduling based on weather and soil moisture whenever possible. Drip irrigation is preferred whenever practical. Contact your water district for a water use audit and ask if they have a rebate program for water conserving irrigation equipment. Local web resources are as follows: Alameda County Water District at www.acwd.org, East Bay Municipal Water District at www.ebmud.com, and Zone 7 Water Agency at www.zone7water.com.
- Turf areas that are limited to recreational uses. All other landscaping (such as for views) should be accomplished with low-water plantings.
- Recycling of plant debris by composting and/or mulching. Maintaining a minimum 2-inch layer of mulch under all trees, shrubs and groundcovers and a minimum 3-inch layer in all open areas. Allowing leaf drop to become part of the mulch layer in tree, shrub and groundcover areas is preferred.

Bay Friendly Landscaping is described in much more detail in the ACWMA Bay-Friendly Landscape Guidelines, available in February 2004. Contact Teresa Eade at teade@stopwaste.org or (510) 614-1699 for more information.

3.5.2 Selecting plants that are compatible with the site and microsite, and with the mature size in mind, fosters healthy plants, limits overcrowding and the need for pruning, thereby preventing plant waste. Avoiding hedges and invasive species can also reduce waste. Selecting native plants from the Alameda County region or other Mediterranean plants that are appropriate to the microclimate, is likely to reduce watering needs and ongoing maintenance costs. Native plants also provide food and habitat for beneficial insects, birds and butterflies. Native plants will require irrigation for the first year or two but many can thrive with little or no irrigation once established.

3.5.4 It is suggested that compost be purchased that is produced from feedstock that includes at least 50%, by volume, regionally generated plant debris and/or food scraps and less than 0.5% by volume, physical contaminants. Procuring regionally helps the markets for local plant debris and food scraps collection and composting programs. The compost should be processed in accordance with California Code of Regulations, Title 14, Chapter 3, Article 7, Sections 17868.2-3 to promote pathogen reduction and weed seed kill and minimize heavy metal concentrations.

3.5.5 Recycled content plastic or composite lumber makes a very durable bed or landscape edging. The durability of plastic or composite lumber is greater than wood as they do not rot when in contact with soil. See the ACWMA's "Pointers on Using Recycled-content Plastic Lumber" for information on why, and for what applications, recycled content plastic lumber may best be used. Permeable substitutes for impervious surfaces, such as rosin emulsion paving, are encouraged for walkways, patios, and driveways because of their ability to help control stormwater drainage and retain less heat. More information on pervious paving materials can be found at the Sustainable Building Sourcebook website at http://www.greenbuilder.com/sourcebook/perviousmaterials.html.

3.6 Toxics and Pollution

3.6.1 Much work is being done in testing products and developing specifications for environmentally preferable cleaning products in the Bay Area and across the country. A working group of government purchasers representing, among others, the City of Santa Monica, California; King County and the City of Seattle, Washington; the state of Minnesota; and the Commonwealth of Massachusetts, recently defined criteria for evaluating environmentally preferable cleaning products. See http://www.state.ma.us/osd/enviro/products/cleaning.htm for information from Massachusetts, the first member of the working group to use the consensus criteria and award contracts in April 2003. Other resources from working group members include The Center for a New American Dream at http://www.newdream.org/procure/products/clean.html and Green Seal at http://www.greenseal.org/certproducts.htm#cleaners. See also the Western Pollution Prevention Resources Center's website at http://www.westp2net.org for fact sheets, tools, and other results from the organization's janitorial products pollution prevention project as well as other environmental, health and safety information.

If cleaning or disinfecting products must be used that contain toxic materials, ensure that only the minimum amounts are used and the product is disposed of properly. When applicable, bid specifications should require that suppliers, manufacturers and/or jurisdiction contractors and workers be trained in the proper use of cleaning and disinfecting products for worker health and safety, compliance with regulatory requirements, and cost-efficient product use and disposal. Proposition 65, the list of chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm can be found at http://www.oehha.ca.gov/prop65.html. The Toxics Release Inventory (TRI) is a publicly available U. S. EPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain covered industry groups as well as federal facilities. It includes chemicals that are classified as carcinogens under the requirements of the Occupation Safety and Health Administration

(OSHA). Lists can be obtained from http://www.epa.gov/tri/chemical/index.htm.

3.6.4 Managing pests in landscapes and buildings is based on an organic or Integrated Pest Management (IPM) strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. In IPM, pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment. Particular pesticides to avoid due to high toxicity levels are Diazinon, Chlorpyrifos, Carbaryl, Malathion, and Pyrethroids.

Check with the Bio-Integral Resource Center (www.birc.org) or UC Davis's IPM Program (www.ipm.ucdavis.edu) for up-to-date resources, trainings and information.

3.6.5 Interior paint should contain no more than 50 grams volatile organic compounds (VOCs) per liter (50g/l) for flat paint and 150 grams per liter (150g/l) for non-flat paints, as determined in accordance with U.S. EPA Test Method 24, CFR Title 40, Part 60, Appendix A. Exterior paints should have VOCs concentrations less than 150g/l (US EPA Test Method 24). For routine building maintenance, purchase latex water clean-up paint; carpet with high recycled content and low VOCs; low VOCs carpet adhesives or carpet with integral adhesives; zero-VOCs construction adhesives; furniture with recycled content and using glues, finishes and padding low in VOCs and formaldehyde; and casework specifying materials with no urea formaldehyde.

3.6.6 Purchasing paper, paper products and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives minimizes dioxin formation and other toxic pollutants. Processed chlorine free (PCF) paper is the preferred environmental option (see Definitions). Elemental chlorine free (ECF) processes should include enhanced processes such as extended and oxygen delignification whenever possible (see Definitions). Vendors and successful bidders should supply verification of the paper's chlorine free processing status from either a recognized certifying organization or the pulp and paper manufacturer. If the paper manufacturer buys pulp from another supplier, the pulp's chlorine free status should also be verified. For more discussion of what may constitute verification, see Section 5.2 below. For more discussion on how to identify and purchase environmentally preferable papers, see the ACWMA's Fact Sheets on "Environmentally Preferable Paper Office Products in Alameda County" and "Environmentally Preferable Janitorial Paper Supplies in Alameda County" at www.stopwaste.org.

5.0 IMPLEMENTATION

The implementation section of the Environmentally Preferable Purchasing Model Policy considered by each organization will specify what needs to be done to implement the Policy, by whom, and on what schedule. The policy adopted may be implemented in phases, for example selecting first the products and services of most concern and priority for the jurisdiction such as environmentally preferable cleaning products or energy savings. The implementation suggestions below are based on effective implementation experiences in other jurisdictions in California and across the country.

5.1 It is recommended that the Director of Purchasing, Director of Finance, or other responsible director implement this policy in coordination with other appropriate jurisdiction personnel. This may be done through development of an advisory committee or Green Purchasing Team consisting of members representing purchasers, printing and copying, Information Services, Public Works and construction, and all departments that purchase or specify products or award contracts for services that provide products.

Examples of such a team's responsibilities from other jurisdictions that have successfully used this approach include the following:

- evaluating opportunities for substituting environmentally preferable products,
- designing and implementing programs and processes for increasing the purchase of environmentally preferable products,
- educating managers and staff about the organizaton's Environmentally Preferable Purchasing Policy,
- ensuring that purchasing documents, specifications, and contracting procedures do not contradict each other and do not deter or inhibit the purchase of environmentally preferable products,
- providing information to facilitate the evaluation and purchase of environmentally preferable products, including identifying appropriate products and sources and providing technical assistance, and
- evaluating obstacles to purchasing such products in order to create solutions.

5.2 Successful bidders should be required to certify in writing that the environmental attributes claimed in competitive bids are accurate. Certification should be in the time and manner prescribed by the jurisdiction in purchasing or bid documents for compliance with specifications for environmental attributes. Certification may be accomplished by supplying signed verification from a recognized certifying organization such as U.S. EPA's Energy Star, Green Seal, Scientific Certification Systems, and the Forest Stewardship Council, for example (see Definitions for descriptions of organizations and website addresses). Certification can also be provided by signed verification from the manufacturer, by identifying claim verification on the product, or by completing and submitting a written certification form (see Attachment 1 for sample language for a vendor certification). This requirement for certification should apply to products for which the successful bidder claims such attributes apply to the product, including, but not limited to, recycled content, chlorine free, non-toxic, reduced toxicity, sustainable forestry, and energy-saving features.

5.3 Buyers making the selection from competitive bids should be able to provide a written explanation for product choices that do not meet the environmentally preferable purchasing criteria in the bid document. Such written explanations should be filed with the Director of Finance, Director of Purchasing, or other position responsible for implementing this policy such as a Green Purchasing Team. The explanation should be submitted within a predetermined number of days of selecting the successful bidder and making the product choice (see Attachment 2 for a sample procurement determination form). This provides accountability that the standards in the jurisdiction's Environmentally Preferable Purchasing Policy are taken into account during purchasing decisions. It also helps in the evaluation process by identifying factors that prevent purchase of more environmentally preferable products and services.

5.4 To demonstrate commitment to ensuring that companies providing services to the organization are in compliance with environmental laws and regulations and are taking additional steps to conserve resources, prevent pollution and minimize waste, vendors and contractors wishing to provide services should be encouraged to become certified by the Bay Area Green Business Program. The Bay Area Green Business Program is a partnership of governments and businesses that certifies the environmental performance of government agencies and businesses. Targeted industries include automotive repair, printing, hotels/event centers, restaurants, landscapers, industrial laundries and remodeling, for example. See http://www.greenbiz.abag.ca.gov.

6.0 PROGRAM EVALUATION

As with implementation, the evaluation section of the Environmentally Preferable Purchasing Model Policy

considered by each organization will specify what needs to be done to evaluate and measure the effectiveness of the Policy, by whom, and on what schedule. The following suggestions can help determine the evaluation process.

6.1 The Director of Finance, Director of Purchasing, or other position responsible for implementing this policy such as a Green Purchasing Team, should periodically evaluate the success of implementing the jurisdiction's Environmentally Preferable Purchasing Policy. This may include providing a report annually to the jurisdiction's Board of Supervisors, City Council, or other body. The report could include the results of tracking the purchase of environmentally preferable products compared to the total amount of products purchased. To the extent practicable, the tracking system should build on existing methods to track purchases and include information on the annual volume and dollar amount of environmentally preferable products purchased compared to the total amount of products purchased, within general product categories. However, a simple list of the environmentally preferable products purchased is acceptable. Whenever practicable, vendors should be required to provide reports on their sales of environmentally preferable products to assist the jurisdiction in this tracking.

When possible, annual reports should include an evaluation of the performance, safety, cost, and environmental benefits achieved through use of the environmentally preferable products purchased. This can include case studies or anecdotal information from purchasers or users of the products. Reports should relate progress in meeting the stated objectives of the jurisdiction's Environmentally Preferable Purchasing Policy (see Sections 1.0 and 2.0 of the Model Policy) and be in accordance with the Specifications categories used in the Policy.

Annual reports should include notation of any barriers encountered in procurement of environmentally preferable products, recommendations for resolution, and/or description of assistance needed for overcoming the obstacles. It is suggested that the first annual report be issued within one year following the effective date of the jurisdiction's adoption of their Environmentally Preferable Purchasing Policy.

7.0 DEFINITIONS (as referenced in this Implementation Guidance)

Elemental Chlorine Free (ECF) bleaching processes replace elemental chlorine gas with a chlorine derivative as the bleaching agent. There is a wide range of different bleaching sequences covered under this term. While all ECF processes significantly reduce the amount of dioxins created in the bleaching process, those that include enhanced processes such as extended and oxygen delignification achieve the greatest reduction.

Energy Star means the U.S. EPA's energy efficiency product labeling program described at http://www.energystar.gov.

The **Forest Stewardship Council** is a global organization that certifies responsible, on-the-ground forest management according to rigorous standards developed by a broad variety of stakeholder groups. See http://www.fscus.org/.

Green Seal is an independent, non-profit environmental labeling organization. Green Seal standards for products and services meet the U.S. EPA's criteria for third-party certifiers. The Green Seal is a registered certification mark that may appear only on certified products. See http://www.greenseal.org/ for information on the organization's programs and standards.

Postconsumer Material means a finished material which would normally be disposed of as a solid waste, having reached its intended end-use and completed its life cycle as a consumer item, and does not include

manufacturing or converting wastes.

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

Processed Chlorine Free (PCF) refers to a recycled product in which the recycled content is produced using no chlorine or chlorine derivatives. Any virgin content in the product must also be produced using no chlorine or chlorine derivatives.

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.

Scientific Certification Systems provides independent third-party evaluation and certification of environmental claims in product manufacturing, among other programs. See http://www.scs1.com for information about the organization and its programs in manufacturing, food and agriculture, forestry, fisheries, and electricity.

ATTACHMENT 1
Sample Language For Vendor Certification

The Federal Acquisition Regulation (FAR) uses the language below (or variations) for certifying a variety of environmental claims, from recycled content to ozone-depleting substances.

Example: Language inserted in solicitations that are for, or specify use of recovered materials:

"Recovered Material Certification. The offeror certifies, by signing this offer , that the percentage of recovered materials to be used in the performance of the contract will be at least the amount required by the applicable contract specifications."

Example: Language inserted in certain solicitations and contracts that are for, or specify use of recovered materials:

"Estimate of Percentage of Recovered Material Content for EPA-Designated Products. The contractor, on completion of this contract, shall (1) estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of postconsumer material content; and (2) submit this estimate to ."

Example: Language inserted in certain solicitations and contracts where certification is required:

"The contractor shall execute the following certification:

Certification

I, _____ (name of certifier), am an officer or employee responsible for the performance of this contract and hereby certify that the percentage of recovered material content for EPA-designated products met the applicable

contract specifications.

(Signature of the Officer or Employee)

(Typed name of the Officer or Employee)

(Title)

(Name of Company, Firm or Organization)

(Date)

See Also Examples from Alameda County Source Reduction and Recycling Board's Resourceful Purchasing Manual (pages 86 & 87). It can be found at http://www.stopwaste.org/reports/rpm.pdf.

Recommendation: Modify as an attachment to the jurisdiction's Environmentally Preferable Purchasing Policy and/or prepare different versions applicable to recycled content, energy-efficiency, or other environmental attributes as part of purchasing or bid documents.

ATTACHMENT 2

Sample Procurement Determination Form

Item: _____

_____ This item is required to meet Environmentally Preferable Purchasing (EPP) guidelines as described in [jurisdiction's policy, resolution or legislation identification information].
_____ I have considered the Environmentally Preferable Purchasing guidelines and searched for product or service options that meet them.
_____ Compliance with [jurisdiction's policy identification] was not attainable for this purchase because:
_____ Item is not available within a reasonable period of time.
(Need date: _____ Date available: _____)
_____ Item fails to meet a performance standard in the specifications.
Specifically, _____
_____
_____
_____ Item is not available, or is not available from 2 or more sources.
Market research was performed by calling _____(insert number) vendors, but only
_____ (enter name) was able to supply the item.
_____ Item was only available at an unreasonable price (i.e., EPP item cost more than non-compliant item).
Price of EPP item: _____
Price of non-compliant item: _____
_____ Compliance would conflict with state or federal law requiring that:
_____

_____ _____ _____
Signature of Purchaser Printed Name of Purchaser Date

January 14, 2003

*Note: Please see Environmentally Preferable Purchasing Model Policy for policy language.

Purchasing Resolution

Sample Purchasing Resolution on the Procurement of Environmentally Preferable Products[1]

1.0 SUBJECT (name of jurisdiction) Environmentally Preferable Purchasing Resolution

EFFECTIVE DATE: _____

TABLE OF CONTENTS:

2.0 PURPOSE

The goal of this policy is to encourage and increase the use of environmentally preferable products and services in (jurisdiction). By including environmental considerations in purchasing decisions, (jurisdiction) can promote practices that improve public and worker health, conserve natural resources, and reward environmentally conscious manufacturers, while remaining fiscally responsible.

3.0 DEFINITIONS[2]

For the purpose of this resolution, the following definitions shall apply:

"Available locally" means that one or more businesses within the county/city or immediate surrounding areas are able to provide goods and services in a timely manner, and in sufficient quantity and quality to meet a specific department/agency need.

"Biodegradable" means the ability of a substance, material, or product ingredient to readily decompose by the action of microbes.

"Chlorofluorocarbon, (CFC)" refers to the family of compounds of chlorine, fluorine, and carbon. CFC's contribute to the depletion of the stratospheric ozone layer, and have been used as an ingredient for refrigerants, solvents, and for blowing plastic-foam insulation and packaging. The Montreal Protocol on Substances that Deplete the Ozone Layer calls for complete elimination of CFC production.

"Environmentally preferable products and services" as defined by Presidential Executive Order 13101, means products and services that have a lesser or reduced effect on human health and the environment when compared to competing products and services that serve the same purpose. This applies to raw material acquisition, as well as product manufacturing, distribution, use, maintenance, and disposal.

"Green building practices" means the incorporation of environmental, health, and waste prevention criteria in building design, site-planning and preparation, materials acquisition, construction or remodeling, deconstruction, and waste disposal.

[1] This resolution should be tailored to suit the individual needs and circumstances of your community.

[2] See Starter Kit for additional definitions.

"Integrated pest management" means the use of a combination of pest control methods including improved sanitation, mechanical, physical, biological, or chemical means.

"Post-consumer recycled material" refers to material that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item, and is used as a raw material for new products.

"Practicable" means satisfactory and within reason when considering price, performance, availability, compatibility with specified operation, and public safety.

"Price-preference" means a percentage of increase in price that (jurisdiction) will pay to obtain a designated product or service.

"Processed-chlorine free paper" refers to paper that is manufactured using a percentage of post-consumer recycled paper fiber (that may contain residues of chlorine) and is whitened without adding chlorine or chlorine derivatives.

"Rainforest hardwood/tropical wood" means wood that originates from trees grown in a rainforest.

"Recyclable" refers to a material or product that can be reprocessed, remanufactured, or reused.

4.0 BACKGROUND

Local and state government, combined, purchase more than $1 trillion of goods and services each year. Many of these products contribute to problems in the overall environment, including contamination of the air and water, and depletion of environmental resources. In some instances, products require special waste disposal and reporting procedures which can be cumbersome and expensive. Furthermore, local government employees using these products may be exposed to compounds that are potentially harmful to their health.

(Jurisdiction) has an opportunity to serve as a community model for environmental leadership by incorporating a plan of action that will conserve precious resources such as water, raw materials, and energy, reduce the use of hazardous substances, and potentially improve the environmental quality of the region. By incorporating environmental considerations in public purchasing, (jurisdiction) can reduce its burden on the local and global environment, remove unnecessary hazards from its operations, protect public health, reduce costs and liabilities, and help develop markets for environmentally responsible products.

5.0 GENERAL POLICIES

The Office of (Procurement, County/City Manager, and/or Environment, etc.) shall coordinate the establishment of a special interdepartmental Environmental Purchasing Task Force (hereinafter "the Task Force") including one representative from public administration (County/City Manager, Commissioner, Freeholder, City Council member, etc.), representatives from purchasing, parks and recreation, environmental services, construction/property management, vehicle/equipment maintenance, and other relevant departments/operations to (1) identify opportunities for environmental purchasing initiatives, (2) provide a forum for open discussion by affected personnel, and (3) educate and inform staff about the environmental purchasing program. The Task Force shall meet quarterly following the adoption of this policy.

The Task Force shall designate an Environmental Purchasing Coordinator(s) (hereinafter "the Coordinator) to provide oversight to the Task Force, discuss with individual departments opportunities to increase environmental purchasing where relevant, coordinate outreach/training for staff, report to jurisdiction leadership, and provide general support to maintain the environmental purchasing program.

By (date), the Task Force shall encourage a minimum of one department to perform a pilot or demonstration study of environmentally preferable purchasing. The following departments and operations are potential sites for environmental purchasing demonstrations: vehicle/equipment maintenance, construction/property management, parks and recreation,

janitorial services, public works, pest control, or administration. The Coordinator(s) shall provide technical/logistical assistance to help said departments incorporate environmentally preferable products into their operations. Results of initial pilot studies shall be evaluated and reported to (jurisdiction governing body). As feasible, all departments are encouraged to advance environmental purchasing for their specific operations by initiating pilot studies.

Based on the results of the pilot studies, all departments, offices, and agencies shall use, and require their contractors and consultants to use, environmentally preferable products where practicable no later than (date).[3]

6.0 RESEARCH, PLANNING, AND EDUCATION

The Environmental Purchasing Task Force shall research opportunities to (a) expand the purchase of environmentally preferable products; (b) identify environmentally preferable alternatives; (c) recommend goals, where practicable, to practice alternative processes within (jurisdiction) operations that will reduce the use/disposal of hazardous substances and will promote resource conservation; and (d) collect and maintain up-to-date information regarding manufacturers, vendors, and other sources for locating/ordering environmentally preferable products. The Task Force and/or Coordinator(s) shall provide applicable information to departments.

The Coordinator(s) shall submit annual reports to the (governing entity) by (date) regarding the status of this policy's implementation. This report shall include total purchases of environmentally preferable products by each department, results of designated product evaluations, and the financial status for implementation of this policy including indirect and direct costs/savings.

Relevant departments, offices, and agencies shall assign staff to:

- ensure that contracting procedures do not discriminate against reusable, recycled, or environmentally preferable products without justification;
- evaluate environmentally preferable products to determine the extent to which they may be used by the agency and its contractors;
- review and revise contracting procedures to maximize the specification of designated environmentally preferable products where practicable;
- facilitate data collection on purchases of designated environmentally preferable products by the agency and its contractors and report the data to the Environmentally Preferable Purchasing Coordinator(s) by (date) each year for inclusion in the annual report to the (jurisdiction governing entity).

7.0 SAMPLE SPECIFICATIONS[4]

By (date), to the extent practicable, (jurisdiction) will begin to phase in purchasing specifications that follow U.S. EPA Comprehensive Procurement Guidelines for products containing recycled content. Recovered Materials Advisory Notices (RMAN) shall be used as a reference for determining the recycled content specifications for these products.

By (date), to the extent practicable, all printing and copy paper products shall consist of a minimum of 30% post-consumer recycled fiber.

By (date), all janitorial paper products shall consist of a minimum of 50% post-consumer content.

By (date), a 10% price preference for processed chlorine-free paper shall be applied to (_____ percent) of photocopy-grade and janitorial paper purchases.

[3] Counties can establish percentage goals for phasing in the procurement of environmentally preferable goods (e.g. by ___year, ____% of departments' purchasing will be defined as environmentally preferable).

[4] These specifications represent best environmental purchasing practices and should be adapted to suit your locality and to remain consistent with technological advances.

By (date), (jurisdiction) shall begin returning used toner cartridges for remanufacture and purchase re-manufactured toner cartridges when practicable.

By (date), to the extent practicable, no janitorial cleaning or disinfecting products shall contain ingredients that are identified by United States Environmental Protection Agency or the National Institute for Occupational Safety and Health as carcinogens, mutagens, or teratogens.

By (date), (jurisdiction) shall phase out the use of chlorofluorocarbon containing refrigerants, solvents and other products to accommodate the Montreal Protocol on Substances that Deplete the Ozone Layer, and national requirements.

By (date), all surfactants shall meet EPA standards as "readily biodegradable." Where practicable, no detergents shall contain phosphates.

By (date), (jurisdiction) shall not procure products that originate from rainforest hardwood or tropical wood.

By (date), where practicable, purchased or leased electronic equipment including photocopiers, computers, printers, lighting systems, HVAC, kitchen and laundering appliances, and energy management systems must meet U.S. Environmental Protection Agency (EPA) or U.S. Department of Energy (DOE) energy efficiency standards. Where applicable, the energy efficiency function must remain enabled on all energy-efficient equipment.

By (date), all motor oil shall contain a minimum 25% re-refined base stock. All re-refined oil must be American Petroleum Institute certified.

By (date), all motor vehicles operated by (jurisdiction) shall use recycled propylene glycol antifreeze where practicable.

By (date), paint purchased by (jurisdiction) or its contractors shall contain the minimum amount necessary of volatile organic compounds, and shall contain maximum recycled content where practicable.

By (date), (jurisdiction) shall implement an integrated pest management program for pest control. Any chemicals used to eliminate or deter insect pests and undesirable vegetation shall be the most readily and completely biodegradable product available for the given application, and shall be applied in a manner that is least likely to come into contact with humans and any other animals for which treatment is not intended.

By (date), all construction and renovation projects performed by (jurisdiction) shall incorporate "green" building practices.

By (date), (jurisdiction) shall give preference to products that are produced and are available locally to the extent practicable.

By (date) all departments, offices, and agencies shall ensure that they and their contractors/consultants use double-sided copying. All photocopiers purchased by (jurisdiction) following adoption of this policy are required to be capable of double-sided copying.

By (date), (jurisdiction) shall reduce or eliminate its use of products that contribute to the formation of dioxin and furan compounds.

8.0 PERFORMANCE, PRICE, AND AVAILABILITY

Nothing contained in this policy shall be construed as requiring a department or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

Environmentally Preferable Purchasing:
A Getting Started Guide

Other Resources

Links to State EPP Resources
Center for New American Dream

California - State Agency Buy Recycled Campaign (SABRC)
SABRC is a joint effort between the Department of General Services (DGS) and the California Integrated Waste Management Board, working to implement state law requiring state agencies and the Legislature to purchase products with recycled content. The site includes mandated procurement goals, annual progress reports, a comprehensive recycled products database, and training and conference opportunities.

http://www.ciwmb.ca.gov/BuyRecycled/StateAgency/Default.htm

Delaware - Buy Recycled Guide
Delaware's Recycled Product Procurement Law (SB 395) encourages state agencies to purchase products that are outlined in the U.S. EPA Comprehensive Procurement Guidelines. The site has links to products on state contracts, including the bid specs, that are administered by the Division of Support Services, Contracting Unit.

http://www.state.de.us/purchase/html/recycled_products.html

Massachusetts - Environmentally Preferable Products (EPP) Procurement Program
Contains information about the Commonwealth's efforts to improve environmental purchasing, lists products available through state purchasing contracts, purchasing specifications, annual progress reports, summaries of buy recycled demonstration projects, and upcoming events.

http://www.mass.gov/portal/index.jsp?pageID=osdmodulechunk&L=1&L0=Home&sid=Aosd&b=terminalcontent&f=osd_es_green&csid=Aosd

Michigan - Environmentally Preferred Purchasing
In Michigan, a statewide purchasing partnership between the state Department of Environmental Quality and the Department of Management and Budget intends increase the use of environmentally preferred products in state government. Check out their Environmental Purchasing Bulletins.

http://www.michigan.gov/deq/0,1607,7-135-3585_30068_4174---,00.html

Minnesota - Materials Management Division - Environmentally Responsible Purchasing
The Materials Management Division is committed to helping state agencies purchase environmentally preferable products that contain fewer toxic materials, minimize waste, contain recycled content, conserve energy and water, and contain plant-based materials.

http://www.mmd.admin.state.mn.us/envir.htm

Minnesota Recycled Products Directory
A searchable directory of recycled-content products made in Minnesota.

http://www.moea.state.mn.us/rpdir/index.cfm

Solid Waste Management Coordinating Board - Environmentally Preferable Purchasing Guide
The *Environmentally Preferable Purchasing Guide* provides government purchasers with information on buying environmentally preferable products. Over thirty types of products are addressed in the Guide, including information about environmental and health issues, cost, availability, performance and specifications.

http://www.swmcb.org/EPPG/default.asp

Missouri - Environmentally Preferable Products (EPP) and Services
The state's Office of Administration, Division of Purchasing and Materials Management lists products available on state contract and offers some EPP fact sheets.

http://www.oa.state.mo.us/purch/recypro.html

New Jersey - Purchase Bureau Recycled Products Guide
Includes a list of recycled products available through the state's purchasing contracts and links to other recycled product resources.

http://www.state.nj.us/dep/dshw/recyclenj/

North Carolina - Buying Recycled and Environmentally Preferable Products
Outlines the benefits of buying recycled and other environmentally preferable products and links to related resources.

http://www.p2pays.org/epp/

Ohio - Environmentally Preferable Purchasing
A brief overview of EPP is grouped with links to programs in Ohio and elsewhere.

http://www.epa.state.oh.us/opp/eppmain.html

Vermont - Environmental Procurement
Includes annual reports on the state of Vermont's purchase of recycled products, describes the state's criteria for buying "green," and lists environmentally preferable products available through the state's purchasing contracts.

http://www.anr.state.vt.us/dec/wastediv/csc/envpurch.htm

Wisconsin - VendorNet Recycling Procurement Program
Addresses Wisconsin's statutory purchasing requirements and its "buy recycled only" paper policy.

http://vendornet.state.wi.us/vendornet/recycle/index.asp