

2010 Carbon Neutral Action Report Overview

Executive Summary

Douglas College is concerned about the quality of the natural environment and building a sustainable society. As such, the College has a responsibility to enable our community to become knowledgeable about the environment, and to become environmentally responsible. To educate by example and to demonstrate good environmental citizenship College operations will make all reasonable efforts to be environmentally sound.

Douglas College continues to investigate opportunities provided by organizations such as BC Hydro's' Power Smart programs and initiatives, Public Sector Energy Conservation Agreement (PSECA), Energy Canada (Enercan), and our Ministry of Advanced Education. These relationships provide access to a variety of resources which may assist us in developing an environmental sustainable energy management plan which focuses on achievable, sustainable and measurable results.

Douglas College has, via Smart Tool implementation, established baseline energy usage for future measurement of Energy and Green House Gas reduction targets.

Douglas College is committed to educate by example and demonstrate quality environmental stewardship. This work is an on-going process, for which both internal and external resources will need to be built up, and the complex concepts underlying environmentally sustainable development will need to be further elaborated and tested. We will have conversations with our consultants and partners and provide a means for reviewing progress. These actions will provide the opportunity to update procedures based on these reviews and the experience gained.



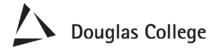
2010 Greenhouse Gas Emissions

The total 2010 greenhouse gas emissions, from all sources covered by the Greenhouse Gas Reduction Targets Act (as reported in SMARTTool) are as follows:

Mobile Fuel Combustion (Fleet and other mobile equipment)	2.07	tonnes of CO₂e
Stationary Fuel Combustion and Electricity (Buildings)	1720.88	tonnes of CO ₂ e
Supplies (Paper)	236.79	tonnes of CO ₂ e
Fugitive Emissions	0	tonnes of CO₂e
Emissions Which Do Not Require Offsets	0.15	tonnes of CO ₂ e
Total 2010 Emissions	1959.59	tonnes of CO ₂ e

Offsets Applied to become Carbon Neutral in 2010

Douglas College recognizes that it is responsible for 100 percent of the carbon emissions generated by the College. Achieving carbon neutrality involved measuring GHG emissions, reducing emissions where possible, and offsetting the remainder through the purchase of carbon offsets. To become carbon neutral, Douglas College purchased offsets equivalent to 1959.59 tonnes of CO₂, through the Pacific Carbon Trust.



Emission Reduction Activities

Actions Taken to Reduce Greenhouse Gas Emissions in 2010:

- At the New Westminster campus, reduced electrical consumption by reducing over-lamping in 10 washrooms and installation of LED pot lights in the washroom entrance vestibules.
- At the New Westminster campus, converted plumbing fixtures in 10 washrooms to low flow fixtures (toilets, urinals & faucets). At the Coquitlam campus, replaced 22 washroom faucets with hands-free low flow faucets.
- At the New Westminster campus, converted the main change room showers to low flow showers with timers.
- Upgraded 19 pneumatically controlled VAV boxes to DDC controlled.
- As part of a re-roofing project, installed an extensive green roof system on the third & fourth floor decks. Green roofs have been shown to improve storm water retention, mitigate urban heat island (which reduces cooling costs) and the vegetation helps to reduce urban dust and smog.
- Implemented Direct Digital Control heat recovery programming for the main air handling units at the Coquitlam campus. The programming should reduce heating costs by pre-heating the incoming fresh air for Air Handling Units 5 through 10.
- Commissioned Stantec Engineering to complete a Heating Plant Efficiency Report.
 The findings of the report identify opportunities to reduce both carbon emissions and energy costs.



<u>Plans to Continue Reducing Greenhouse Gas Emissions 2011 – 2013</u>

Douglas College will continue to initiate feasible, short and long term actions to meet Provincially mandated legislation for the reduction of Greenhouse Gas Emissions.

Douglas College will, through Facilities Services, "continue to research and promote short and long term initiatives to promote environmental sustainability".

The College, through Facilities Services will "look at how we can model a commitment to the highest values in environmental stewardship and sustainability at Douglas College".

In conjunction, the Marketing & Communications Office and Facilities Services, will continue to "enhance sustainability initiatives and continue an awareness campaign to encourage our employees to creatively think and act on reducing consumption and take on the challenge of modeling new personal behaviour around sustainability".

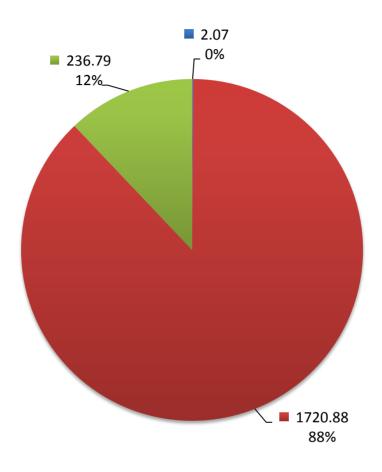
In 2010, there were significant reductions in the Annual Capital Allowance. These reductions did have a significant impact on Douglas College's ability to pursue substantive capital initiatives to reduce Greenhouse Gas Emissions. As the reduction of the Annual Capital Allowance continued for 2011, GHG reduction initiatives will impacted.

Executive Approval

K Maynes	April 29, 2011
Karen Maynes	Date
Vice President, Finance and	
Administration	

Douglas College

Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO₂e*)



Total Emissions: 1959.74

■ Mobile Fuel Combustion (Fleet and other mobile equipment)

■ Stationary Fuel Combustion and Electricity (Buildings)

■ Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2010

Total offsets purchased: 1959.59. Total offset investment: \$48,989.75. Emissions which do not require offsets: 0.15 **

^{*}Tonnes of carbon dioxide equivalent (tCO₂e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

^{**} Under the Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.

Actions Towards Carbon Neutrality

The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*.

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year		
Mobile Fuel Combustion (Fleet and other mobile equip	ment)							
This section is either not applicable, not yet evaluated, or was comple	This section is either not applicable, not yet evaluated, or was completed before 2010							
Stationary Fuel Combustion, Electricity and Fugitive Em	issions (Buildings)							
Owned buildings								
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	% of buildings built or renovated 0 since start year indicated used the integrated design process	Followed general integrated design processes with the design of the Stand-by Generator project which will be tendered in February 2011.	Will investigate integrated design with our Consultants and where feasible, incorporate integrated design into new construction & renovations.	2010	No End Date (Continuous)		
			Contractors are required to record all refrigerant top ups.	Contractors will continue to record all refrigerant top ups.		No Fred Date		
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions Ong	Ongoing/In Progress		Equipment set for disposal has the refrigerant reclaimed/removed prior to disposal.	Equipment set for disposal will continue to have refrigerant reclaimed/removed prior to disposal.	1996	No End Date (Continuous)		
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress		Conducted a number of small retrofits as described in the next section.	Where and when economically feasible, complete small energy retrofits.	1996	No End Date (Continuous)		
Retrofitting owned buildings								
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	Installed electrostatic filters on AHU-7 (reduces energy via lower pressure drop). Retrofitted 19 VAV boxes from pneumatic to DDC control.	FACILITIES - Convert mechanical inlet vane control on RF-7 to a variable speed drive (NWC). FACILITIES - Install CO2 sensors on main air handling units. CO2 sensors will be used for demand ventilation programming. FACILITIES - Standard practice is to include mechanical system upgrades during any renewal/retrofit work.	1996	No End Date (Continuous)		
Upgrade lighting systems during retrofits	Ongoing/In Progress	% of retrofits since start year 0 indicated had lighting systems upgrades	Installed LED pot lights in renovated washrooms to reduce over-lamping and reduce energy (10 washroom locations).	FACILITIES - Install 100 LED (10 watt) bulbs in the Coquitlam bookstore, replacing 100 - 75W PAR 30 bulbs. FACILITIES - Standard practice is to continue including lighting system upgrades during any renewal/retrofit work.	1996	No End Date (Continuous)		
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	% of retrofits since start year on indicated had control system upgrades or adjustments	Retrofitted 19 VAV boxes from pneumatic to DDC control. Implement heat recovery programming on heat exchangers (AHU-5 to 10) at the Coquitlam campus.	FACILITIES - Once CO2 sensors have been installed, implement programming to control fresh air based on demand. This will reduce energy costs to heat and cool fresh air. FACILITIES - Standard practice is to continue including control system upgrades during any renewal/retrofit work.	1996	No End Date (Continuous)		
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	% of retrofits since start year indicated had insulation improvements	In a re-roofing tender for 2010, included option to add GREEN roofing (NW campus) to reduce solar gain in summer.	FACILITIES - Standard practice is to consider insulation improvements during any renewal work.	1996	No End Date (Continuous)		
IT power management								

Action	Status (as of 12/31/10)		Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Install power management software which shuts down computers outside of regular business hours	Completed in 2010	100	% of computers shut down automatically outside of regular business hours	IT - Implemented power management software to all public and lab computers. All current licenses are used.	IT - Investigate the same software in staff, faculty, and office settings to see if their environment will be a fit for what the software will do.	2009	No End Date (Continuous)
Implement server virtualization	Ongoing/In Progress	60	% of servers have been virtualized since start year indicated	IT - Continue with the plan to virtualize all "non-critical" servers in our environment.	IT - Increase virtualization to all servers that will not impact performance and user expectations.	2007	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	80	% of computers have auto-sleep settings applied	IT - Rolling out new computers that have auto-sleep settings enabled.	IT - Insure that any new device we install have these settings enabled.	2005	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	In Development			IT - New MFU contract to be handed out through RFP Process.	IT - Newly awarded contract should provide us the means to add printer functionality to MFU's, thus easing the demands for additional print units.	2010	No End Date (Continuous)
			o, (1)	IT - Continue to apply settings to all new and discovered devices.	IT - Strive towards 100% implementation.		
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress	60	% of devices have auto-sleep settings applied	PRINT SHOP - In the Print Shop, machinery either goes into sleep mode or is now turned off.	PRINT SHOP - When purchasing new equipment, sleep mode will be a requirement for new duplicators.	2007	2013
Devilees constitute with SNEDCY STAD models during regular			0/ of commutate are ENERGY	IT. Our outement is really compared and as are increasing the annual consequence	IT - Strive towards 100% implementation.		
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	80	% of computers are ENERGY STAR rated	IT - Our automatic replacement cycles are increasing the numbers of Energy Star ratings throughout the College.	PRINT SHOP - When purchasing new equipment, sleep mode will be a requirement for new duplicators.	2006	2013
Appliances and electronic devices							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	In Development	0	% of fridges are ENERGY STAR rated		PURCHASING - Where economically feasible, replacement refrigerators will be ENERGY STAR models.	2010	No End Date (Continuous)
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	In Development				PURCHASING - Where economically feasible replace other appliances with ENERGY STAR models.	2008	No End Date (Continuous)
Other Stationary Fuel Combustion and Electricity Actions							
Complete a Heating Plant Efficiency Report	Completed in 2010			A report was commissioned to investigate the efficiency of the heating plants and to identify potential energy and GHG reduction opportunities.		2010	2010
Prepare a plan to implement, where feasible, heating plant upgrades	In Development				FACILITIES - Work with Stantec Engineering to prioritize and schedule works on the heating plants (to reduce energy & GHG emissions). Further work contingent on available funding.	2011	2013
IT installed Global Viewer application that turns off classroom presentation technologies at midnight	Ongoing/In Progress	50	% of classrooms GV enabled	Installed 40 Extron room controllers with IP connections.	IT - Install another 40 controllers.	2007	2012
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	7	% of total paper purchased contains 30% recycled content	Researched costs associated with 30% recycled content - a 7% cost increase was determined.	PURCHASING - Starting fiscal 2011, all new paper will include requirement for a minimum 30% recycled content.	2008	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	0	% of total paper purchased contains 100% recycled content	Researched costs associated with 100% recycled content - a 40% cost increase was determined.	FACILITIES - Will continue to monitor industry costs of 100% post-consumer recycled paper .	2008	No End Date (Continuous)

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Printer/document settings						
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	% of network printers or 25 photocopiers are set to automatic double-sided	PURCHASING - No action for Photocopiers in 2010. IT PRINTERS-All public area, staff, and lab printers are set to duplex printing as default. PRINT SHOP - 99% of all Coursepack development is double sided duplication.	PURCHASING - A Request for Proposal (Photocopiers) is scheduled for issue in 2011. Included in the bid document will be specifications for automatic double sided copying. IT PRINTERS - Provide duplex printing options to all other users. Encourage and communicate to staff the benefits of duplex printing. PRINT SHOP - Both the Print Shop and Coursepack areas will continue to promote 100% double sided duplication.	2009	2012
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	In Development			IT - Check to see what areas we could effectively do this in.	2010	2010
Reduce default margin size in standard document templates (e.g., letters, briefing notes, forms, etc.)	Ongoing/In Progress		PRINT SHOP - Where practical, the Print Shop Staff recommends cost saving measures to clients.	IT - No controls found to implement this to users. PRINT SHOP - Monitoring of print jobs will continue to maximize efficiency.	2008	No End Date (Continuous)
Electronic media in place of paper						
Use electronic document library for filing common documents	In Development		PRINT SHOP - Print Shop has been actively promoting the use of Digital Store Front, reducing the amount of hard copy submissions and electronically storing documents for additional print on demand requests.	PRINT SHOP - Will continue to promote digital submissions with the goal of eliminating paper submissions.	2009	No End Date (Continuous)

Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act.* Public sector organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/10)		Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Business Travel							
Virtual meeting technology							
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	3	% of computers have web- conferencing software installed	We have moved to a web-based conferencing system (Elluminate). Campus-wide site licence. Client self-installs as needed.	Continue training users to make best use of this application. Build it into College learning management system for student use also.	2008	2012
Make desktop web-cameras available to staff	Ongoing/In Progress	5	% of staff have access to a desktop web-camera	Purchased and deployed additional web-cameras.	IT - Purchase and deploy additional web-cameras.	2005	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	10	% of meeting rooms have access to video-conferencing equipment	Renewed one out of three video-conferencing systems in operation. Added two more rooms.	IT - Purchase and deploy more video-conferencing units for meeting rooms.	Started before 1995	No End Date (Continuous)
Behaviour change program							
Train staff in web-conferencing	Ongoing/In Progress	10	% of staff are trained web- conferencing	Provided training to staff on as needed basis.	IT - Provided training to staff on as needed basis.	2005	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress	100	% of staff are trained in video- conferencing or have access to technical support	Continued to provide technical support for video-conferencing set-up.	IT - Continue to provide technical support for video-conferencing set-up.	Started before 1995	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress			Assist Faculty when considering online presentations/courses by hosting the following events: - Building Online Learning Communities: Effective Strategies for the Virtual Classroom - Lessons from the Cyberspace Classroom: The Realities of Online Teaching - What is MERLOT? The Multimedia Educational Resources for Learning and Online Teaching - Choosing & then Getting Creative with Workable Online Technologies - Designing Blended (Hybrid) Learning Courses	Continue to provide training and support online learning.	2000	No End Date (Continuous)
Encourage carpooling to meetings	In Development				Add "Green Commuting Tips" to Employee Newsletter.	2010	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Employee Relations provides new employees information on Employer Transit Pass.	Add "Green Commuting Tips" to Employee Newsletter.	2010	No End Date (Continuous)
Education, Awareness, and Engagement							
Team-building							
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	In Development			The College President formed a "Environmental Sustainability Initiative" team.	Continue meeting as needed.	2010	No End Date (Continuous)
Staff Professional Development							

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress		Facilities Manager attended the three day "PowerSmart Forum."	As requested, continue to provide PD opportunities for College employees.	Started before 1995	No End Date (Continuous)
Staff awareness/education						
Provide education to staff about the science of climate change	In Development			MCO - Develop a Climate Change Information & Green Tips location on the College Blog, Twitter and website locations.	2011	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	In Development			MCO - Develop a Climate Change Information & Green Tips location on the College Blog, Twitter and website locations.	2011	No End Date (Continuous)
Provide green tips on staff website or in newsletters	In Development			MCO - Develop a Climate Change Information & Green Tips location on the College Blog, Twitter and website locations.	2011	No End Date (Continuous)
Client/public awareness/education						
Provide education to clients/public about the science of climate change	In Development			MCO - Develop a Climate Change Information & Green Tips location on the College Blog, Twitter and website locations.	2011	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	In Development			MCO - Develop a Climate Change Information & Green Tips location on the College Blog, Twitter and website locations.	2011	No End Date (Continuous)
Provide green tips on client/public website or in newsletters	In Development			MCO - Develop a Climate Change Information & Green Tips location on the College Blog, Twitter and website locations.	2011	No End Date (Continuous)
Other Sustainability Actions						
Water conservation						
Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features	Ongoing/In Progress		FACILITIES - Continue implementing water potable water management where fixture replacements are scheduled. Converted 10 washroom locations with low flow toilets, urinals and .5 gpm hands free faucets (NWC). Converted main change room showers to low flow showers (NWC). Converted 22 faucets to low flow hands free faucets (DLC).	FACILITIES - Continue to convert balance of flush valves at the NW campus to low flow fixtures.	2009	No End Date (Continuous)
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Ongoing/In Progress		FACILITIES - When completing any infrastructure work, Facilities Services has an informal stormwater management strategy. Installed an extensive green roof on the third floor roof decks throughout the New Westminster campus.	When completing site works and where feasible, will introduce new or additional stormwater management strategies.	2010	No End Date (Continuous)
Waste reduction/diversion						
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress		No new steps taken in 2010.	When feasible, will investigate additional (new) opportunities to reduce and/or divert building waste.	1996	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		No new steps taken in 2010.	The College will continue to reduce hazardous waste where possible. Where not possible, hazardous waste will be sent to hazardous waste disposal contractors.	1996	No End Date (Continuous)
Procurement (non-paper supplies)						

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress		BOOKSTORE - The Bookstores offered more recycled products and clothing items that contain recycled content.	PURCHASING - To be reviewed/included in the new Purchasing department procedures. BOOKSTORE - Where feasible, the stores will continue to procure recycled content products for customer purchase.	2010	No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	In Development			PURCHASING - To be reviewed/included in the new Purchasing department procedures.	2012	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress	Increase use of bio-degradeable food containers 30 Increase use of "Green" cleaning products	No new steps taken in 2010.	FACILITIES - Investigate use of biodegradable trash bags. FACILITIES - As needed, investigate other cleaning products for possible conversion.	2009	No End Date (Continuous)
Indoor air quality						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		In areas where sensitivities exist, the College supports "Scent Free" zones.	When requested by hyper-sensitive employees, continue to support and/or accommodate "Scent Free" zones.	2000	No End Date (Continuous)
Incorporate low volatile organic compounds (VOCs) standards into procurement policy for products such as paints, carpets, and furniture Commuting to and from home	In Development		PRINT SHOP - The Print Shop continues to use soya based products and cornstarch anti-offset powder.	PURCHASING - To be reviewed/included in the new Purchasing department procedures. PRINT SHOP - Where possible, the Print Shop will continue to review products to introduce 'friendly' environmental products.	2010	No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress		The college offers staff the opportunity to "Go Green". They are provided a semester allowance and can either purchase a parking pass, bus pass or save the allowance and walk to work. Douglas College continues to be a member of the "Translink Employer Pass Program". This program offers discounted annual transit passes to their employees. In conjunction with other Public Sector Institutions, entered into negotiations with Translink & the Ministry of Transportation, to join the Student U-Pass Program.	As applicable, maintain the Go Green & Employer Pass programs for College employees. With the successful completion of negotiations, the U-Pass program will be implemented effective September 2011.	Started before 1995	No End Date (Continuous)
Modify parking fees or parking availability for staff/students	Ongoing/In Progress		The college offers staff the opportunity to "Go Green". They are provided a semester allowance and can either purchase a parking pass, bus pass or save the allowance and walk to work.	Maintain the Go Green opportunity to staff.	Started before 1995	No End Date (Continuous)
Other Sustainability Actions						
Reduce the amount of plastic in the work place	Ongoing/In Progress		BOOKSTORE - For customer purchases, introduced cloth bags to replace the common plastic bag.	BOOKSTORE - Eliminate all plastic bags and encourage the re-use of the cloth bags.	2010	No End Date (Continuous)