

## Carbon Neutral Action Report Simon Fraser University

### Executive Summary

In 1990, SFU was one of the early signatories of the Tallories Declaration ([www.ulsf.org](http://www.ulsf.org)) which committed universities to taking action on the environment. In 2008, SFU renewed this commitment by signing the University and College Presidents' Climate Change Statement of Action for Canada outlining broad areas that the university would take action on climate change. In the first of four Reports to the Community in 2007/08 ([www.sfu.ca/report2007](http://www.sfu.ca/report2007)), SFU's President focused on the Environment (Fuel for Change: Rethinking the Environment), stating SFU will continue to lead by example, both in contributing leading edge cross-disciplinary environmental research as well as adopting green operational practices.

Throughout 2008, the Sustainability Advisory Committee (SAC) (formed of faculty, senior administration and student representatives) organized educational sessions throughout SFU's 3 campuses to raise awareness on climate change and energy conservation. SAC's Sustainability Ambassador program focused on engaging the community in energy and carbon reduction initiatives. SFU also completed an inventory of its 2007 GHG emissions to set a baseline for GHG management and to identify reduction opportunities. SFU is currently implementing Smart Tool reporting of its 2007 GHG emissions.

### Objectives

1. New SFU buildings will be built to LEED Gold
2. SFU will develop green building guidelines to guide standard practices
3. Existing buildings will aim to reduce energy use by 2% for 2009 through systems optimization and community engagement
4. SFU Procurement Services will develop a plan/framework by 2010 for sustainable procurement best practices
5. Food Services will work towards increasing sustainable and local food choices on Burnaby campus
6. Parking Services will increase on-campus bike facilities to promote cycling to Burnaby campus
7. The SAC will continue working to integrate sustainability and environment into academic curriculum

## Part 1: Actions Taken to Reduce Greenhouse Gas Emissions in 2008

### Overview

In 2008, SFU conducted an inventory of its 2007 GHG emissions from stationary sources (buildings), mobile sources (fleet) and 8 -1/2 x 11 paper. This inventory was done by a consultant and findings were verified by a third party. The major source of SFU emissions organization wide are related to the combustion of natural gas for heating and service hot water, with the aging heating plant at Burnaby campus identified as the single largest source for potential reduction potential. Options currently being reviewed include district energy systems and/or a new boiler plant which might include fuel switching to renewable fuels. The boiler plant has been identified as a priority project in the Capital Plan. Other actions taken in 2008 include expansion of digital demand controls (DDC) systems to improve efficiencies in existing HVAC systems, as well as building system audits of two buildings undertaken through BC Hydro's continuous optimization program.

Lighting projects underway include: install LED fixtures, replace 32W fixtures with 28W fixtures and install occupancy sensors in public washrooms and classrooms. A Turn it Off campaign was carried out in Fall 2008 with the support of the Sustainability Advisory Committee and a volunteer network of Sustainability Ambassadors (see [www.sfu.ca/sustainability](http://www.sfu.ca/sustainability)).

Two solar demonstration projects were also installed at SFU Burnaby campus: a solar thermal (hot water) project and a solar electric (photovoltaic array) have been installed at Facilities Services building. The energy data is being collected to determine the potential for solar as a renewable source of energy on Burnaby campus.

## 1.1 Mobile Fuel Combustion

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In progress	A small electric truck was purchased by Facilities Operations as a pilot	If successful, the pilot will be expanded to a gradual electric and hybrid vehicle replacement program
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In progress	Improved fuel efficiency	Vehicles are regularly checked and maintained in Facilities' vehicle maintenance program
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	In progress	Fuel conservation and reduced environmental impacts	Operators are instructed to avoid leaving vehicles idling at their destinations.
Encouraged car pooling in fleet vehicles	In progress	Reduced fuel consumption	Not always feasible as maintenance crews are dispatched when called to respond ASAP around campus.
Encouraged use of public transit/active transportation	Complete	A U-Pass program for students has been in place since 2003. Promotion of cycling include Bike to Work events at SFU in Burnaby campus and program to inventory and add bike racks on campus.	A U-Pass program for Staff and Faculty has been proposed for some time but currently, TransLink does not have the capacity to support this. For Bike to Work 2008, SAC provided planning support for about 60 cyclists (many first time) as well as a pancake breakfast, valet bike storage, and distributed information such as bike maps. A "buddy" system was also introduced to encourage first time cyclists up Burnaby Mountain.
Encouraged alternatives to travel in fleet vehicles – bicycles, scooters, electric carts	In progress	See Part 2.1	Staff encouraged to walk to sites on campus where ever feasible.
Changed from gas to electric lawn maintenance equipment	In progress	Switching to alkyl ate gasoline if possible	Use of alkyl ate gasoline improves machine performance of small gasoline-run equipment and produces less fumes, resulting in reduced health risks to operators. Higher cost.
Changed to manual lawn and yard maintenance equipment			Facilities Operations has reviewed this option with the landscape contractors but implementation on the campus scale has been too costly for adoption
Encouraged natural landscaping	In progress	Reduced need for mowing and reduced fuel consumption	Natural landscapes and Xeriscapes encouraged

## 1.2 Stationary fuel combustion and electricity

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Undertaken workstation tune-ups to help staff understand what they can do to reduce personal energy use		Energy savings	Network Services
Undertaken Monitor turn-off challenge	Complete	Energy savings	Part of SAC's Turn it Off campaign Fall 2008: monitors turned off when user is away from their workstations
Replaced # computers with EnergyStar models	In Progress	Energy savings	Most computer monitors purchased at SFU are EnergyStar rated. Laptops (using less energy than desktop PCs) are also popular.
Asked staff to close blinds daily	In Progress	Energy savings	Part of SAC's Keep Heat In campaign Winter 2008/09: blinds are closed at the end of the day
Encouraged staff to use stairs	In progress	Energy savings	Part of initiatives on health promotion as well as energy conservation campaigns, (including reviewing suggestions to shut down escalators off peak at Surrey campus).

Turned off lights in unused rooms	Complete	Energy savings	Part of SAC's Turn it Off campaign Fall 2008: staff asked to turn off their office light when they are away for more than an hour
Replaced other appliances (with EnergyStar rated appliance)	In Progress	Energy savings	Network Services and SFU Microcomputer store, etc. encourage selection of Energy Star rated equipment wherever possible
Installed multi-function devices (and removed stand-alone printers/faxes)	In Progress	Energy savings	Printing devices purchased are generally multi-functional
Replaced standard bulbs with CFLs	Complete	Energy savings	Lighting retrofit completed with T-8s
Installed motion activated lights	In progress	Energy savings	Motion sensors have been tested at various locations (Public washrooms, classrooms) in preparation for campus wide program currently being implemented.
Undertaken lighting retrofit	Complete	Energy savings	The results of SFU Burnaby campus' \$3M energy lighting retrofit program carried out between 2003-2005 was verified in 2007 by BC Hydro to save 5,995,000 kWh per year. In the past two decades, SFU's energy conservation strategies and Power Smart initiatives have resulted in more than \$25 million in cost avoidance (Facilities Services).
Implemented server virtualization	In progress	Energy savings	BC Hydro calculated savings of 489,796 kWh/year with 55.91 demand reduction from a combination of physical servers that have been virtualized, servers converted to blade server technology and new virtual servers installed.
Utilized desk-top power management settings on computer	In progress	Energy savings	LAN administrators install local power management software/settings wherever possible
Initiated corporate computer shut-down/wake-up for maintenance	In progress	Energy savings	Network Services manages the system to optimize computer operations.
Unplugged unused equipment	In progress	Energy savings	Part of Turn it Off campaign Fall 2008. Ongoing energy conservation initiatives include participation in Earth Hour.
Applied for LEED existing building rating	In progress	Energy savings	LEED ratings are used to guide decisions in renovations
Undertaken building energy audit at LOCATION(s)	In progress	Energy efficiency opportunities identified	Potential projects identified through BC Hydro's Continuous Optimization project as well as SFU's Energy Management Program (2004). List of energy projects compiled including: South Science Building, Applied Science Building, Shrum Science Biology, East Gym and West Mall Complex

Initiated or completed a building energy retrofit	In progress	Energy savings	Every year, energy retrofit projects that have passed business case analysis are implemented by Facilities Operations. Examples of past projects include RC Brown: additional thermal insulation to underside of exposed concrete floors; Academic Quadrangle: heating controls added and variable frequency drives to improve performance; West Mall: modified kitchen hood exhaust system; Applied Science Building: installed heat exchangers between condenser water and chilled water systems; Swimming Pool: installed glycol heat recovery/dehumidification system, etc.
Digital demand controls Upgrades	In progress	Energy savings through scheduling of power and heat to match functional space use.	Current DDC systems are being expanded with implementation of upgraded DDC systems and improved control strategies such as space zoning, time of day usage patterns, and partial shutdowns during under-utilized time periods.
Mechanical equipment maintenance excellence Program	In progress	Building systems optimized to maximize energy efficiency	Operators provide regular monitoring and maintenance of central heating system and generators to keep performance at the highest level of efficiency
Energy Management Program	In progress	Energy management program helps to strategically plan and manage for optimal building systems performance and to identify energy projects for implementation as funding permits	In recognition of SFU's exemplary self-initiated energy management program, SFU received a Natural Resources Canada's Energy Conservation in Existing Buildings award in 2007/08.
BOMA Go Green certification	Complete	Increased awareness of environmentally responsible practices in operational practices	In 2008, SFU became the first North American post-secondary institution to receive Go Green certification from the Building Owners and Managers Association of Canada for 26 existing academic buildings on Burnaby campus.
Keep the heat in campaign	Complete	Community engagement in energy conservation	SAC's Sustainability Ambassadors (SA) carried out campaigns to engage the community in GHG reduction initiatives

<b>1.3 Supplies</b>			
<b>Action</b>	<b>Action Taken</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>
Committed to use 30% recycled paper	In progress	Reduced environmental impact	Currently, some departments are still ordering non-recycled paper. As inventory runs out, it will gradually be replaced with 30% recycled when time to re-order, based on demand.

Initiated automatic double sided printing	In progress	Reduced paper consumption	Most university printers have the capability to print double sided. SAs work to assist users in their departments encourage double sided printing and to change default settings on printers as well as to change accepted norms. Students are encouraged to check with their instructors to accept double sided printing of student papers.
Changed document template margins	Complete	Reduced paper consumption	SFU Standardized templates released in 2007 (with new SFU logo rebranding) incorporate page margins adjusted to decrease white space
Developed document library (online and one printed copy) for large documents	In progress	Reduced paper consumption	Facilities Services has eliminated printing of multiple sets of building floor plans annually (normally distributed to departments across campus annually). Drawings are now posted online and downloaded by users on as required basis ( <a href="http://www.sfu.ca/cpd">www.sfu.ca/cpd</a> )
Used collaborative software to edit on-line	In progress	Reduced paper consumption	Various educational sessions held throughout the year on PDF and other software to introduce and promote online collaboration and editing.
Re-used non-confidential scrap paper	In progress	Reduced paper consumption and waste	Document Solutions re-uses scrap paper into bound note pads
Used laptops/tablets	In progress	Reduced printing with note taking on laptops	The campus is wireless and many students use laptops
Restructured a process to use less paper	In progress	Reduced paper consumption	Multiple administrative processes have been adapted to avoid the need for hard copies, e.g. submitting catering orders to Chartwells can now be done online, requests sent to Records Management for printing of drawings can be submitted by email, Facilities has instituted processes to submit Work Orders online, etc.
<b>Actions on non-paper related supplies:</b>			
Purchased cradle to cradle goods	In progress	Reduced waste in renovations	SFU has a preferred buying agreement with Calstone Office Furnishings which takes back surplus office furniture to their plant to be refurbished into new pieces.
Chose "Green" items from Distribution Centre	In progress	Reduce waste and reduced environmental impact	Corporate Express supplies office supplies to all departments and has worked with SFU to highlight the ecOffice label identifying environmentally preferred product lines.
Encouraged re-use of furniture and equipment	In progress	Reduced waste of surplus furnishings	Central Stores retains surplus items in good condition in its Stores area and departments are free to re-utilize these items wherever required

Implement DocuShare to centralize filing and reduce multiple printing	In progress	Reduced paper consumption by centralizing records on shared networks	Xerox DocuShare enterprise software for centralising filing on the network will help eliminate duplication and multiple copying; various departments (including Facilities Services) are reviewing this software for adoption, pending funding.
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#### 1.4 Employee Engagement

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Provided climate change education	In progress	Community engagement in energy conservation and awareness of impact on the carbon footprint	Education sessions on environment, climate change and energy management topics. See <a href="http://www.sfu.ca/sustainability">www.sfu.ca/sustainability</a> additional resources placed in website with links for further reading.
Provided conservation education	In progress	Community engagement in energy conservation	New tools regularly being developed for Sustainability Ambassadors to use in conservation education in their departments. To identify energy consumption of individual buildings/departments, additional meters are required.
Held contests to change behaviour/make pledges	In progress	Community engagement in energy conservation	SAC holds X-treme Green challenges to cut down on paper, turn it off challenges, etc.
Held contests/support to generate ideas	In progress	Community engagement in energy conservation	Online discussion groups and blogs have been set up for exchange of information and ideas
Developed Green Teams	In progress	Community engagement in energy conservation	Growing # of Green Teams: Residences, Career services, Education, and the Library already have Green Teams.
Supported Green Teams (resources)	In progress	Community continues to stay engaged in energy conservation	Sustainability Coordinator hold regular meetings with Green Teams to provide support and resources
Provided green tips	In progress	Education and capacity building	The Sustainability Coordinator sends out weekly e-blasts to SAs with tips and news; new resources and newsletters added to website regularly
Supported professional development	In progress	Education and capacity building	Sustainability Ambassadors attend 2 mandatory educational sessions per semester, and are invited to Lunch and Learn sessions. Ambassadors have also been offered specialised training in Energy (PowerSmart) workshops.
New employee orientation	In progress	Community engagement and SA recruitment	SAC chair meets with new staff and faculty at HR orientations to stress sustainability values at the university
New student orientation	In progress	Community engagement and recruitment	The Sustainability Coordinator meets with new students at welcome new student events each semester and at other events such as Club Days

### 1.5 Sustainability Actions (others)

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Took water conservation measures – low flow showers or toilets, fix leaks	In progress	Reduced water consumption	Gradual implementation by replacing with water efficient fixtures as retrofits of washrooms occur; new buildings are built with water efficient fixtures.
Reduced/replaced bottled water with filtered or refrigerated water	In progress	Waste reduction and reduced GHG from transportation; bulk water deliveries replaced with tap water	SFU cut \$60,000 from budgets designated for bulk water deliveries to departments
Improved recycling measures	In progress	Waste reduction	Extensive recycling management program has been in place at SFU since early 1990's: mixed glass containers, recyclable plastics (# 1, 2, 4 and 5, soft plastics and shrink wrap), returnables like pop cans and bottles, mixed papers, cardboard, batteries, used oil, etc.
Supported composting	In progress	Waste reduction	Dining Services and Residences have implemented an organics composting program.
Used re-usable dishes	In progress	Waste reduction	Dining Services and Residences switched to china and for other catering services, china can be requested as an option.
Purchased green cleaning products	In progress	Improved interior air quality	Facilities Operations encourages increased use of green cleaning products where ever possible
Used green (low-e paints)	In progress	Reduced VOCs	Under review for performance
Supported sustainable procurement practices	In progress	Sustainability institutionalized into SFU practices	SFU Ethical Purchasing Policy AD 11-21 adopted in 2005
SFU signed the University and College Presidents' Climate Change Statement of Action for Canada in 2008	Complete	Provided leadership to the community and demonstrated SFU's institutional commitment to taking action on climate change	
Raise public awareness of sustainability at the SFU Burnaby Open House in June and the SFU 2008 Sustainability Fair in October	Complete	Raise awareness in the university community on sustainability topics and importance of conservation activities.	Successful student organised fair that has run for 2 years in a row, with talks, display booths as well as a market for green consumer products. The winner of the Greenest Individual in the World contest was announced at the Fair.
Participate in Earth Hour 2008	Complete	Raise awareness in the community and engage the community in energy saving activities	
Adopted Sustainability Policy GP38	Complete	Sustainability Policy ( <a href="http://www.sfu.ca/policies">www.sfu.ca/policies</a> ) commits SFU to providing leadership in all areas of sustainability	
Implement Sustainability Ambassador Program	In progress	The Sustainability Advisory Committee (SAC) supports and oversees campus wide sustainability programs	
Obtain certification under BOMA GoGreen program	Complete		Facilities Operations demonstrates environmental best practices, recognized in BOMA Canada's Go Green certification.

**Part 2: Plans to Continue Reducing Greenhouse Gas Emissions 2009 -- 2011**

**Overview**

SFU GHG 2007 emissions inventory identified heating of facilities as the single biggest source of reduction potential for GHG emissions. SFU has been actively investigating various options for fuel switching, including a district heating system and building of a new biomass gasifier heating plant. Campus heating systems are significant cost elements and SFU is currently seeking funding support from government to pursue these initiatives.

At the same time, projects have been identified that would improve energy performance, including: HVAC upgrade projects in the RC Brown and Academic Quadrangle buildings; geo-exchange projects in Shrum Sciences and Alcan Aquatic centre; solar hot water projects proposed for the Gymnasium and the WAC Bennett library.

Altogether, these energy projects could reduce SFU's GHG emissions by 943 tonnes. Application to PSECA was made in 2008 for funding assistance to carry out these projects.

**2.1 Mobile Fuel Combustion**

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In progress	Purchase and test an electric vehicle to test viability for fleet	Facilities Operations is launching a fleet replacement program replacing with hybrid or electric vehicles as feasible. The current use and purposing of the vehicle fleet is being reviewed to reduce the size and type of the vehicle fleet. As well, Operations is reviewing use of hybrid and electric vehicles as well as alternative fuels such as ethanol E85.	Ongoing
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	Planned	Reduce fuel consumption	Facilities Operations is reviewing regular maintenance schedule of its fleet vehicles to ensure optimal performance of all vehicles	Ongoing
Encourage use of public transit/active transportation	Planned	Ongoing discussions with Translink, City of Burnaby and UniverCity on transit improvements and planning for a new transit loop	Innovative options being investigated include a gondola system that would take students from the Skytrain station up to Burnaby Mountain campus.	Ongoing
Reduce emissions from commuter travel by encouraging carpooling	In progress	SFU Parking Services continues to administer and promote Jack Bell Foundation Ride share and Van Pool programs (available to all SFU users with an SFU email address)	See <a href="http://sfu.ride-share.com">http://sfu.ride-share.com</a>	Ongoing
Reduce emissions from commuter travel by encouraging car sharing	In progress	SFU Parking Services continues to provide support and liaison for Co-op Auto Network cars on campus and is reviewing sponsorship for the placement of Co-op cars on campus	Sponsorship as funding permits.	Ongoing
Support cycling as an alternative transportation mode by providing end of trip facilities such as bike lockers	Planned	SFU Parking Services evaluating bike lockers to bring onto campus.	Program implemented as funding permits.	Pending funding
Reduce emissions from fleet vehicles by use of alternative fuels and hybrids	Planned	Planned staged replacement strategy for fleet vehicles	Electric vehicles being tested. Funds are not available currently to support full conversion of the fleet	Pending funding



## 2.2 Stationary Fuel Combustion (including electricity)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Undertake workstation tune-ups to help staff understand what they can do to reduce personal energy use	In progress	Improved energy efficiency and thermal comfort	SAC is developing education materials and guidelines to inform users on how they can use their workstation equipment most efficiently. Network Services is gradually moving towards "thin client" concept that will also save on energy consumed by PCs at workstations.	Ongoing
Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In progress	Energy savings	Central Stores is preparing recommendations on power bars and discussing preferred pricing options for purchase from SFU's office equipment supplier	Ongoing
Replace # computers with EnergyStar models	Planned	Energy savings	Procurement Services to review and set procurement standards to incorporate EnergyStar requirements	Pending
Turn off lights in unused rooms	In progress	Energy savings	SAC and Facilities working to engage community on energy conservation; refining educational tools for Turn it Off campaign (prompts, posters, training for Sustainability Ambassadors)	Ongoing
Replace other appliances (with EnergyStar rated appliance)	Planned	Energy savings	Procurement Services to review and set procurement standards to incorporate EnergyStar requirements wherever possible	Pending review
Install multi-function devices (and remove stand-alone printers/faxes)	Planned	Energy savings	Facilities Services and SAC are in discussions with Xerox sustainability representatives to identify asset optimization strategies to minimize energy use and paper	Ongoing
Install motion activated lights	In progress	Energy savings	Motion sensors being installed in public washrooms and classrooms	Sep-09
Undertake lighting retrofit	In progress	Energy savings	Replacing 32W bulbs with 28W bulbs for additional savings. Residences Lighting retrofit project identified as potential future project (est. electrical savings of 622,000 kWh)	Ongoing
Implement server virtualization	In progress	Increased energy efficiency	Network Services has saved an estimated through server virtualization. Progress as funding and needs permit.	Ongoing
Utilize desk-top power management settings on computer	In progress	Energy savings	Reduced energy use by powering off/Implement desktop power management where ever possible.	Ongoing
Initiate corporate computer shut-down/wake-up for maintenance	In progress	Energy savings	Network Services has evaluated several software but functional requirements for security and backup remain to be resolved	Ongoing
Unplug unused equipment	In progress	Energy savings	Educate community on phantom energy loss; energy meters and energy tool kits have been supplied by Facilities for loan from Library and can be used by community members to identify power draw of individual equipment	Ongoing

Undertake building energy audit at LOCATION(s)	Planned	Energy saving opportunities identified	Study energy performance of older buildings to identify energy conservation opportunities (e.g. South Sciences and Applied Science Buildings and Academic Quadrangle Building).	Pending funding
Initiate or complete a building energy retrofit	Planned	Energy savings through increased energy efficiency	Improved energy performance / Implement energy projects where ever possible. Planned retrofit of Shrum Chemistry and Data Centre	Pending funding
Investigate feasibility of district heating system and fuel switching	In progress	Reduced GHG emissions through fuel switching and/or improved energy efficiency	Assessing alternative high efficiency district heating systems for Burnaby campus including a biomass heating plant, purchased green energy and electric boilers.	Pending funding
Upgrade specialty lighting on campus	Planned	Increased energy efficiency	Review and recommend alternative specialty lighting products e.g. retail and dining areas	Pending funding
Reduce Main Boiler Plant Operating hours during summer months	Planned	Energy savings	Investigating start up of satellite boilers during summer months for domestic hot water usage to shut off part of main distribute hot water loop. This will reduce operating hours for the Main Boiler plant and increase efficiency	Pending funding
Switch chiller loop for one chiller operation during shoulder seasons	In progress	Energy savings	This control strategy saves electricity by only engaging one smaller chiller to run the air conditioning systems for the TASC 1 & TASC 2 buildings.	Jun-09
Campaign to close doors and windows	In progress	Energy savings	Reduce energy escaping from the buildings in Keep Heat In campaign and implementing community based social marketing (CBSM) strategies for behavioural change.	Ongoing
Upgrade lighting fixtures with LED and high performance lighting	In progress	Energy savings	Replacing 32W fluorescents with 28W fluorescents for additional savings, implemented as part of fixture replacement, program to install LED street lights, etc.	Ongoing

## 2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Commit to use 30% recycled paper	In progress	Reduction or elimination of non-recycled paper stock (special orders for custom printing needs maybe required)	Central Stores will investigate orders for non-recycled paper to identify if switching to recycled paper is viable	Fall 2009
Commit to use 100% recycled paper	Planned	Increase use of 100% recycled paper	SAC will work with Facilities and Document Solutions to investigate barriers to use of 100% recycled paper, e.g.. Some photocopiers cannot accept 100% recycled paper without jamming	Pending review
Initiate automatic double sided printing	In progress	Reduced paper consumption	Sustainability Ambassadors to do visual survey of the equipment in their departments to measure success	Ongoing
Commit to hold paperless meetings	Planned	Reduced paper consumption for printing	Issue agendas and meeting minutes only by email and conduct meetings with minimal paper use to change norm	Pending review
Develop document library (online and one printed copy) for large documents	Planned	Reduced paper consumption for printing	Create searchable database of building information to eliminate the need for multiple printing of copies for reference, and replace with printing only on an as required basis	Ongoing

Use collaborative software to edit on-line	Planned	Reduced paper consumption	Include education on collaborative tools as part of Sustainability Ambassadors paper campaign planned for summer 2009	Summer/Fall 2009
Re-use non-confidential scrap paper	In progress	Reduced paper consumption	Institute practices to collect and distribute to departments non-confidential single sided paper for reuse (e.g. Mathematics require paper for instructional purposes and collects used paper)	
Use laptops/tablets	In progress	Reduced paper consumption	SAC and Facilities to follow up with Network Services to assess #s of computers on campus, #s of laptops vs. PCs purchased at SFU Microcomputer Stores, etc. to design future campaigns	Fall 2009
Restructure a process to use less paper	Planned	Reduced paper consumption	Facilities is investigating integrating TMA (work order system) online to eliminate the need for paper copies to submit work orders or to report on progress	Ongoing, pending funding
<b>Actions on non-paper related supplies:</b>				
Purchase cradle to cradle goods	In progress	Reduced waste to landfill	Calstone (office furnishings vendor to SFU) takes back surplus furniture to its factory for refurbishment	Ongoing
Choose "Green" items from Distribution Centre	In progress	Reduced environmental impact	Corporate Express (office supplies vendor to SFU) actively promotes its ecOffice products (Corporate Express' "green" office supplies label) to SFU administrators and buyers	Ongoing
Encourage re-use of furniture and equipment	In progress	Reduced waste to landfill	Central stores holds and stores surplus furniture and equipment for reuse	
<b>2.5 Employee Engagement</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Provide climate change education	In progress	Increased awareness and support for climate change actions	Continue public lecture series on climate issues/ hold one session per semester	Ongoing
Provide conservation education	In progress	Increased awareness and support for energy conservation initiatives	Continue to develop education sessions as part of community based social marketing campaigns/survey Ambassadors for feedback on campaigns every semester	Ongoing
Hold contests to change behaviour/make pledge	In progress	Community engagement and awareness	Integrate contests as part of each SA campaign/run one contest each semester	Ongoing
Hold contests/support to generate ideas	In progress	Community engaged in solving energy and climate change	SA s generate and test new ideas for campaigns, aiming for at least one each semester	Ongoing
Develop Green Teams	In progress	Community engagement in energy conservation	Growth in # of Green Teams in departments	Ongoing
Support Green Teams (resources)	In progress	Sustained community engagement	Facilities and SAC are working to develop and/or refine resource packages on green topics	Ongoing

Provide green tips	In progress	Capacity building throughout the university	Build and maintain Sustainability website as a reliable source for Green Tips and information	Ongoing
Support professional development	In progress	Capacity building	Regularly post and advertise lectures and green events by email and on website	Ongoing
Participate and promote events such as Earth Hour 2009	In progress	Community engagement	Participate in green events such as Earth Hour to promote awareness of climate issues within the University Community. Report on energy savings achieved through these activities	Ongoing

## 2.6 Sustainability Actions (others)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Take water conservation measures – low flow showers or toilets, fix leaks	In progress	Water savings	Investigating use of motion detector low flow showers and replacement with water efficient toilets during retrofit projects	Ongoing
Reduce/replace bottled water with filtered or refrigerated water	In progress	Reduced GHG from production and transportation	Bottled water deliveries in many departments cancelled, revert to tap water. SAC and Facilities Operations are both working to increase awareness of environmental impacts and benefits of using tap water.	Ongoing
Improve recycling measures	In progress	Increase recycling and decrease waste to landfill	Facilities Operations is providing more recycling containers and investigating other ways to encourage more recycling e.g. collection of batteries and electronics	Ongoing
Support composting	Planned	Community engaged in waste reduction	SAC is encouraging the development of departmental run compost collection for staff lunchrooms.	Ongoing
Use re-usable dishes	Planned	Reduce waste generated from disposable food containers	Dining Services encouraging increased use of china at food outlets	Ongoing
Purchase green cleaning products	Planned	Reduce toxins released into the environment	Cleaning products used by custodians are encouraged and adopted; Facilities Operations is working to develop preferred product list for use	Ongoing
Use green (low-e paints)	Planned	Reduce VOCs released into the environment	Reviewing and testing products for performance and adoption wherever possible	Pending review
Support sustainable procurement practices	Planned	Existing ethical procurement policy is implemented in all procurement contracts/	Procurement is investigating ways of including energy and sustainability requirements in tendering	Pending review
Adopt low-carbon contracting practices	Planned	Reduce carbon from transportation	SFU-led Local Foods project promote local foods on campus through pocket markets and food boxes	Ongoing
Reduce energy used in food services	Planned	Energy savings	Replace existing equipment with the most energy efficient equipment when retrofit projects are being carried out	Pending funding
Reduce waste from disposable food service items	In progress	Waste reduction	Renaissance coffee offers discounts for bringing personal reusable coffee mugs	Ongoing
Recycle surplus electronics	In progress	Waste reduction	Facilities Operations regularly takes back surplus PCs and delivers to approved recycler for recycling of all components in Canada; SFU Microcomputer Store also runs annual campaign in the Fall to take back PCs for recycling	Ongoing

Implement electric hand dryers	Planned	Waste reduction	Facilities Operations is investigating the replacement of paper towels with electric hand dryers	Pending review
Plant trees as carbon sinks	Planned	Carbon sink	Replant in areas of afforestation on Burnaby campus (application made under Trees for Tomorrow program)	Pending funding
<b>ADDITIONAL ACTIONS TAKEN OR PLANNED</b>				
<b>Action</b>	<b>Action Planned</b>	<b>Outcome/Performance Measure</b>	<b>Notes Clarifying Action Taken</b>	<b>Timeframe</b>
Finalize a Sustainability Advisory Committee (SAC)'s Strategic Plan 2009-2013	In progress	Roadmap and actions identified to move towards achieving the identified sustainability goals	The SAC Strategic Plan (to 2013) includes commitments to taking action towards reducing SFU's GHG emissions.	2009-2013
Faculty of Environment	In Progress	Increased opportunities for students to pursue studies related to environment and focus research and teaching.	SFU announced a new Faculty of Environment in 2009 to focus and develop curriculum on environmental studies.	
Green buildings standard	Planned	New buildings achieve LEED Gold	New facilities are designed to be high performance buildings and incorporate multiple green features.	2013