King County
Department of Executive Services
Finance and Business Operations Division
Procurement and Contract Services Section
Environmental Purchasing Program
www.kingcounty.gov/procurement/green

2010 Environmental Purchasing Program Annual Report
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Purchases and Savings

In 2010, King County purchased $41 million worth of environmentally preferable products, saving $1 million compared to the cost of conventional products. King County strives to buy products that are cost effective, meet performance requirements and are environmentally preferable. These products provide various environmental benefits, including resource efficiency, reduced toxicity, durability, and/or recycled content.

The tables below summarize environmentally preferable product purchases for 2010. This data is obtained primarily from supply contracts, which are centrally administered goods and service contracts that enable county agencies to purchase materials at low and consistent prices. The tables also include data from one-time purchases.

2010 Purchase Summary

Office Products	Per	Units	$
Copy and Bond Paper	Case	18,905	774,123
Printing Paper	N/A	N/A	1,114,081
Paper Products, Office	N/A	N/A	436,921
Toner Cartridges	Each	2,837	167,541
Computers	Each	1,837	1,654,412
Can Liners	Case	9,210	280,177
Sub-Total:			**4,427,255**

Operations and Maintenance	Per	Units	$
Compost	Yard	2,972	89,160
Paper Products, Janitorial	Case	15,341	589,942
Shredded Wood	Yard	27,061	201,063
Cleaners	Case	1,699	132,735
Cleaners, Bulk	Gallon	1,765	28,436
Carpet	Sq. Yd	178	8,599
Flooring	Sq. Ft	1,300	8,609
Solar Powered Trash Containers	Each	2	7,654
Sub-Total:			**1,066,198**

Vehicular	Per	Units	$
Motor Oil	Gallon	102,329	836,617
Antifreeze	Gallon	22,487	84,921
Bio-Based Lubricants	Gallon	1,815	23,552
Ultra-Low Sulfur Diesel (ULSD)	Gallon	13,026,960	30,331,547
Biodiesel (B100)	Gallon	44,924	166,304
Flexible Fuel Vehicles	Each	80	1,857,653
Hybrid Vehicles	Each	45	1,142,377
Propane Vehicles	Each	8	274,653
Hybrid Trucks	Each	2	496,465
Tire Retreading	N/A	N/A	264,578
Sub-Total:			**35,478,667**

Resource Recovery Services	Per	Units	$
Electronics Recycling	N/A	111,890	18,971
Fluorescent Lamp Recycling	N/A	35,807	12,142
Antifreeze Recycling	Gallon	18,137	0
Carpet Recycling	Yard	178	N/A
Office Material Recycling	Pounds	1,337,887	N/A
Sub-Total:			**31,113**

Purchase Totals	$ 41,003,233

OFFICE PRODUCTS

Copy and Bond Paper

King County has purchased recycled content copy paper with 30% post-consumer content meeting EPA's Comprehensive Procurement Guidelines minimum content standard since 1991. In 2010, a 40% recycled content product was substituted by the vendor for the same price, and approximately half of all copy paper purchased had this content. Over the past few years, the use of 100% recycled content copy paper has grown to approximately 15% of white copy paper purchases, or 2,763 cases. Agencies purchased a total of 18,905 cases of recycled content copy paper at a cost of approximately $775,000.

A new policy is being proposed in 2011 that will move the county toward greater use of 100% recycled content copy paper, paired with a 20% waste reduction in paper use. Also in 2011, Procurement and Contract Services will bid a new copy paper contract that could yield better pricing for county agencies.

The Environmental Defense Fund Paper Calculator (www.papercalculator.org) estimates that buying 100% recycled content copy paper exclusively, instead of 30% content, reduces the environmental impact of county purchases by saving the equivalent of 8,213 trees, 3.76 million gallons of water and approximately 780,881 pounds of CO2.

Printing Paper

The county produces many publications, statements and forms in everyday operations. Agencies use recycled content paper in various business functions, including business cards, tax and court forms, posters, reports and bus timetables. The recycled content of this paper varies from 20% to 100% depending on the type of paper needed from newsprint to card stock. Most of this work is performed in the County Printshop, and when necessary, agencies contract with outside vendors to produce this work. In 2010, an estimated $1.1 million was spent on paper costs associated with these contracts.

Paper Products

In addition to recycled copy and printing papers, the county also maintains several contracts that allow agencies to purchase various recycled paper products. These include office supplies, such as envelopes, boxes, folders and notepads, and janitorial products, such as paper towels and tissues. The recycled content of this paper varies from 10% to 100% depending on the manufacturer and product type. Several unbleached and non-chlorine bleached products are available on contract. In 2010, agencies spent approximately $590,000 on 15,341 cases of janitorial products and $437,000 on miscellaneous recycled content office supplies.

Toner Cartridges

King County has purchased remanufactured toner cartridges for laser printers, fax machines and ink-jets since 1991. Cartridges supplied under contract must meet original equipment manufacturers (OEM) standards and provide full performance guarantees. The county's specifications require spent cartridges to be remanufactured and all components to be recycled when their useful life is over, reducing the landfill disposal of hazardous material. In 2010, the county purchased 2,837 cartridges for $167,541. These purchases saved an estimated $223,000. The cost of recycled cartridges varies, but is usually less than half the cost of new cartridges.

Computers

The county has a policy to encourage agencies to buy EPEAT compliant products. The Electronic Products Environmental Assessment Tool, or EPEAT, is an environmental procurement tool sponsored by the Environmental Protection Agency (EPA) and managed by the Green Electronics Council to evaluate, compare and select desktop computers, laptops, monitors based on their environmental attributes.

In 2010, the primary vendor for purchases of desktop computers, laptop computers and monitors supplied the county with 1,837 EPEAT compliant

products at a cost of approximately $1.65 million. 90% of desktops, monitors and laptops met the EPEAT gold rating, meeting the 23 required criteria, plus at least 75% of the optional criteria. The remaining 10% of purchases met the silver rating.

In addition to the procurement tool, there is another tool called the Electronics Environmental Benefits

Calculator developed for the EPA that estimates the environmental and economic benefits of purchasing EPEAT-registered products. According to its calculations, King County achieved a reduction of 2,800 metric tons of air emissions, including greenhouse gas reductions equivalent to 87 passenger and cost savings of $65,000 through the purchase of EPEAT compliant products. To find out more about the calculator, visit www.epeat.net/FastBenefits.aspx.

Since 2007, the Office of Information Resource Management (OIRM) has installed energy savings software on networked computers that powers them down when not in use. New upgrades in 2009 included automatically turning off the county's almost 6,000 networked computers after certain hours and forcing sleep mode after 15 minutes of non-use. In the past year, approximately 1,220 metric tons of carbon dioxide emissions were reduced and this saved an estimated $116,000 in energy costs, which correlates to a 40% reduction in energy.

Can-Liners

In 2010, King County purchased 9,210 cases of can-liners at a cost of $280,000. These were made with 25%-30% high-density polyethylene (HDPE) or 25% low density polyethylene (LDPE) recycled post-consumer plastic. County agencies have used recycled plastic bags from various vendors with good results since 1991. A new contract in 2010 continues the practice of purchasing recycled content products.

Facilities Management Division (FMD) is using approved compostable bags in employee kitchens where there is food composting available and they are testing other compostable bag applications in a few other limited areas.

Operations and Maintenance Products

Compost

Compost amended topsoil is specified for use in maintenance and construction projects. Although several agencies require their contractors to use compost in their construction projects, it is difficult to compile this data. King County Roads reported the use of approximately 3,000 cubic yards of compost in 2010.

Shredded Wood

Wood chips made from shredded land-clearing debris can be used as ground cover for erosion-control, horticultural mulch, and other applications. In the last year, the Solid Waste Division used 27,061 yards of shredded wood, or "hogfuel," to stabilize temporary driving surfaces at the Cedar Hills landfill, especially during rainy seasons. They also improved their operating procedures and are able to cover the same acreage with less material.

Cleaners

Various county facilities are being cleaned using Green Seal certified cleaners, including downtown office buildings, correctional facilities, public health clinics, transit bases and the Downtown Seattle Transit Tunnel. Concentrated cleaners, which are then diluted with water as appropriate for the application, yield many benefits, especially to worker health and safety as there is reduced exposure to toxic chemicals.

Facilities Management Division, Department of Adult and Juvenile Detention and the Department of Public Health purchased 1,700 cases of green cleaners in liter and gallon concentrate in 2010, worth $132,735. Metro Transit purchased 1,765 gallons in bulk 55 gallon drums in 2010.

Additionally, FMD and Metro Transit both achieved a reduction in cost and in the quantity of chemicals used over the years because they used less product overall. FMD reduced their cost by 20 percent and reduced their usage by 60 percent mainly by switching to an advanced dilution system. Transit went from stocking 30 different products to using just two main multi-purpose cleaners.

The county also maintains several janitorial service contracts in addition to having county staff clean facilities. The county supplies green chemicals to the contractor for use in the facility and any additional products have to be approved by the facility manager prior to use.

Carpet

King County agencies buy carpet, cushions, adhesives and installation services for small remodels and renovation work through the State of Washington flooring contract. Many of the products available have various certifications for recycled content and other elements of environmental preferability, including low emissions of VOCs. The county was without a procurement contract for flooring for all of 2009 and most of 2010, with a contract finally executed at the end of 2010.

In the past year, King County purchased only 180 sq. yds of recycled content carpet. The carpet contained 18% recycled content and met the NSF/ANSI-140 Platinum of the NSF/ANSI-140 Sustainable Carpet Assessment Standard. This carpet and adhesives met the Carpet and Rug Institute (CRI) Green Label Plus certification for Indoor Air Quality (IAQ). Carpet was also recycled under this contract.

In addition to carpet, 1,300 sq feet of linoleum was installed in the county courthouse for $8900. This is notable because linoleum is made from natural ingredients and considered to be environmentally preferable and more durable than vinyl flooring, which a synthetic product is made of chlorinated petrochemicals.

Trash Compactors, Solar Powered

In 2010, the Transit Division purchased two solar powered, compacting trash compactors as a pilot program to evaluate their use at two bus shelters. These units are enclosed systems that will keep the trash contained and dry during inclement weather and are resistant to birds and rodents. They also don't have to be emptied as often because the garbage gets compacted. They will evaluate the overall performance of these units and see if they are worth the additional cost.

VEHICULAR PRODUCTS

Motor Oil

Motor oil made with re-refined base stock has been used in county vehicles operated by the Renton Maintenance Facility, Motorpool and Solid Waste Operations since 1992. Metro Transit became one of the first major metropolitan transit authorities in the nation to adopt the use of re-refined motor oil for its entire fleet of over 1,200 buses in 1999. In 2010, the county purchased 102,329 gallons of primarily 15w40 and 10w30 in bulk and drums.

For the second year in a row, purchasing re-refined oil saved the county approximately $.20 a gallon. For years it was at a premium, but now it is less expensive due to the rising cost of petroleum products. In addition to purchasing re-refined motor oil, the county recycles most of its used motor oil. Metro Transit alone recycled 81,851 gallons of used motor oil and received $40,000 in revenue.

Antifreeze

County agencies, including Motor Pool, Solid Waste Operations, Fleet's Renton Maintenance Facility and Metro Transit purchase antifreeze manufactured with re-refined ethylene glycol. Metro Transit uses a concentrated product for buses and introduce the necessary "additive packages" in the maintenance shops. In 2010, the county purchased 22,487 gallons of re-refined antifreeze and recycled it at no cost.

Bio-Based Lubricants

The Renton Maintenance Facility of the Fleet Administration Division (Fleet) has purchased vegetable-based hydraulic oils for use in their equipment, from lawn mowers to dump trucks, since 2001. Bio-based lubricants were tested by Fleet and found to perform as well as, or better than, petroleum oils. They are readily biodegradable, low in toxicity, and safer for workers. The agency also requires manufacturers to fill new equipment with vegetable-based hydraulic fluid and provide documentation at time of delivery. In the past year, they purchased 1,815 gallons of bio-based lubricants.

Ultra-Low Sulfur Diesel

In 2002, five years ahead of the EPA requirement, known as the "2007 Highway Rule", King County began purchasing ultra-low sulfur diesel (ULSD) fuel. The fuel switch, along with the addition of diesel particulate filters, reduced particulate emissions by 90 percent. ULSD has the same energy and performance characteristics as standard diesel, so its use does not affect engine performance or warranties. In 2010, Metro Transit, Fleet and Solid Waste Divisions purchased 13 million gallons of ULSD fuel.

Biodiesel

Biodiesel is a diesel-fuel substitute produced from renewable, non-petroleum, sources, such as vegetable oils, animal fats and recycled cooking oils, and reduces our dependence on petroleum products. King County was a major consumer of biodiesel in the State of Washington between 2004 and 2008, as part of its leadership to mitigate climate change and advance clean energy technologies.

By 2008, prices soared and in June of that year, the King County Council suspended the use of biodiesel, calling for a study to examine potentially harmful biofuel impacts. The study, led by Washington State University, showed "the majority of peer-reviewed life-cycle assessments have found that most, if not all, biofuels provide a net-positive greenhouse gas emissions and energy benefit. King County decided that the combination of price and no net benefit environmental impacts was enough to no longer buy biodiesel for Metro Transit. Since performance is good, the SWD continues to use biodiesel. In 2010, they purchased 44,924 gal of B100 and had it blended with ULSD to provide approximately 225,000 gallons of B20 (20% biodiesel / 80% ULSD blend).

Hybrid and Alternative Fuel Vehicles

King County has been a leader in investing in new technologies, from alternative fuel vehicles in the 1990's, to hybrids in the last decade, and starting in 2011 with all-electric passenger cars. County agencies purchased 80 alternative fuel vehicles and 45 hybrid-electric passenger cars in 2010.

Flexible Fuel Vehicles

In 2009, King County Fleet purchased 88 flexible-fuel vehicles (FFV), including 60 police cars and eight propane-powered vehicles. Most of these vehicles are equipped to use ethanol, gasoline, or "E85," the term for fuel blends of 85 percent ethanol

and 15 percent gasoline. Using E85 reduces carbon dioxide (CO2), hydrocarbon and benzene emissions when compared to vehicles running on gasoline.

Hybrid Vehicles

King County has purchased hybrid electric vehicles (HEVs) to replace older model vehicles as they are retired, since 2001. Hybrids are fuel-efficient and contribute less to greenhouse gas emissions. The county purchased 45 hybrid vehicles, including Ford, Toyota and Hondas brandsfor various fleets in 2010.

Plug-in Hybrid-Electric Vehicles

The Department of Transportation joined with three other local government agencies to convert 13 Toyota Prius hybrid sedans to plug-in hybrid electric vehicles (PHEVs).

The County also plans to order at least 35 of the new all electric Nissan Leaf's in 2011. Grant funding will be used for the plug-in technology portion of the price.

Hybrid Trucks

In 2010, Fleet purchased two specialty hybrid trucks, one with an aerial lift and the other for mobile lubrication. This is in addition to the two already in service. These hybrids all have the unique capability to operate lift/tow/fill functions in electric only mode, so the engine does not have to be idling. "We're easily seeing a 30 percent fuel savings with the new hybrid trucks," said Fleet Equipment Manager Bob Toppen. "They have been performing at or above our expectations in all areas".

Hybrid Buses

In 2010, Metro Transit replaced 93 old 40-foot buses with new hybrid diesel-electric vehicles that are 30 percent more efficient. These vehicles are heavily grant funded and allowed King County to add 84 more hybrids than were planned. The addition of these buses saves the fleet $4.7 million annually in fuel costs and reduces greenhouse-gas emissions by 18,000 tons of carbon dioxide.

Tire Retreading

The county spent $264,578 to retread tires for trucks and other heavy equipment at the Renton Maintenance Facility, Fleet Administration Division and Solid Waste Operations. This not only avoided landfill disposal of tires, but also saved the county approximately half of the new-tire expense in 2010, as retreading a tire is half the cost of buying a new tire.

Lead-Free Wheel Weights

Lead weights are used to balance wheels on vehicles. Because these frequently fall onto the roadway and are pulverized by traffic, they are increasingly understood to represent a public-health hazard and are receiving increasing attention from regulators in the US, including Washington State. They have been banned in Europe since 2005.

Fleet has used an alternative product since 2005 consisting of adhesive flexible plastic (non-pvc) cartridges filled with steel media in various weights and concluded through testing that they last longer and the environmental benefits justify their slightly higher cost.

Rubber Truck Decking

King County Fleet Equipment Shop has been using a recycled rubber/plastic composite product to line equipment trailer decks since 2001. This product, which replaces exotic hardwoods or other specialized woods customarily used in this application, performs better than wood, provides a nonskid surface, is durable, and has recycled content. They use this product as a replacement decking and require new equipment to be delivered with this material already in place. Last year, they specified 1-1/2" recycled product to cover the bed of a tilt deck equipment trailer.

Resource Recovery Services

Electronics Recycling

King County agencies have been recycling obsolete computers, television sets and other electronic equipment with a local recycling firm since 2002. There is growing concern about the ultimate effects of landfill, disassembly, or incineration of computers and electronics, which contain a variety of heavy metals and other toxins. Of special concern are cathode ray tubes (CRTs), which are no longer accepted at the King County landfill, because they contain large amounts of lead.

King County Code requires working equipment to be surplused for redistribution within the county, donated or auctioned. Non-working equipment is recycled through a local recycler, through the Washington State contract for electronics recycling services that include strict requirements for recycling electronic components domestically.

In 2010, 43,000 lbs of electronic equipment, 28,000 lbs of CRT's, and 9,000 lbs of batteries were recycled from county agencies through this contract.

In 2011, the county will pursue legislation requiring BAN's eSteward certification or equivalent to ensure that e-waste is being held to the highest standards.

Fluorescent Lamp Recycling

King County businesses and residents are required to recycle products containing mercury, including fluorescent lamps, as they are no longer allowed in the garbage or accepted at transfer stations. King County established a contract for recycling waste lamps, including fluorescent tubes and high-intensity discharge (HID) lamps from its own facilities in 2000. Even though fluorescent lamps contain mercury and are require recycling, they are three to four times more energy efficient than incandescent lamps, they last up to ten times longer and reduce greenhouse gas emissions. Responsible recycling reduces the hazard of mercury escaping into the environment. In the past year, King County recycled various lamps, including 32,179 compact and straight fluorescent tubes/lamps; 2,940 HID lamps and 1,200 lbs of ballasts.

Asphalt, Concrete and Street Sweeping Recycling

The Road Services Division Coordinated Reduction of Waste program (CROW), has been sorting and recycling materials, such as asphalt, concrete, and fill from road operations since 1991. They are often able to recover asphalt and concrete and stockpile these for use as fill-material in road projects. The recycling efforts of the CROW Program save more than $300,000 every year.

Since 2003, the Division's Street Waste Alternative Program (SWAP) has been processing and reusing street-sweeping waste and catch basin solids to create a berm that serves as a visual and auditory barrier around maintenance operations at the Summit Maintenance Facility. In the past year, they have recycled 11,005 tons of treated waste from street sweepings, storm drain cleaning, and other road operations.

Last year, King County Roads Maintenance Section paid $26.72 per ton to haul, consolidate, process, treat, test, and reuse our generated street sweepings and stormwater decant solids. This cost per ton also includes all administrative costs associated with SWAP. Total cost for SWAP was $297,131.

Office Recycling Programs

King County agencies recycle paper, cardboard, newspaper, aluminum cans, and plastic and glass bottles from all offices. These are collected by a local recycler and sold as feedstock for the manufacture of various recycled products. In 2010, agencies recycled almost 1.3 million pounds of material.

Food Waste Composting

In 2010, two downtown county office buildings started recycling food waste from kitchen scraps from employee lunch rooms. The organics are picked up from a local recycler and composted with yard waste. It is less expensive to divert the food waste to recycling than it is to landfill and it also supports the county's overall goal to keep organics out of the landfill.

SAVINGS SUMMARY

In 2010, the county saved $1 million by purchasing recycled and other environmentally preferable materials. The Environmental Purchasing Program has helped agencies identify opportunities to purchase environmentally preferable products that not only perform well, but also save money. In some cases, the product simply costs less and in other cases savings are found in avoided purchase costs because the alternative product is more durable. For example: the cost of a remanufactured toner cartridge is less than one-half the cost of a new cartridge, plastic lumber avoids the consumption of virgin timber or old growth lumber, and it costs half as much to retread a worn tire as to buy a new one.

The table below represents estimated cost savings based on purchase price only, or avoided purchase cost, and does not reflect savings in maintenance and installation.

Commodity	2010 Savings
Aggregates[1]	300,000
Toner Cartridges	222,830
Tire Retreading	264,578
Green Cleaners	132,735
Antifreeze	17,175
Motor Oil	61,004
Total Dollars:	**$998,322**

Additional savings in energy or climate emissions are not calculated here. They have been documented to some extent by those programs. As these costs become easier to quantify in relation to purchase costs, they will be calculated.

[1] Aggregates – avoided purchase costs for reuse of asphalt and concrete that are stockpiled, then used as fill-material in road projects by Roads Division