



2011 Environmental Purchasing Program Annual Report - Supplemental Detail

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King County

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Finance and Business Operations Division
Procurement and Contract Services Section
Environmental Purchasing Program
www.kingcounty.gov/procurement/green

PURCHASES AND SAVINGS

In 2011, King County purchased approximately \$60 million worth of environmentally preferable products, saving \$1.54 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 2011. 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 and those under \$5000 that don't require a contract.

2011 PURCHASE SUMMARY

Office Products	Per	Units	\$
Copy and Bond Paper	Case	16,417	655,858
Printing Paper	N/A	N/A	1,383,867
Paper Products, Office	N/A	N/A	343,088
Toner Cartridges	Each	5,108	544,964
Computers	Each	2,806	2,117,306
Can Liners	Case	7,340	175,396
Glass Awards	Each	1,459	49,681
Sub-Total:			5,270,160

Operations and Maintenance	Per	Units	\$
Compost	Yard	986	29,580
Paper Products, Janitorial	Case	14,819	608,335
Cleaners	Gallon	4,833	161,496
Carpet	Sq. Yd	6,511	149,562
Refurbished Furniture	Each	N/A	202,167
Solar Powered Bus Shelter Lighting	Each	12	48,000
Solar Powered Trash Containers	Each	2	7,990
Sub-Total:			1,207,230

Vehicular	Per	Units	\$
Motor Oil	Gallon	86,232	745,395
Antifreeze	Gallon	29,527	103,388
Bio-Based Lubricants	Gallon	2,035	25,288
Ultra-Low Sulfur Diesel (ULSD)	Gallon	13,886,877	43,521,138
Electric Vehicles	Each	25	846,870
Flexible Fuel Vehicles	Each	334	7,494,545
Hybrid Vehicles	Each	26	530,659
Propane Vehicles	Each	9	268,279
Tire Retreading	N/A	N/A	136,320
Sub-Total:			53,671,882
Resource Recovery Services	Per	Units	\$
Electronics Recycling	N/A	119,728	19,355
Fluorescent Lamp Recycling	Each	43,744	13,358
Sub-Total:			32,713
Purchase Totals			\$60,181,985

OFFICE PRODUCTS

Copy and Bond Paper

King County has purchased recycled content copy paper with 30 percent post-consumer content meeting EPA's Comprehensive Procurement Guidelines minimum content standard since 1991. Over the past few years, the use of 100 percent recycled content copy paper has grown to approximately 19 percent of all white copy paper purchases. Agencies purchased a total of 16,417 cases of recycled content copy paper at a cost of approximately \$656,000, which was a 9.5 percent quantity reduction over 2010 purchases.

A new policy (Ordinance 17074) was adopted in 2011 for full implementation in 2012 that will move the County toward greater use of 100 percent recycled content copy paper, paired with a 20 percent waste reduction in paper use. The County has already achieved savings of \$118,265 in the past year by purchasing fewer cases of paper, and by receiving better pricing under the new copy paper contract established in September, 2011.

The Environmental Defense Fund [Paper Calculator](#) estimates that buying 100 percent recycled content copy paper exclusively, instead of 30 percent content, reduces the environmental impact of County purchases by saving the equivalent of 6,026 trees, 2.75 million gallons of water and approximately 306 tons 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 percent depending on the type of paper needed from newsprint to card stock. Much of this work is performed in the County Printshop, and when necessary, agencies contract with outside vendors. In 2011, an estimated \$1.38 million was spent on paper costs associated with these contracts.

Office Supplies, Paper

In addition to recycled copy and printing papers, the County also purchases various recycled office paper products. These include office supplies, such as envelopes, boxes, folders and notepads. The recycled content of this paper varies from 10 percent to 100 percent depending on the manufacturer and product type. These products are available on the office supplies contract and the "green" products are highlighted in the on-line catalogue. In 2011, agencies spent approximately \$343,000 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 2011, the County purchased 5,108 cartridges for \$544,964. These purchases saved an estimated \$545,000. 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, work stations and monitors based on their environmental attributes.

In 2011, the primary computer vendor supplied the County with 2,806 EPEAT® compliant products at a cost of approximately \$2.12 million. All desktops and workstations met the EPEAT® gold rating, meeting the 23 required criteria, plus at least 75 percent of the optional criteria. Monitors and

notebooks were mostly gold, with the remaining purchases meeting the silver rating.

In addition to the procurement tool, 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 3,913 metric tons of air emissions, including greenhouse gas reductions equivalent to 121 passenger cars and cost savings of \$91,294 through these purchases.

Can Liners

In 2011, King County purchased 7,340 cases of can-liners at a cost of \$175,000. These were made with 25-30 percent high-density polyethylene (HDPE) or 25 percent low density polyethylene (LDPE) recycled post-consumer plastic. County agencies have used recycled plastic bags from various vendors with good results since 1991.

Facilities Management Division (FMD) buys Cedar Grove Composting approved compostable bags for food waste collection in employee kitchens in a few downtown buildings. They are also testing other types and sizes of compostable bags in a few other limited areas.

In addition, the Equipment Shop purchased 15,000 printed logo litter bags with recycled content.

Glass Awards

Employees receive awards in five year increments for their career service. Last year, 1,459 employees received recycled glass awards engraved with their name and years of service. The manufacturer of these awards uses recycled glass. This award program diverted over one ton of glass from the waste stream in 2011.



OPERATIONS AND MAINTENANCE PRODUCTS

Janitorial Paper Products

Agencies purchase thousands of cases of paper towels and tissue products. The recycled content of these papers varies from 10 percent (facial tissue) to 100 percent (towels) depending on the manufacturer and product type. Several unbleached and non-chlorine bleached products are available on contract. A new contract was established at the end of 2011 that requires higher levels of recycled content and for vendors to identify when the product meets an environmental certification such as Green Seal® or Ecologo™. In 2011, agencies spent approximately \$608,000 on 14,819 cases of janitorial products

By March, 2011, FMD completed installation of approximately 150 universal paper towel dispensers to replace proprietary dispensers. This simplifies the purchase of recycled paper towels by reducing the number of different types and brands in stock.

On the contrary, the Weyerhaeuser King County Aquatic Center replaced paper towel dispensers in all the restrooms with high efficiency hand dryers.

Cleaners

Various County facilities are being cleaned using Green Seal® certified cleaners, including 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.

FMD, Metro Transit, Department of Adult and Juvenile Detention and the Department of Public Health purchased 4,833 gallons of concentrated multipurpose cleaners and soap in 2011, achieving approximately a 60 percent reduction in overall product use.

FMD and Metro Transit also use chemical-free equipment that utilizes water and microfiber clothes

to clean many surfaces including restrooms and stainless steel.



The County 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. There are currently four on-going service contracts with this criterion.

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 volatile organic chlorides (VOCs).



In the past year, King County purchased 6,511 square yards of recycled content carpet with low VOC's. The carpets contained 10 to 57 percent recycled content and are certified to NSF/ANSI-140 Sustainable Carpet Assessment Standard. These carpets and adhesives also met the Carpet and Rug Institute Green Label Plus certification for Indoor Air Quality (IAQ).

In December 2011, a new flooring contract was awarded by US Communities that the County plans

to use in 2012 in addition to the state contract. This contract offers many sustainable choices and certified products, including a carpet tile product that uses minimal adhesives that contain virtually no-VOCs. This project was led by City of Seattle to encourage the most environmentally preferable products and makes them available nationwide through this contract.

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 cost effectively capture this data. Roads reported fewer construction projects in 2011 with the use of approximately 1,000 cubic yards of yard waste compost. In 2012, a large quantity should be used on a big project.

Trash Compactors, Solar Powered

In 2011, the Transit Division purchased two additional solar powered, trash compactors for further evaluation at bus shelters that will join the other two in service for a total of four. These units are enclosed systems that keep 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 to see if they justify the additional cost.

Solar Powered Bus Shelter Lighting

Twelve new solar lighting systems with light-emitting diodes (LED) lamps were installed last year in 11 bus shelters at the cost of about \$48,000. These lighting systems are being installed in bus shelters that did not previously have lighting. Although these systems are costly, they are placed in areas where it is difficult and increasingly expensive to connect to the grid. Typical shelters are outfitted with 28 watt compact fluorescent lamps that use an estimated 111 kilowatt hours per year. Every solar shelter light installed saves the equivalent from the grid.

Transit is also pursuing LED alternatives for the 28 watt compact fluorescent fixtures with Seattle City Lights' Energy Conservation section.



Refurbished Furniture

FMD and the Public Health Department purchase used modular furniture for office moves and remodels. The primary purchase was for refurbished Herman Miller Ethospace modular furniture. Facilities will pursue a contract in 2012 for additional items.

Motor Rewind Services

A new contract was established in 2011 for electric motor rebuild and rewind services. The contractors are required to meet ANSI/EASA Standard AR-10-2010 and be a current member of the Green Motors Practices Group. This group encourages environmental practices and works with participating utilities that provide financial incentives to the members of the Green Motors Initiative, which in turn pays a rebate to customers.

Lamps, Fluorescent and LEDs

King County Procurement and Contract Services worked with the State of Washington on a new contract for lamps and ballasts, awarded in June 2011, meeting the new 2012 federal energy efficiency requirements. In addition to price, the bids were evaluated on several non-cost environmental factors, including long-life lamps and reduced mercury and lead, referencing



mercury limits set by the European Union's Restriction of Hazardous Substances Directive, as there are no current federal limits.

County agencies, including Facilities Management Division, Transit Division and Parks and Recreation have completed several projects at various facilities, including at the Component Supply Center and the Weyerhaeuser King County Aquatic Center upgrading to more efficient fluorescent lamps and lighting controls. The Airport, Marine and Transit divisions installed light emitting diodes (LEDs) for over 320 taxiway lights and 13 signs, a trial light at Pier 50, and bus headlamps, respectively. LEDs are long lasting and energy efficient, which far outweigh their initial cost. Many more energy efficient lighting upgrades and the use of LEDs, are planned for 2012 at several maintenance facilities.

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. In 1999, 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 1,300 buses. In 2011, the County purchased 86,232 gallons of primarily 15w40 in bulk and drums.

For the third year in a row, purchasing re-refined oil in bulk saved the County approximately \$.20 a gallon or \$17,146 in 2011. For years it was at a premium, but now it is less expensive due to the rising cost of petroleum products. The County recycles its used motor oil. Metro Transit alone recycled 84,862 gallons of used motor oil and received \$50,470 in revenue.

Antifreeze

County fleets purchase antifreeze manufactured with re-refined ethylene glycol. Metro Transit uses a concentrated product for buses and introduces the necessary "additive packages" in the maintenance shops. In 2011, the County purchased

29,527 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. They require manufacturers to fill new equipment with vegetable-based hydraulic fluid and provide documentation at time of delivery. Although the initial cost of these lubricants is more expensive than their petroleum counterparts, there is reduced liability in case of a spill. In the past year, they purchased 2,035 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 2011, Metro Transit, Fleet and Solid Waste Divisions purchased 13.9 million gallons of ULSD fuel.

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 334 alternative fuel vehicles, 26 hybrid-electric passenger cars, 25 electric cars and 9 propane trucks and in 2011.

Flexible Fuel Vehicles

In 2011, Fleet purchased 43 flexible-fuel vehicles (FFV), including 33 police cars and nine propane-powered vehicles. Metro Rideshare Operations purchased 291 alternate fuel passenger vans in 2011.

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 26 hybrid vehicles, including Ford and Toyota brands for various fleets in 2011.

Accessible Services purchased and put into operation 24 hybrid Access mini buses during 2011.

Propane-Powered Vehicles

Fleet placed 9 liquid petroleum gas (LPG or propane) pickup trucks in service in 2011. The incremental cost of \$104,460 for the factory-approved conversions was paid for with American Reinvestment and Recovery Act funding obtained through Clean Cities Coalition and the Department of Energy.



Electric Vehicles

The Department of Transportation purchased 25 electric cars in 2011 – 20 for Rideshare Operations and five for the MotorPool fleet.

Metro Rideshare Operation's purchase of 20 Nissan Leafs is to pilot electric vehicle (EV) technology in a commuter application called "Metropool" and



coordinate the installation of charging stations at major employer sites and multi-modal transportation hubs such as Park & Rides, train stations and ferry terminals.



A joint contract issued by the City of Seattle and King County was established to purchase charging station equipment for the electric vehicles. Twenty-seven stations were installed in 2011, with 54 more scheduled for 2012.

Hybrid Buses

Metro Transit bus fleet replacement project included the purchase of 169 40-foot hybrid buses and 86 60-foot articulated hybrid buses during 2011. Federal Transit Administration awarded Metro and Sound Transit \$6 million to purchase these hybrid diesel-electric buses that are 30



percent more efficient than the replaced conventional diesel buses that have reached the end of their useful lives.

Of this order, Metro placed 90 – 40 foot hybrid buses into services, saving approximately 59,500 gallons of diesel and 88 60-foot hybrids replacing older buses and adding new using 20,000 gallons less fuel per year than the diesel buses they replaced.

Tire Retreading

The County spent \$136,320 to retread tires for trucks and other heavy equipment at the Renton Maintenance Facility, Fleet and Solid Waste Operations. This not only avoided landfill disposal of tires, but also saved the County approximately half of the new-tire expense, as retreading a tire is half the cost of buying a new tire.

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. Electronic waste, or "e-waste," is of particular concern if disposed of improperly because it contains a variety of heavy metals and other toxins that can leach into the environment. 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 surplus 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 2011, King County became the second county in the nation to earn the "e-Steward Enterprise" designation from the Basel Action Network's (BAN) standard for responsible recycling and reuse of electronic equipment, ensuring that all County agencies recycle electronic waste such as computer monitors, TVs, and cell phones in an environmentally responsible way.



Last year, the County Council passed legislation (Ordinance 17085) requiring BAN's e-Stewards® certification, or equivalent, of contracting vendors, to ensure that e-waste recycling is being held to the highest environmental standards. The current contractor is a certified e-Stewards® recycler, reaching this elite status in 2011. County agencies recycled 68,099 pounds of electronic equipment, 6,820 pounds of CRT's, 1,253 LCD monitors, 14,447 pounds of televisions, 1,546 pounds of copiers, and 6,356 pounds of batteries through this contract last year.

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 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 40,938 compact, straight and u-tube fluorescent lamps; 2,806 HID lamps and 3,717 pounds 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 often recover asphalt and concrete from jobs 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 recycled 12,903 tons of treated waste from street sweepings, storm drain cleaning, and other road operations.

Total cost savings for this program ranges from \$500,000 for recycling to almost one million dollars for disposal. This is because the Roads Maintenance Section paid a nominal fee of \$27 per ton to haul, consolidate, process, treat, test, and reuse their generated street sweepings and storm water decant solids.



SAVINGS SUMMARY

In 2011, the County saved \$1.54 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, concentrated green cleaners cost less per gallon once diluted with water than concentrated cleaners, 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	2011 Savings
Toner Cartridges	544,964
Aggregates ¹	300,000
Green Cleaners	161,496
Tire Retreading	136,320
Paper	118,265
Electronics Recycling	97,875
EPEAT Computers	91,294
Motor Oil	67,716
Antifreeze	23,283
Total Dollars:	\$1,541,213

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