

# Selkirk College - 2010 Carbon Neutral Action Report

## Executive Summary

Conservation of the natural environment and responsible use of natural resources are a core organizational value at Selkirk College. We are committed to implementing practices that promote a healthy natural environment: in our teaching activities, our administration, our facilities and operations, our funding allocations and our applied research priorities. We are committed to reducing our ecological footprint and creating a culture of sustainability through our educational efforts.

Selkirk College will be known as a green college. As a key value we place on ourselves as an institution and as good stewards of the environment, we continue to look for new and innovative ways to make these values into realities.

## Emissions Reduction Activities

One way is to reduce our use of resources and tools that have only the virtue of being convenient. One such item that has been identified has been the overuse of local printers, copiers, fax machines and scanners. A survey conducted in 2010 helped Selkirk College to identify all these devices and make recommendations for rationalizing their location, use and support. Review of this survey resulted in a plan for providing full printer, copier, faxing and scanning functionality while increasing our sustainability and reducing our carbon footprint. New multi-function devices been ordered and a deployment scheme is being devised to place these new devices in the areas of highest usage over the coming year.

Recycling stations have been deployed on the Castlegar Campus in 2009 and have been well utilized. To further compliment the recycling program, the college has implemented on-site "co-mingle recycling bins" through WasteManagement which removes the need to separate and package recyclables into different bags, as well as the daily transportation of items to the local depot. The bin allows for monthly collection of recyclables.

The sustainability committee expanded on existing compost programs through the recommended purchase of an "Earth Tub" compost system which the college installed on the Castlegar campus in early 2010. A comprehensive composting program was devised wherein several small collection bins were distributed at key locations around the campus for daily collection and addition to the Earth Tub. Compost generated by the accelerated tub process will be deployed to the future site of Selkirk's Community Garden, another sustainability project planned for 2011. Collection of compostable materials is expected to reduce approximately 3 tonnes a year of landfill waste.

Selkirk's continued effort to reduce green house gas emissions within its facilities footprint includes the installation of 30 solar collection panels on the roof of the college's Kekuli House residence on the Castlegar campus. The panels are anticipated to reduce energy usage by approximately 50%, which translates to

approximately 160 GJ of natural gas per year. The new Gathering Place building at the Castlegar campus and the Nelson Residence renovation projects, scheduled for completion in 2011, have been constructed to meet the Gold Standards of LEED. Among the sustainability plans for this residence are a geothermal heating plant, incorporation of mounting structures to the roof system for future installation of solar panels, and installation of bike racks to encourage green transportation.

Additional sustainability contributions through revised facilities and maintenance operations include a 50% reduction of lawn irrigation at all campuses during the months of May through October. As a direct consequence of the reduced watering program, lawn maintenance (i.e. mowing) was reduced to approximately once every five weeks.

Selkirk College is committed to the continued reduction of green house gas emissions. Future plans for reduction include completion of an energy assessment of College Facilities in 2011 and completion of at least one emission reduction capital project in 2011. Environmental sustainability is a trait of the Selkirk culture and community it serves. Selkirk will continue to be a leader in reducing green house gases within the Kootenay Boundary area.

### **2010 Greenhouse Gas Emissions**

The following is a summary of 2010 greenhouse gas emissions from Selkirk College:

Mobile Fuel Consumption	45.42 tonnes CO <sub>2</sub> e
Stationary Fuel Combustion + Electricity (Buildings)	1442.38 “ “
Supplies (Paper)	39.51 “ “
Total	1,527.31 tonnes CO <sub>2</sub> e

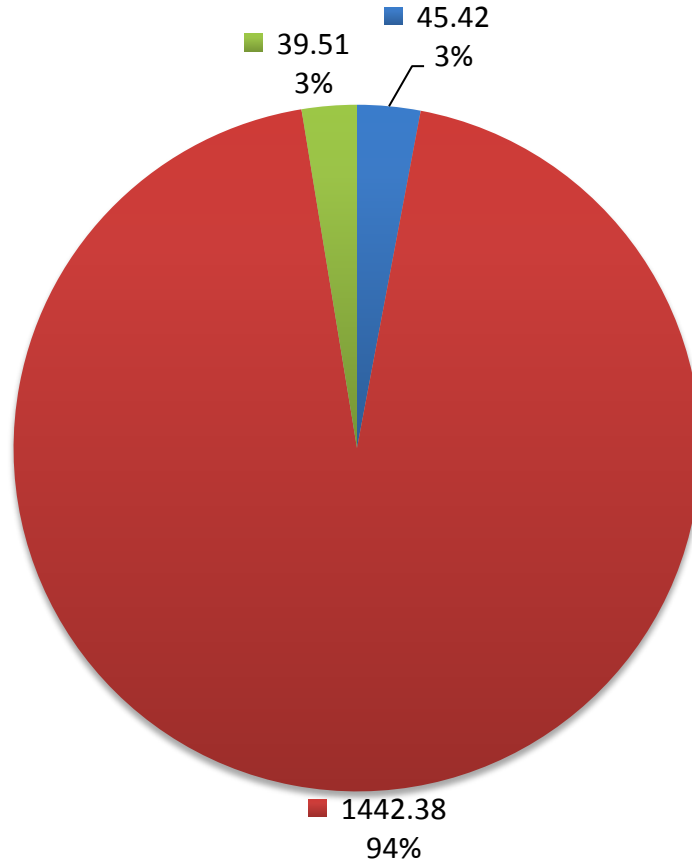
### **Offsets Applied to Become Carbon Neutral in 2010**

Emission offsets for Selkirk College’s total greenhouse gas emissions were applied to attain carbon neutrality.

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# Selkirk College

## Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 1527.31**

- 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: **1525.66**. Total offset investment: **\$38,141.50**. Emissions which do not require offsets: **1.65** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) 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 Neutral 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.

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## 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
<b>Mobile Fuel Combustion (Fleet and other mobile equipment)</b>							
<b>Vehicle fuel efficiency</b>							
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	Maintence of vehicles is done on a regular milage or time basis. This includes tune ups and oil changes	Maintenance Logs are maintained	2008	No End Date (Continuous)
<b>Behaviour change program</b>							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	75	% of current drivers are trained	ongoing	Post reminders in on vehicle dashes.	2009	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			ongoing	ongoing promotion	2006	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress			ongoing	ongoing promotion	2006	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)</b>							
<b>Planning/management</b>							
Enrol in a building energy benchmarking program (e.g., GREEN UP)	Ongoing/In Progress			Evaluate various energy audit companies.	Energy Audit for all Campuses to be completed in 2011	2011	No End Date (Continuous)
<b>Owned buildings</b>							
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress			New Student Residence building in Neslon and Gathering Place building in Castlegar are targeting a LEED Gold certification.	Renovation to be complete by August 31, 2011.	2010	2011
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Completed in 2010			Castlegar Campus HVAC upgrade.		2009	2010
Complete energy retrofits on existing, owned buildings	Completed in 2010	85	% of owned buildings have undergone energy retrofits since start year indicated	Completed for Silverking campus (Energy Efficiency Upgrades) amd for Catlegar campus (HVAC upgrades).		2009	2010
<b>Retrofitting owned buildings</b>							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress			New high efficiency pumps system installed at Castlegar campus boiler room.	Review options for upgrading boiler efficiency.	2011	No End Date (Continuous)
Upgrade lighting systems during retrofits	In Development				Replace less efficient T-12 fixtures with T-8 or better.	2010	2013
<b>Leased buildings</b>							
Establish energy performance baseline for leased buildings	In Development			Engaged Stantec to develop a Facility Master Plan which will include a Building Conditions Aseessment report			
<b>IT power management</b>							

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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	Ongoing/In Progress		Ongoing		2007	No End Date (Continuous)
Implement server virtualization	Ongoing/In Progress		ongoing		2009	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress		Printer study was completed in 2010; new IT Director has made transition a priority for calendar 2011.	Removal of "convenience" printers/faxes and transition to shared multifunctional devices and shared "specialty" devices (check printers, envelope printers) is presently underway at all locations. Support is no longer provided to individual devices and existing stock of consumables will not be refreshed. Expected completion is prior to calendar year end 2011.	2011	2012
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress		completed as faxes are replaced	ongoing for 2011 as faxes are replaced	2007	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress		As we replace them we are ensuring they are EnergyStar	Ongoing for 2011 as computers are replaced	2007	No End Date (Continuous)
<b>Appliances and electronic devices</b>						
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress		Cafeteria Coolers are larger and are not applicable	Purchase energy star only appliances for new Nelson Residences.	2011	No End Date (Continuous)
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress		As we replace them we are ensuring they are EnergyStar	Ongoing for 2011 as computers are replaced	2007	No End Date (Continuous)
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress		Flourescents are the prevalent lighting source at our campuses	Replace burnt lights with energy efficient lighting	2007	No End Date (Continuous)
<b>Supplies (Paper)</b>						
<b>Paper Type</b>						
Purchase 30% post-consumer recycled paper	In Development		Continuing review of Purchasing requirements as part of Sustainability work	Continued Review.	2009	No End Date (Continuous)
<b>Printer/document settings</b>						
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress		Printer study completed & implementation commenced in 2010.	Implementation of the studies recommendations	2009	2012
<b>Electronic media in place of paper</b>						
Post materials online that were previously printed	Ongoing/In Progress		Migration of weekly news letter was moved to mass PDF email to all staff. Additional announcements to staff are now done exclusively in electronic format.	Development of a Staff Intranet is underway with a launch projection of late Summer 2011 with all staff information and notifications being delivered there. A Student Intranet is planned for immediately after that launch with a projected completion of mid 2012. Electronic signage will continue to be deployed at all locations as needs expand.	2009	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Completed in 2010		Completed January 15, 2010		2009	2010
<b>Behaviour change program</b>						

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Encourage re-use of scrap paper	Ongoing/In Progress		Scrap paper is cut and made into pads for note taking	ongoing promotion	2009	No End Date (Continuous)

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## 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
<b>Business Travel</b>						
<b>Virtual meeting technology</b>						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	In Development			Implementation for 2013	2010	No End Date (Continuous)
Make desktop web-cameras available to staff	In Development		Deployment began	Implementation for 2013	2010	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	In Development			Implementation for 2013	2010	No End Date (Continuous)
<b>Behaviour change program</b>						
Train staff in web-conferencing	In Development			Implementation for 2013	2012	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	In Development			Implementation for 2013	2012	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		Deployment of computer cameras and the installation of Skype has begun. Investigation into multi-site video conferencing has begun.	Expanding the use of SMART boards and Bridgit software for classroom collaboration. Increased use of Skype and Facetime for personal video conferencing and continued investigation of cost-effective multi-site and multi-participant video conferencing solutions.	2008	2012
Encourage carpooling to meetings	Completed in 2010		Ongoing	Vehicle mileage reimbursement to be made available only to carpool drivers	2009	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	In Development		Ongoing promotion	Promote via employee newsletter	2007	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>						
<b>Team-building</b>						
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress		Continuation of "Power Down" program to train staff and students in turning off computers and monitors when leaving for the day.	Deployment of power bars to all systems to make power down as simple as possible. Implementation of JuicePress to control all lab and classroom computer system power management.	2009	No End Date (Continuous)
<b>Staff Professional Development</b>						
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress		ongoing	ongoing	2009	No End Date (Continuous)
<b>Staff awareness/education</b>						
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress		PD courses offered annually to staff surrounding this issue.	ongoing	2008	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress		ongoing	Ongoing	2008	No End Date (Continuous)

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<b>Client/public awareness/education</b>							
Provide education to clients/public about the science of climate change	Ongoing/In Progress			Provide workshops at Discovery Day	same as 2010	2009	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	Completed in 2010			Selkirk College Environmental Study presentation to the public occur in 2010		2009	2010
<b>Other Sustainability Actions</b>							
<b>Water conservation</b>							
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			Reduced water for irrigation approximately 50%.	Evaluate further water use reductions and create landscaping using native, low water consumption plants.	2010	No End Date (Continuous)
<b>Waste reduction/diversion</b>							
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress			Composter installation & program implementation to help eliminate some waste that is currently going to landfill. As well developed a surplus disposal program.	ongoing	2009	No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>							
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			Made part of the Capital Planning Committee mandate in 2010.	will review anytime any materials are purchased	2008	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	In Development			Reviewing costs for green cleaning products versus current	will review anytime any materials are purchased	2008	No End Date (Continuous)
<b>Building construction, renovation, and leasing</b>							
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress			Wood waste is offered to students and staff	Ongoing evaluation of surplus construction goods	2008	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	100	% of business cases incorporating lifecycle costing since start year indicated	is part of the Residence Renovation project	Ongoing whenever a new project is undertaken	2009	2013
<b>Indoor air quality</b>							
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress			Currently signage in gym and some bathrooms (promoting but not enforced).	Ongoing	2008	No End Date (Continuous)
Incorporate low volatile organic compounds (VOCs) standards into procurement policy for products such as paints, carpets, and furniture	Ongoing/In Progress			Low volatile organic compounds in paint is procured where suitable.	Ongoing	2008	No End Date (Continuous)
<b>Commuting to and from home</b>							
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress			Bike to work day / Carpool site / etc.	Ongoing	2008	No End Date (Continuous)
Provide secure bicycle storage	In Development				New Residence building to incorporate bike racks and covered storage.	2011	2013



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<b>Other Sustainability Actions</b>						
A community garden is planned for planting this summer	Ongoing/In Progress		Site for garden determined and planting plan completed.	Garden to be tilled and planted with produce donated to local food bank.	2011	No End Date (Continuous)