

Review on Implementation of San Francisco's Precautionary Purchasing Ordinance, July 2005 – July, 2007

San Francisco Department of the Environment
Presented to the Commission on the Environment, City & County of San Francisco
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I. Introduction

A. Executive Summary

The San Francisco Department of the Environment (SFE) and the Office of Contract Administration (OCA) have taken lead roles in implementing the City's Precautionary Purchasing Ordinance. Since the ordinance was passed in 2005, SFE has worked to institute environmentally preferable specifications for 13 product types in 10 citywide commodities contracts. These specifications aim for reductions in human and aquatic toxicity, reduction in air pollution, increased energy efficiency, increase recycled content, increased recyclability, and many other goals. Some City contracts with established environmental specifications have shown great progress in shaping City purchasing patterns; for example, the City lamps contract has increased City purchases of certain low-mercury lamps from 3% to 100%, and 44% of City vehicles now use biodiesel fuel blends. Newer contracts, such as janitorial cleaners and papers, will require additional time and considerable outreach to succeed. SFE conducted a public prioritization process on its green purchasing efforts, resulting in a scorecard approach for ranking potential environmental impacts of various contracts (Appendix A) and the 2006 list of Targeted Product Categories (Appendix B). SFE and OCA staff processed approximately 53 waiver requests for two product types: Rechargeable batteries and remanufactured toner cartridges. As a result of lessons learned from this waiver process, the SFE green purchasing program will use waivers sparingly in its programs and emphasize vendor cooperation, enhanced monitoring of purchases, and end-user buy-in. SFE has now developed "SF Approved Product Lists" for seven product categories, and has established regular end user group meetings for four of these. SFE staff also sit on the steering committee for the national Responsible Purchasing Network, and have hosted several meetings aimed at increasing interagency cooperation on green purchasing. Future activities include work on at least two new contract areas—computers and food—plus continued work on improving existing specifications and buy-in.

B. Mandate

The Precautionary Purchasing Ordinance (SF Environment Code Chapter 2) establishes goals and procedures for environmentally preferable purchasing (green purchasing) by City departments. This ordinance was groundbreaking in its application of the Precautionary Principle (Environment Code, Chapter 1), and in its mandate that purchasers for the city may *only* buy commodities from "approved alternative product lists" for certain products.

The City & County of San Francisco did not begin its green purchasing efforts with the 2005 Ordinance. The Department of the Environment has been informally inserting environmental specifications into citywide term contracts for over ten years, especially related to recycled content

of products. The 2005 Ordinance succeeded the Environmentally Preferable Purchasing Ordinance (passed in 1999), which established an ambitious, three-year pilot program in the City. The pilot program researched chemical products purchased by the City, prioritized the products based on potential environmental or health risks and sales volume, identified alternative products, and field tested the alternative products with City staff. It concluded that environmentally preferable products were available for 13 of the 14 product types identified, that 83 % of preferable products tested met the majority of City staff performance requirements, and that a citywide green purchasing program was feasible.

The 2005 Ordinance mandates an annual review and report on its implementation not later than 24 months after the effective date of the ordinance (July 17, 2005), with annual reports thereafter in February. This report is submitted in fulfillment of that requirement.

Specifically, Section 203(g) requires:

- (i) an evaluation of the progress in meeting the goals in Section 201;
- (ii) the status and effectiveness of current efforts by City departments to implement this Chapter and additional specific actions, including legislation, needed to effectively implement this Chapter;
- (iii) a summary of the annual reports submitted by City departments pursuant to section 205(b) and a list of waivers granted by the Purchaser during the previous period organized by department.
- (iv) an update on the extent and efficacy of training programs for users and purchasers of Targeted Products;
- (v) a workplan for the next reporting period with specific goals, actions and timelines necessary to implement this Chapter; and
- (vi) The annual report required by this section shall include a recommendation by the Director, after consultation with City Departments and the public, on how to expand this Chapter to City contractors.

C. Report Scope

In its description of program activities, this report covers the time period from the effective date of the ordinance (July 17, 2005) until July 1, 2007. In its review of sales data, this report covers the time period through December 31, 2006 for most commodities. As explained below, most of these data are provided as baselines, for tracking the City's progress in future years.

II. Activities and Accomplishments

1) **Consolidated existing City ordinance requirements** relating to environmentally preferable purchasing as a regulation (05-01-PPO), as required by the Precautionary Purchasing Ordinance (Environment Code Chapter 2). The regulation was adopted on July 18, 2005. All future approved alternative product lists and product specifications will similarly be adopted as regulations. See: http://www.sfenvironment.org/downloads/library/1_regulationsfe0501ppo.pdf

2) **Developed Public Participation Guidelines** as a regulation (05-02-PPO), as required by Environment Code Chapter 2, Section 203(a). Development of these guidelines involved meetings and consultations with the public. The regulation was adopted on September 20, 2005. See:

3) **Identified targeted product categories.** Under the public process required by the ordinance (Section 203(b)), we reviewed City purchases and determined a set of ten Targeted Product Categories (see Appendix B). These are the broad categories of products that the City considers to be its highest priority for implementing environmentally friendly purchasing specifications. For targeted products, approved alternatives product lists can be adopted. In developing the Targeted Products list, we held three public meetings, developed environmental & health criteria for comparing product categories, and developed a score sheet tool.

4) **Developed contracts and specifications.** During the period July 17, 2005 – July 1, 2007, the Green Purchasing Program worked on 13 product types in 9 Citywide commodities contracts, with six of those contracts being awarded. Out of the ten “targeted product categories” identified during a series of public meetings, SFE has worked on six.

SFE worked on the following contracts during this period. A detailed summary of these contracts is presented in the next section.

1. *Batteries
2. *Disposable food service ware
3. *Janitorial cleaning products
4. *Janitorial papers
5. *Lamps and ballasts
6. Multifunction printing devices
7. *Office papers
8. Biodiesel fuels
9. Computer equipment
10. Food
11. Janitorial supplies
12. *Pesticides
13. Toner cartridges for laser printers

*Approved list developed

5) **Regional and National Leadership.** SFE organized three major regional meetings on environmentally preferable purchasing in 2005. One of these was an innovative “world café” interactive event, organized as part of the UN World Environment Day agenda. SFE staff serve on the steering committee of the new Responsible Purchasing Network, a project aimed at leveraging the resources of green purchasing programs nationwide. In addition, SFE staff have made numerous presentations on green purchasing throughout the Bay Area, and led a training on the subject at the Western Regional Pollution Prevention Conference in 2005.

6) Progress in Meeting Goals of the Ordinance

Precautionary Purchasing Ordinance Goals Addressed by San Francisco's Green Purchasing Activities

Goals from Precautionary Purchasing Ordinance, Section 201	Green purchasing projects in progress												
	Batteries	Computer equipment	Food	Lamps and ballasts	Biodiesel fuels	Compostable food service ware	Janitorial cleaning products	Janitorial papers	Janitorial supplies	Multifunction printing devices	Office papers	Pesticides	Toner cartridges
Reduce occupational health hazards for City staff as well as reduce exposure of City residents and visitors to potentially toxic chemicals by purchasing products for use in City operations that do not harm human health or the environment;	x	x	x	x			x					x	
Reduce San Francisco's contribution to global climate change by purchasing products that lead to a reduction in greenhouse gas emissions from Commodities;		x	x	x	x	x	x	x	x	x	x		
Improve the air quality for San Francisco residents and visitors by purchasing vehicles and motorized equipment that minimize emissions of air pollutants;					x		x					x	
Protect the quality of San Francisco's ground and surface waters by eliminating the use of chemicals known to contaminate local water resources through toxicity, bioaccumulation or persistence; and			x				x					x	
Preserve resources locally and globally through purchasing practices that include:													
-Maximizing water and energy efficiency and favoring renewable energy sources;		x	x	x	x			x	x	x	x		
-Maximizing post consumer recycled content and readily recyclable or compostable materials;		x			x	x	x				x		x
-Favoring long-term use through product durability, repairability, and refuse; and	x	x		x					x				x
-Considering life cycle economics of a product that includes manufacture, transportation, use and disposal.	x	x	x	x	x	x		x	x	x	x		x

III. Contracts and Specifications

The summaries on the following pages describe in more detail the environmental objectives, technical specifications, and other details of the citywide commodity contracts pursued by SFE's Green Purchasing Program.

San Francisco Green Purchasing Program Batteries Purchasing Summary

CONTRACTS: Office supplies #96703 11/1/04 -7/25/07 (proposed for extension)
Electr materials/supplies #77520 3/1/04-2/28/08

PURCHASER: Various SFE LEAD: Deanna Simon

ENVIRONMENTAL GOALS:

Resource use reduction through the use of re-usable supplies (ie: rechargeable batteries) to replace the use of disposable supplies (ie: single-use alkaline batteries) wherever possible. Reduction of volume of hazardous waste produced by the City.

PERFORMANCE GOALS:

Ensure high-quality rechargeable batteries are used where appropriate in office and field settings.

SUMMARY & RATIONALE

Technical specifications: City Departments are directed to purchase rechargeable nickel-metal-hydride (Ni-MH) batteries from specified vendors selling batteries made from major manufacturers for appropriate applications (originally mandated by the 2000 Resource Conservation Ordinance – Environment Code, Chapter 5; moved to Regulation #SFE 05-01-PPO.)

Rechargeable batteries should be used for most day-to-day office applications such as in wireless mice/keyboards, telephone headsets, tape recorders and radios, pagers, cameras, adding machines, walkie-talkies, remote controls, and other non-emergency low-power-use devices.

NiMH rechargeable batteries should not be used in emergency equipment (ie: flashlights, radios, emergency medical devices, etc.) or in low-power-use devices in difficult-to-access areas (ie: field monitoring devices or ceiling clocks) because they lose up to 1% of their power capacity per day. They should not be used in cold temperatures applications because they have 20% less power capacity at 32 degrees F. than at room temperature. The power capacity of Ni-MH rechargeable batteries drops sharply at temperatures below freezing.

Advantages of rechargeable Ni-MH batteries include substantial resource conservation and cost savings when batteries are re-used to their capacity. Rechargeable Ni-MH batteries can be reused from 500 to 1000 times.

Disadvantages of rechargeable Ni-MH batteries include operation at lower voltage (1.2 volts, compared to 1.4 volts for single-use alkalines); a steep power-loss curve at the end of each use (compared to the gradual power loss at the end of life of a single-use alkaline); loss of charge up to 1% per day they are not being used or charged, and a decline in performance at cold temperatures.

Bid structure: N/A. Depends on the contract.

Pricing: Battery pricing is subject to discounts applied to the contract from which they are being purchased.

Performance testing: In the case that Ni-MH batteries will not work for an application, single-use alkaline batteries may be purchased.

Multiple awards: N/A

Disclosure Requirements: None

END USER INVOLVEMENT / TRAINING:

SFE held four battery trainings in 2005 for purchasers and selected groups of city staff to facilitate the use of Ni-MH rechargeable batteries.

COST:

Substantial cost savings can be realized through the use of rechargeable Ni-MH batteries. For example, on the office supplies contract rechargeable Ni-MH batteries cost 1.7x the cost of single-use alkalines but can be re-used hundreds of times. After the second use, each re-use saves the cost of one battery. Chargers cost between \$25 and \$25 – amortized over the lifetime of a set of rechargeable batteries this is a nominal cost.

Substantial cost savings can also be realized in reduced battery recycling fees.

FUTURE OPPORTUNITIES & OBSTACLES

Market availability / Additional environmental criteria:

SFE monitors the market for the availability of better rechargeable batteries. Though Ni-MH rechargeable have limitations that restrict their use to daily office applications and some field applications, the recent re-emergence of rechargeable alkaline batteries in the marketplace has promise for future use. Because rechargeable alkalines do not lose charge, operate at a higher voltage, and perform better at lower temperatures, these may be an option for use in the future as they become more widely available and as performance data emerges.



San Francisco Green Purchasing Program Disposable Food Containers and Utensils Contract Summary

CONTRACTS: Food containers & utensils #88402 5/1/07-4/30/10
PURCHASER: John Danaher SFE LEAD: Julie Bryant

ENVIRONMENTAL GOALS:

San Francisco Environment Code, Chapter 16 prohibits the use of polystyrene foam disposable food containers and requires the use of compostable or recyclable replacements. Additionally, the Precautionary Purchasing Ordinance has listed disposable food service items as a Tier 1 targeted product category indicating it is of high concern. Non-recyclable, non-compostable disposable food service products such as items made of polystyrene foam are common environmental pollutants, constitute a significant portion of the litter in San Francisco, are a threat to marine life, and are known hazardous substances and suspected carcinogens. The use of recyclable and compostable food service products can also facilitate participation in San Francisco's recycling and food scrap composting collection programs.

PERFORMANCE GOALS:

To obtain environmentally preferable products (EPP) proven effective by City of San Francisco or other government agencies.

SUMMARY & RATIONALE

Technical specifications: SF Environment and the Office of Contract Administration worked together to develop a contract that met departmental needs and maximized recyclable and compostable food service ware. Because many compostable plastic products are not clearly labeled and are difficult to distinguish from traditional plastics, it was determined that the contract would have more paper or sugarcane bagasse products than compostable plastic. Paper and bagasse materials are made of natural fibers and are clearly distinguished as compostable in San Francisco's composting program. Other specifications included ensuring that compostable plastic products meet ASTM standards 6400 and 6868 for compostability, that products are clearly labeled as compostable, and that no polystyrene foam be included in the contract.

Bid structure. SFE and OCA staff separated the food containers and utensils into two categories: (1) Standard items – products commonly available to food service distributors. These items included mostly paper products and to a lesser extent wood, aluminum foil, and plastic. All standard wood and paper items are acceptable in San Francisco's food composting program. Foil and some plastics are recyclable; (2) Compostable items – products made of non-traditional materials including sugarcane bagasse and poly lactic acid from corn-based resin. All of the items in this section of the contract are compostable. Examples of these items include compostable plastic utensils and bagasse clamshells.

Performance testing: Products meeting the technical specifications were tested by Laguna Honda Hospital (one of the two major purchasers off the previous contract) in their cafeteria for performance including heat tolerance, suitability with hospital operations, and ability to contain liquids over long periods of time. Once the testing was complete, the Office of Contract Administration and the Department of the Environment adjusted technical specifications based on recommendations from Nutrition Services staff.

END USER INVOLVEMENT/TRAINING:

SFE met with City end users from San Francisco General Hospital and Laguna Honda Hospital Nutrition Services to discuss changes to the purchasing processes and ways to capture these new products in the hospital's composting and recycling programs. Both San Francisco General and Laguna Honda are in the process of making physical changes to their buildings to accommodate additional carts and compactors for the new composting programs.

VENDOR INVOLVEMENT/TRAINING:

Upon award of the contract SF Environment met with both vendors to educate them on the Food Service Waste Reduction Ordinance, which City departments purchase food service ware, and to develop a working relationship that would ensure that all departments are purchasing only compostable recyclable food service ware.

COST:

Buying food containers and utensils off the current contract are approximately 90% more expensive than items purchased on the previous contract. We attribute this significant increase in costs to the low cost of manufacturing and transporting polystyrene foam. However, the external costs of polystyrene to the environment and human health far outweigh the costs of purchasing recyclable or compostable food service ware.

FUTURE OPPORTUNITIES & OBSTACLES

Currently there are no compostable utensils or hot cup lids that meet ASTM standards 6400 or 6868 for compostability and that can tolerate heat of more than 120 degrees. With the rapid development of the new compostable plastics market, it is expected that a suitable product will be available at a reasonable price soon. Once these products become available, OCA and SF Environment will amend the contract to include these items. These utensils will make it easier for Departments to participate in San Francisco's food scrap composting program.



San Francisco Green Purchasing Program Janitorial Chemicals, Soaps and Cleaners Contract Summary

CONTRACTS: Janitorial chemicals, soaps & cleaners, 6/1/07-5/31/10
#83436

PURCHASER: Stuart Keeler

SFE LEAD: Chris Geiger

ENVIRONMENTAL/WORKER HEALTH GOALS:

Where practicable, shift to janitorial products that contain ingredients posing less hazard to the user, building occupants, and the environment in general. Specific factors addressed include: Acute toxicity, carcinogens & reproductive toxin content, eye and skin irritation, skin sensitization, combustibility, volatile organic compound content, aquatic toxicity, aquatic biodegradability, eutrophication potential, packaging, availability as a concentrate, use of fragrances, use of specific prohibited ingredients, availability of training, use of animal testing in development, labeling, skin absorption potential, and use of aerosol containers (see technical specifications below). Using EP products can reduce exposure to hazardous janitorial chemicals by about 20% (EPP Pilot Project estimate)

PERFORMANCE GOALS:

Obtain environmentally preferable products (EPP) proven effective by City of San Francisco or other government agencies.

SUMMARY & RATIONALE

Technical specifications: Specifications were originally developed by the SF EPP Pilot Project through a stakeholder process; see <http://www.sfenvironment.com/aboutus/innovative/epp/purchasing.htm>. Original point-based criteria were changed to pass/fail criteria to better harmonize with Green Seal GS-37 certifications. Criteria 1-16 now correspond to Green Seal GS-37 criteria (March 2005), City of Santa Monica, CA, and Commonwealth of Massachusetts; criteria 17-19 are unique to San Francisco. Products screened were drawn from the SF EPP Pilot Project results, along with some additional products requested by City departments. Criteria are detailed in *Technical Specifications for Procurement of Janitorial Cleaners*, March 25, 2005. http://www.sfenvironment.com/aboutus/innovative/epp/specs_janchem05.pdf

Bid structure. SFE and OCA staff separated the janitorial products into three categories: (1) EPP-Only for those work areas where a number of tested EPP are known to exist; (2) Green Seal Certified for those instances where vendors have obtained GS-37 certificates, but the City has not yet tested the product; and (3) Traditional janitorial products. SFE requested specific EPP products for categories that had an abundance of complying products (general purpose cleaners, basin tub & tile cleaners, window cleaners, general purpose cleaners/degreasers). *City staff will be required to only purchase EP products in these four product categories.*

Performance testing: Products meeting the technical specifications were screened for the availability of performance reports from San Francisco's EPP Pilot Project, City of Seattle, WA (2003), Massachusetts, Santa Monica, CA (2004), and Ventura Co, CA. GS-37 Certification by Green Seal was also accepted as a positive performance report.

Multiple awards: Multiple awards were permitted on this contract (i.e., one vendor per item, instead of one vendor for the entire contract). It was determined that no single vendor carried a broad enough range of both EPP and traditional products.

Disclosure Requirements: Vendors must disclose the ingredients used in EPP, either to the City or to an independent third party certifier (e.g., Green Seal). This approach is required by the Precautionary Principle Policy of the San Francisco Environment Code (Chapter 1).

END USER INVOLVEMENT/TRAINING:

SFE met with City end users nine times in 2004 - 2006; six meetings were at department level and three meetings was combined. . Training events are planned for early 2007.

COST:

A full analysis of costs is pending. Buying EPP is expected to cost roughly the same as traditional products for most product categories. Awarding the contract to multiple vendors may lower costs through competition, or increase costs through lower volume.

FUTURE OPPORTUNITIES & OBSTACLES

Training and outreach: Training and vendor support are important factors contributing to a successful transition to environmentally preferable janitorial products.

Expanding to other product subcategories: SFE will work with City departments to evaluate additional EPP and Green Seal Certified products, so that the next contract renewal may contain more preferable items (e.g., carpet cleaners, floor finish and other floor care products).

San Francisco Green Purchasing Program

Janitorial Paper Contract Summary

CONTRACT: Janitorial Paper Products #83021

5/1/07-4/30/09

PURCHASER: Stuart Keeler

SFE LEAD: Julia Chang

ENVIRONMENTAL GOALS:

(1) Obtain the highest content of post-consumer recycled material, (2) reduce the use of chlorine and chlorine derivatives in paper manufacturing, and (3) require product packaging to be reusable, recyclable, made with recycled content, and labeled as such.

PERFORMANCE GOALS:

Obtain environmentally preferable products (EPP) proven effective by City of San Francisco or other government agencies, including texture, strength, and compatibility with janitorial paper dispensers.

SUMMARY & RATIONALE

Technical specifications: Minimum postconsumer waste contents were based on the Environmental Protection Agency's (EPA) Comprehensive Procurement Guidelines, see <http://www.epa.gov/epaoswer/non-hw/procure/about.htm>. The minimum postconsumer waste contents required were 20% for bathroom tissue and 40% for paper towels. The specifications also required no chlorine- or chlorine derivative-based whitening technologies, in keeping with recommendations by Conservatree (<http://conservatree.org/>), a nonprofit information source for environmental papers. Whitening process was established through certification by Green Seal (GS-09), by the Chlorine-Free Products Association, or by manufacturer verification of chlorine-free processes for specific products.

Bid structure: Most items on the bid sheet were split into 2 (two) sections –section A specified the minimum level of post-consumer content required by CCSF and section B specified a higher level of post-consumer content than is commonly found in the market. By structuring the bid in this way, vendors could bid on one or both of the sections, and CCSF could evaluate the price difference for products with higher levels of recycled content.

Performance testing: Most of the products meeting the technical specifications were not screened beforehand for performance. However, most of the vendors provided bids for janitorial paper brands with wide distribution.

Multiple awards: Multiple awards were permitted on this contract (i.e., one vendor per item, instead of one vendor for the entire contract). Bids were awarded to Clean Source, H&L International, Santora Sales, and Waxie's Enterprises.

Disclosure Requirements: Vendors must provide a letter from the mill or manufacturer to qualify and state the quality and percentage of post-consumer recycled materials in each product, when requested by the City.

END USER INVOLVEMENT/TRAINING:

SFE regularly meets with City Department Recycling Coordinators and City department janitorial staff who can provide feedback on the performance of janitorial paper.

COST:

For some products, the janitorial paper made with recycled content was more costly than janitorial paper made of virgin materials. This varied depending on product type.

FUTURE OPPORTUNITIES & OBSTACLES***Market availability/cost competitiveness:***

SFE will monitor the market for the availability and price of janitorial papers that are made with higher percentages of post-consumer recycled materials, and that are chlorine-free. If the cost is within a reasonable price range (within 15%), SFE will recommend that City departments buy only these most preferred products.

Additional environmental criteria:

There were other important environmental criteria that were not included in the specifications for this contract. These include harvesting from sustainably-managed forests, requesting paper made from tree-free alternative sources, and issues of energy used in transport. SFE will explore the feasibility of including these criteria in the next contract, and accepting environmental certifications from organizations such as Environmental Choice and Forest Stewardship Council.

Reduction in usage:

The types of janitorial papers can significantly affect the amount of janitorial papers used. For example, studies have found that multi-fold paper towels lead to greater consumption per use than roll paper towels. Additionally, coreless toilet paper rolls eliminate the cardboard core that is many times trashed at the end of its life. Also, electric hand driers eliminate the need for paper towels. SFE is working with end-users to change to these types of janitorial papers that conserve resources and save money.

San Francisco Green Purchasing Program

Lamps and Ballasts Contract Summary

CONTRACTS: Lamps/bulbs and ballasts #77405

March 23, 2007 to March 22, 2007
(extended to 3/22/08)

PURCHASER: Hermilo Rodis

SFE LEAD: Deanna Simon

ENVIRONMENTAL GOALS:

High-efficiency (energy savings), long-life (waste prevention), mercury- and lead-content reduction (pollution prevention). Mandates include the Resource Efficiency Requirements (Environment Code Chapt.7), Resource Conservation Ordinance (Chapt. 5), and Precautionary Purchasing Ordinance (Chapt. 2).

PERFORMANCE GOALS:

Ensure high-quality lamps are provided (minimum technical/performance specs); encourage purchase of energy-efficient models (e.g., Watt-Miser); follow federal minimum efficacy (lumens/watt) standards; consider minimum lamp-life ratings for some bulbs

SUMMARY & RATIONALE

Technical specifications: The current lamps and ballasts contract directs vendors to supply only high-efficiency ballasts, low-mercury and lead-free lamps, and longer-life lamps whenever available. Lamps excluded from the contract (though price discounts apply to any lamp sold to CCSF made by the manufacturer represented by the vendor on the bid documents) consist of compact fluorescents with greater than 5 mg of mercury and not Energy Star certified; linear fluorescent, HID, and metal halide lamps not labeled Ecolux, Ecologic or ALTO (whenever available); 4-foot linear T8 lamps with a lamp life less than 24,000 hours using a rapid-start ballast on 3-hour cycles; incandescent A-line lamps not bearing an energy-efficient label (e.g., Watt-Miser); and incandescent exit sign lamps. In accordance with the Resource Efficiency Requirements in the San Francisco Environment Code, ballasts excluded from the contract consist of magnetic ballasts linear fluorescent lamps, and electronic ballasts for T12 or T10 lamps. All exclusions were sanctioned by key end-users and the San Francisco Public Utilities Commission.

Bid structure: Qualified vendors are required to offer lamps in all thirteen NEMA-recognized lamp categories. This ensured our vendors were full service vendors, not specialty product vendors. To ensure vendors represented reputable full-service companies, vendors were asked to supply lamps made by the same manufacturer in 8 of the 9 most common categories of lamp types.

Pricing: Vendors were asked to submit price discounts for both “regular” lamps/ballast items and “excluded” lamp/ballast items (those that are typically ‘excluded’ from discounts in their catalog and are marked with a “%” in price lists to indicate their excluded status).

Performance testing: All lamps must meet or exceed current ANSI standards, be UL listed, and be in compliance with the US Energy Policy Act of 1992. All lamps and ballasts must be manufactured in accordance with NEMA standards.

Multiple awards: The contract was awarded to two vendors representing two different lamps manufacturers to provide end-users with more flexibility to buy low-mercury/ high-efficiency lamps made by manufacturers excelling in these areas.

Disclosure Requirements: Vendors must disclose mercury content, plus presence of lead in solder and glass in quarterly reports.

END USER INVOLVEMENT / TRAINING:

SFE held several end-user meetings to construct the bid and contract specifications. SFE continues to meet with these lamps end-users to identify goals and improvements for the next lamps contract based on past experience and emerging technology.

COST:

For some products there is no cost increase. For example, purchasing longer life lamps costs the same per illumination hour, plus savings are incurred when lamps need to be installed and recycled less frequently. Some lower mercury lamps are slightly more expensive to purchase. Some higher efficiency lamps such as compact fluorescent lamps are initially more expensive to purchase, but savings from their longer life (8 to 10 times longer) and higher efficiency (4 times more efficient) are substantial and lead to a very quick pay-back period.

FUTURE OPPORTUNITIES & OBSTACLES

Market availability / Additional environmental criteria:

SFE monitors the market for the availability of lamps with higher efficiency and lower mercury. In fact, the three major lamps manufacturers have announced their upcoming compliance with NEMA's voluntary CFL standard of less than 5 mg of mercury; all CFLs manufactured by GE, Sylvania, and Philips starting in April 2007 will contain less than 5mg of mercury. In addition, since the award of the current contract in March 2005, all three major lamps manufacturers are reducing the amount of mercury in their 4-foot T8 lamps. As such, we will be able to place a mercury cap on these lamps in the next contract.



Multi Function Device Contract Summary

CONTRACTS: CopySmart Program #96101

7/1/06-6/30/09

PURCHASER: Bill Jones

SFE LEAD: Julie Bryant

ENVIRONMENTAL GOALS:

Multi Function Devices (MFDs) are machines that have the capability to copy, print, scan, email and fax. With the installation of an MFDs and removal of other stand alone machines, City departments minimize use of parts such as toner cartridges, save energy, minimize repair time, and save paper as these machines can copy and print paper on two sides of a piece of paper. The City's Resource Conservation Ordinance, Chapter 5, section 506 of the Environment Code, requires City departments to print and copy on both sides of the paper. Since most stand-alone machines do not have the capability to double-side documents automatically, City departments were not able to comply with this piece of legislation in the past. However, with the new MFD contract in place, SF Environment has been able to successfully work with vendors to ensure that departments meet the double sided mandate by requiring the defaults be set print and copy double-sided upon installation.

PERFORMANCE GOALS:

To obtain environmentally preferable products (EPP) proven effective by City of San Francisco or other government agencies.

SUMMARY & RATIONALE

SF Environment worked directly with the vendors - Xerox, Konica-Minolta and Ricoh - upon award of the contract to ensure that all MFDs were installed with the defaults set print and copy double-sided upon installation.

END USER INVOLVEMENT/TRAINING:

SFE met regularly with all three vendors to ensure that the MFDs be installed with defaults set to print and copy double-sided. Additionally, all vendors provided training on their machines upon installation. We worked closely with these trainers to make sure that all end users be trained on how to use the double-sided copy and print default feature.

COST:

Using exclusively MFD instead of other stand-alone devices will save money for City Departments. SF Environment was the first City Department to use these devices. In an average year SF Environment sends and receives 8,000 pages of Faxes, prints 135,000 pages, copies 92,000 pages and scans 5,000 pages into PDF formatted documents. During the first three years of using MFDs, SF Environment saved about \$3,000 per year on operating costs and about 30% on paper costs.

FUTURE OPPORTUNITIES & OBSTACLES

Currently most departments are not fully using the capabilities of the MFD in their offices. For example, many offices are still using their stand-alone printers to print and the MFDs to copy. In the future, SF Environment hopes to work with Information Technology personnel to network workstations to the MFDs in order for users to use the MFDs to their maximum potential and maximize all of the environmental features.

San Francisco Green Purchasing Program

Office Paper Contract Summary

CONTRACT: Copier and reprographic paper #96730 9/21/04 – 8/31/07

PURCHASER: Stuart Keeler

SFE LEAD: Julia Chang

ENVIRONMENTAL GOALS:

(1) Obtain the highest content of post-consumer recycled material, (2) Minimize use of chlorine and chlorine derivatives in paper manufacturing, and (3) require product packaging to be reusable, recyclable, made with recycled content, and labeled as such.

PERFORMANCE GOALS:

Obtain environmentally preferable products (EPP) proven effective by City of San Francisco or other government agencies, including compatibility with printers and copy machines and acceptable level of brightness.

SUMMARY & RATIONALE

Technical specifications: Specifications were based on the Environmental Protection Agency's (EPA) Comprehensive Procurement Guidelines, see <http://www.epa.gov/epaoswer/non-hw/procure/about.htm>, as well as consultation by Conservatree (<http://conservatree.org/>), a nonprofit information source for environmental papers.

Bid structure. SFE and OCA staff separated the office paper bid sheet by the percentage of post-consumer content: (1) 30% post-consumer content, (2) 50% post-consumer content, and (3) 100% post-consumer content and processed-chlorine free. These are the three levels of post-consumer recycled content most commonly found in the market. No paper products in the contract contain less than 30% post-consumer recycled content.

Performance testing: Most of the products meeting the technical specifications were not screened beforehand for performance. The 100% post-consumer recycled content paper was tested by the Reprographics Department for compatibility with their copiers. They found that 100% post-consumer recycled content caused paper jams with their high-speed copiers. However, they only tested one brand of 100% post-consumer recycled paper, and Reprographic Department copiers are not representative of lower-speed copiers used in most City departments. Those departments that have purchased 100% post-consumer recycled content, such as SF Environment, have not experienced performance problems.

Multiple awards: Multiple awards were permitted on this contract (i.e., one vendor per item, instead of one vendor for the entire contract). Bids were awarded to American Products Distributors, Corporate Express, Falcon Industrial Distributors, Give Something Back, Santora Sales, and Mitchell Snow Inc.

Disclosure Requirements: Vendors must provide a letter from the mill or manufacturer to qualify and state the quality and percentage of post-consumer recycled materials in each product, when requested by the City.

END USER INVOLVEMENT/TRAINING:

SFE regularly meets with City Department Recycling Coordinators who can provide feedback on the performance of office paper.

COST:

Buying 30% post-consumer recycled content paper costs roughly the same as virgin paper. However, costs for paper made of 50% or 100% post-consumer recycled content were prohibitively higher (more than 15%). Awarding the contract to multiple vendors may lower costs through competition, or increase costs through lower volume. The cost for paper made without chlorine bleach or chlorine bleach derivatives was prohibitively higher.

FUTURE OPPORTUNITIES & OBSTACLES***Market availability/cost competitiveness:***

SFE will monitor the market for the availability and price of paper made with 100% post-consumer recycled materials, and is chlorine-free. If the cost is within a reasonable price range (within 15%), SFE will recommend that City departments buy only these most preferred products.

Additional environmental criteria:

There were other important environmental criteria that were not included in the specifications for this contract. These include harvesting from sustainably-managed forests and requesting paper made from tree-free alternative sources. SFE will explore the feasibility of including these criteria in the next contract, and accepting environmental certifications from organizations such as Environmental Choice, GreenSeal, and Forest Stewardship Council.

Recycled content labeling requirements:

The Resource Conservation Ordinance (Chapter 5 of Environment Code) requires that "All pre-printed materials intended for distribution that are purchased or produced in quantities greater than 50 sheets after the effective date of this Chapter must include a recycled content logo and the percentage of post-consumer material in the paper." For the most part, this requirement is not being met. SFE will work with the Reprographics Department, who produces most of the City's pre-printed materials, to include this labeling and to purchase paper with the maximum percentage of recycled content.

Other Contracts and Specifications Activities:

Biodiesel purchases. Continued previous efforts to promote the use of biodiesel fuels in City vehicles, in keeping with Executive Directive 06-02. Status: Contract in place, ongoing.

Computer contract. Began meetings with the Office of Contract Administration, Committee on Information Technology (COIT), and City information technology managers regarding the upcoming citywide computers contract. At approximately \$22 million/year, this is one of the largest City contracts. Began reviewing existing specifications for computer equipment for possible inclusion in the request for proposals, or for development of approved lists. Status: In progress – awaiting OCA action.

Food contracts and policy. Reviewed City government purchases of food, met monthly with the Interdepartmental Sustainable and Healthy Foods Working Group, met with major City food purchasers, and began development of a citywide sustainable and healthy foods ordinance. Status: In progress.

Janitorial supplies. Researched environmental impacts and relative costs of installing new generation hand driers in City restrooms, instead of paper towels. Inserted novel hand drier into janitorial supply contract, and began outreach/education and pilot testing with City departments. Status: Contract awarded, ongoing outreach.

Pesticides. Continued established program of end user meetings, product hazard review and performance evaluations, development of approved lists for pesticides used on City properties, and processing waiver requests (overlap with Integrated Pest Management Ordinance requirements, Environment Code Chapter 3). Status: Purchases take place through departmental contracts; ongoing program.

Toner cartridges - Office supplies contract. Developed new specifications for toner cartridges for the Office Supplies contract (currently #96703). The new contract will require electronic reporting of sales data, the ability to block products, greatly expanded specifications for remanufactured toner cartridges, and specifications for rechargeable batteries. Status: In progress – awaiting OCA action.

IV. Summary of Purchases of Environmentally Preferable Products by City Departments

Until this month (July, 2007) there had not yet been any official approved product lists, partially due to delays in awarding several pending citywide contracts (janitorial supplies, janitorial papers, and janitorial cleaners). Therefore, it was generally not possible to report on approved product purchasing trends by City departments. However, we did obtain baseline sales data from City vendors for janitorial cleaners, janitorial papers, batteries, toner cartridges, and lamps. These data give us a way to chart future progress. To evaluate the data, we compared the dollars spent on environmentally preferable products to the total dollars spent by City departments in that product category. Environmentally preferable products were defined according to the specifications used in the existing SF Approved Product list.

Janitorial Cleaners: <1% of total sales in 2006 were green products

We reviewed sales reports for 2006 from vendors Waxie, Santora Sales, Champion, and MM Sales. These companies were awarded contracts under contract #83434, which expired on June 1, 2007. Note that environmental specifications were not included in this contract when it was awarded in 1997. Only products that met San Francisco's 2005 Janitorial Cleaners Specifications were considered "green" in this calculation, which means that a few "borderline green" products were not considered here.

Lamps: Long life T8 lamp purchases increased from 3% to 69%; low mercury T8 lamps increased from 3% to 100%

Our current lamps and ballast contract focuses on high efficiency, long life, low mercury lamps and ballasts. We have compared baseline data from before the EPP Lamps and Ballasts contract (EPP L&B) (July 1, 2001 through June 30, 2002) to sales data from the same vendor after the EPP L&B contract was issued with environmental specifications to supplement performance specifications (October 2005 through October 2006). Below are the improvements we have seen.

Efficiency: In an effort to increase energy efficiency the lamps contract encourages the use high efficiency T8 lamps over the use of lower efficiency T12 lamps. Contract specifications eliminated T12 ballasts for purchase; no T12 ballasts were purchased in 2005/2006. As new ballasts are needed we will see the gradual replacement of T12 lamps with T8 lamps. In fact, though T8 lamps comprised only 20% of total lamp sales in 2001/2002, T8 lamps comprised 38% of total lamp sales in 2005/2006, the first year the EPP contract was in place.

Long Life: Additionally, the EPP L&B requires only long-life 4-foot T8 lamps (24,000+ hours). Sales of long-life lamps rose from 3% of the popular 4-ft T8 lamps purchased in 2001/2002 to 69% in 2005/2006. Some departments are still purchasing the shorter life lamps (20,000 hours). In 2005/2006 the departments purchasing more than 500 short-life lamps when a long-life version was available were SF MUNI, SF Fire Department, and the SF Real Estate Department.

Mercury Reduction: Mercury reduction was achieved by requiring departments to purchase TCLP compliant lamps whenever available. These lamps pass the test for toxic materials leaching and have less mercury (1-10 mg of mercury for GE lamps) than their non-TCLP compliant counterparts (typically 10-60 mg for GE lamps). Only 3% of the popular 32watt 4-ft T8 lamps purchased in 2001/2002 were TCLP compliant, increasing to 100% TCLP compliance in 2005/2006 after the EPP L&B contract was in place. T12 TCLP compliant lamps rose from 0% to 32%, and TCLP compliant HPS (high pressure sodium) lamps rose from 0% to 37% for lamps available in a TCLP-compliant version. The biggest purchaser non-TCLP compliant T12 lamps in 2005/2006 was the SF Airport. The largest purchaser of non-TCLP compliant HPS lamps when a TCLP compliant option was available was the Recreation and Parks Department.

Increase in Environmentally Preferable Lamps Purchases

	Before EPP %	With EPP %
Long life T8*	3%	69%
T8* low mercury	3%	100%
T12 low mercury	0%	32%
HPS low mercury	0%	37%

* 32w 4'T8

Batteries: Approximately 74% of sales in 2006 were green products

The major vendor of common batteries (AAA, AA, C, D, 9v) for San Francisco offices is Office Depot. SFE and OCA blocked the sales of non-rechargeable batteries for the first two years of the contract, and required waivers to remove the block on a purchase-by-purchase basis. While this appeared effective in encouraging the purchase of rechargeable batteries, it is unknown how many non-rechargeables were purchased off-contract. Therefore, 74% is almost certainly an overstatement.

Janitorial papers: Approximately 55% of 2005 purchases were green products.

Janitorial papers include bathroom tissue, facial tissue, paper towels, and toilet seat covers. Based on 2005 vendor usage reports, City departments purchased approximately \$1,076,000 of janitorial paper from the City's blanket contract. Of this amount 45% of the janitorial paper was made of virgin fiber. Approximately 55% of the janitorial paper was made of at least 20 percent post-consumer recycled content. None of these purchases included chlorine-free whitening.

Office papers: Over 90% of 2005 sales were green products.

Based on 2005 vendor usage reports, City departments purchased approximately \$854,000 of office paper from the City's blanket contract. All of the paper on the blanket contract is made of a minimum 30 percent post-consumer recycled content. We were not able to collect information on the type of paper purchased by the Reprographics Department, the City's in-house copy and production department. For special printing needs, some of the paper Reprographics purchases is not made of recycled content. The amount of processed-chlorine-free paper purchased was negligible – between 0.3 – 1%.

Biodiesel: 44% of diesel vehicles fueled by B20.

In the City's overall effort to achieve its Climate Goals, and in an effort to protect public health by reducing diesel particulate matter, San Francisco City Departments that use diesel fuel in vehicles and equipment are directed by Executive Directive 06-02 to switch to B20, a blend of 80% petroleum diesel and 20% biodiesel, in 2007. As of July 1, 2007, 44% of the CCSF's diesel vehicles and equipment were fueled with a biodiesel blend of B20. This includes 40 revenue MUNI buses (25 diesel buses and 15 diesel-hybrid buses) for a total of 662 vehicles citywide. When ED 06-02 is fully implemented, the City's entire diesel fleet of roughly 1,514 vehicles will fuel with a biodiesel blend of B20.

V. Waivers

The Ordinance gives OCA the power to grant waivers for purchasing items not on an approved list. OCA and SFE instituted a trial program on the citywide office supplies contract that required waivers for city staff wishing to purchase A) non-rechargeable batteries or B) non-remanufactured toner cartridges for computer printers. Administering such waivers was particularly simple on the office supplies contract because the vendor maintains an online catalog, and was able to automatically block the sale of certain items. In 2005-2006, 28 waivers for non-chargeable batteries were processed, and 25 waivers for toner cartridges. We assume that this represents the tip of the iceberg, due to amount of off-contract purchasing taking place.

The waiver system has two objectives: Hold city departments accountable for their purchases, and obtain important information about obstacles to implementing particular purchasing restrictions. Within the context of the office supplies contract, the waivers seemed to fulfill these objectives. For example, SFE staff quickly obtained information on poorly performing models of toner cartridges, or on devices that are ill-suited to the use of rechargeable batteries.

However, even with automatic waiver systems in place, considerable staff time was required to process waivers, and considerable annoyance was expressed by departments over the system. In consultation with OCA, SFE concluded that the environmental gains to be made with the waivers were not worth the administration time required and the loss of buy-in by client departments. Departments could still be held accountable, in a more streamlined fashion, by reviewing quarterly sales reports submitted by the vendor. Information on obstacles to implementing purchasing restrictions could be easily obtained from the various end user groups already established by SFE. Therefore, waivers were discontinued in Spring, 2007 pending the issuance of SF Approved lists for these commodities.

OCA senior managers recommended avoiding using waivers as a method of accountability except for high-value items, such as vehicles (SFE's "Clean Vehicle" program has been quite successful in using waivers). For these items, it is very difficult for City staff to make off-contract purchases, and they have no choice but to work through OCA. However, for smaller commodities, waivers could create a substantial administrative burden on OCA, SFE and city staff.

While City staff are required by policy to buy items from citywide commodity contracts if they exist – as opposed to buying through departmental authority or by reimbursements – OCA has noted that they lack the personnel to enforce this policy. City vendors have reported substantial off-contract purchasing by City departments. In addition, the computer software now used citywide for purchasing purposes does not allow easy review of 'green' vs. 'traditional' purchases. This situation complicates any efforts at holding departments accountable to approved products lists.

For these reasons, SFE anticipates depending heavily on sales reports from vendors in its future green purchasing efforts. The reports allow easy identification of problem departments, which can then be targeted for outreach or problem-solving discussions. In addition, SFE hopes to invest considerable time in obtaining end user buy-in in its programs, as a way to change purchasing behavior.

VI. Training Programs

Batteries: 4 trainings of City staff conducted, plus numerous inclusions in larger trainings.

Disposable Food Container and Utensil contract: Upon award of the contract, SF Environment met with both vendors to educate them on the Food Service Waste Reduction Ordinance and to explain the importance of selling only compostable or recyclable food service ware to City agencies. SFE also met with City end users from San Francisco General Hospital and Laguna Honda Hospital Nutrition Services to discuss how to purchase compostable and recyclable food service ware and strategize on ways to capture these new products in the hospital's composting and recycling programs. Both San Francisco General and Laguna Honda are in the process of making physical changes to their buildings to accommodate additional carts and compactors for their new composting programs.

Food: 12 meetings of the interdepartmental sustainable and healthy foods workgroup, 3 meetings with City end users/purchasers, and one large meeting with multiple City departments represented.

Janitorial cleaners: 8 end user meetings and trainings to develop approved list and to educate City custodians on the use of green cleaning products. Trainings will continue through the end of 2007.

Janitorial Supplies and Paper contracts: SFE met with the Recreation and Parks Bathroom Task Force and custodial managers from throughout the City to promote the environmental and health benefits of using EPP products from these contracts. SFE explained the recycled content requirement in the contract as well as demonstrated coreless paper tissue rolls, the new Xlerator electric hand drier and outlined the benefits of using universal roll paper towels over multifold or proprietary roll towels. The Recreation and Parks staff agreed to insert EPP products from contracts into park bathroom standards throughout the City. Custodial supervisors were intrigued by the new products and agreed to purchase only EPP janitorial papers in the future.

Lamps: 5 end user meetings and 2 trainings of vendor staff.

Pesticides (overlap with IPM Ordinance requirements): Approximately 40 trainings

VII. Additional Actions Needed to Effectively Implement the Ordinance

Section 203(g)(ii) requires SFE to report on "additional specific actions, including legislation, needed to effectively implement this Chapter." The following are recommendations from SFE staff:

- A. **Secure funding for a full-time Green Purchasing Coordinator.** Reviews of other green purchasing programs (Liddell, 2003) and consultations with numerous green purchasing experts clearly concluded that a dedicated coordinator position is essential to the success of green purchasing programs. The SF program has been hampered by lack of staff time—both at SFE and OCA—to pursue its goals, as well as competition with pre-existing responsibilities. A coordinator would create work plans for all green purchasing activities, serve as liaison with City purchasers, and develop and coordinate educational, outreach, and pilot testing activities.

B. Enlarge the role of city vendors in implementation.

1. *Emphasize vendor sales reports as a way to promote accountability by City departments.* Include language in individual contracts specifying timetables, content and standard formats for vendor reports.
2. *Create disincentives for vendors selling goods off-contract,* particularly for product categories are part of an approved list. This practice seriously undermines the accountability and effectiveness of the program. Explore the option of debarring vendors who regularly sell listed goods off-contract.
3. *Enlist vendors in enforcing approved products lists.* Develop positive working relationships and conduct trainings if necessary with vendors' staff to enlist them in green purchasing efforts.

C. Replace the City's purchasing software. The ADPICS/FAMIS system is outdated and does not provide necessary data-tracking capability for monitoring city purchases of green vs. traditional products. New software could provide this service plus provide new mechanisms for accountability, so that all purchases would be more easily monitored.

VIII. Recommendations on How to Expand the Ordinance to Service Contracts

Section 203(g)(vi) requires a recommendation by the Director, after consultation with City Departments and the public, on how to expand this Chapter to City contractors. SFE offers the following recommendations:

SFE favors the extension of the Precautionary Purchasing Ordinance to cover service contracts as well as commodity contracts. Such an extension must be accompanied by a proportional increase in staffing at OCA and/or SFE.

Services and leases cover approximately 50% of city expenditures, and there are many instances where the insertion of simple contract specifications could have powerful environmental and health impacts. For example, custodial companies servicing City buildings could easily be required contractually to use SF-approved green cleaning products, or laundry services could be required to minimize their use of toxic materials. While some of these specifications could be incorporated without an ordinance in place, an overarching mandate would help ensure that such contracts become part of the City's green purchasing efforts.

Including service contracts in the ordinance would accomplish the following:

- Provide a stronger, central mandate for the inclusion of health- and environment-protective language in these contracts. This kind of proactive approach is required under the Precautionary Principle Ordinance (Environment Code, Chapter 1). Currently the opportunity to include such language is ignored, or the department requesting the contract is unwilling to conduct the necessary background research.
- Bring environmental professionals from SFE into the process of reviewing and assisting in the development of service contracts. Including environmental scientists in this way can identify potential areas of improvement or long-term cost savings that had not previously been explored. For example, research on the use of hazardous chemical products (conducted under the City's pilot EPP

program) showed an estimated savings of \$95/janitor per year accruing from the use of environmentally friendly cleaning products.

- Increase the level of scrutiny for service contracts. In the past, such scrutiny on commodities contracts has resulted in cost savings to the City. For example, SFE's work on the lamps contract identified the high costs of excluding lamps and ballasts from negotiated price discounts.

IX. Workplan for the Next Reporting Period

The following subject areas are considered highest priority for the coming six months.

A. Computers

SFE will serve on the Steering Committee for the new Computer Store contract process, and will recommend environmental specifications for desktop and laptop computers, monitors, servers and networking equipment. These specifications may be used in the scoring process for vendors on the contract, and/or for develop of approved product lists after the contract is complete.

B. Disposable Food Containers

SFE staff have been working closely with hospital staff to incorporate compostable foodware into their food systems. Composting is currently limited because non-compostable foodware is mixed with the waste stream. The ultimate objective is to allow composting of all food waste from the food services.

C. Food

Meetings with City food purchasers, food distributors, and other stakeholders will continue as San Francisco develops a policy on promoting healthy, local and sustainable food. This policy will likely require—as a start—that distributors provide full information on place of production and any relevant certifications (such as USDA Organic) for foods sold to the City.

D. Janitorial Cleaners

This is a critical time for organizing trainings, education and outreach on the use of green cleaning products. These activities will be held throughout the City in conjunction with the new SF Approved Product List for janitorial cleaners, which requires City staff to use only green products for certain common purposes.

E. Lamps

A new lamps contract is now in preparation, and SFE is updating its technical specifications on mercury content, energy efficiency, and product life to reflect rapid progress in the industry.

X. Appendices

A. Targeted Product Categories Scoresheet

B. Targeted Product Categories List

XI. References

Liddell, Beth. 2003. "Environmentally Preferable Purchasing (EPP) Programs and Strategies: Integrating Environmental and Social Factors into Procurement Practices." Report prepared for the Pacific NW Pollution Prevention Resource Center (PPRC), www.pprc.org