Selkirk College - 2012 Carbon Neutral Action Report

Executive Summary

Conservation of the natural environment and responsible use of natural resources are core organizational values 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

In our effort to reduce fuel combustion, Selkirk College encourages staff to choose telecommuting or carpooling options for meetings outside of their home site. The college was successful in reducing overall travel in 2012 by 30%. Video conferencing software was also evaluated with a selection made for implementation in 2013.

Lighting upgrade projects were completed at our Silverking and Tenth Street campuses with a total of more than 300, T-12 type light fixtures replaced with energy efficient units. Energy efficient glazing was installed at our Silverking maintenance shop and uninsulated overhead Trades building shop doors were replaced with insulated units.

A study of various alternative energy systems for replacement of the low thermal efficiency boiler plant at the Castlegar campus was completed. Various systems were studied, including open and closed loop ground source heat pumps, sewage heat recovery and aero thermal heat pumps. It was decided to pursue a "hybrid" heating system upgrade utilizing heat from an aquifer in combination with a high efficiency boiler plant. The open loop heat pump will supply approximately 25% of the campus' heat demand. Detailed engineering was also completed for a project to replace the existing low thermal efficiency boiler at our Tenth Street campus with a high efficiency condensing boiler. Completion of these projects is a priority.

In 2011, IT Services centralized print and copy services through shared multifunctional devices placed strategically throughout the campuses and began the removal of individual convenience printers. An additional 60 stand-alone printers were removed from service in 2012.

Additional water fountains were added to provide water-bottle filling stations at two Selkirk campuses to provide a responsible alternative to purchased water in disposable bottles.

Plans to Continue Reducing Greenhouse Gas Emissions 2013 – 2014

Selkirk College is committed to the continued reduction of green house gas emissions. Future plans for reduction include replacing all inefficient T-12 lights with energy efficient units. We also plan on beginning to replace exterior lighting with LED lamps. Upgrading the boiler plants at the Castlegar and Mary Hall facilities is a key priority which will reduce the College's GHG emissions by at least 20%. 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.

2012 Greenhouse Gas Emissions

The following is a summary of 2012 greenhouse gas emissions from Selkirk College:

Mobile Fuel Consumption	57.99 tonnes CO2e
Stationary Fuel Combustion + Electricity (Buildings)	1299.33 tonnes CO2e
Indirect Emissions and Biomass	32.17 tonnes CO2e
Supplies (Paper)	34.03 tonnes CO2e
TOTAL EMISSIONS, CALENDAR YEAR 2012	1425 tonnes CO2e
Carbon Neutral or Offset Exempt	2 tonnes CO2e
TOTAL FOR OFFSETS	1423 tonnes CO2e

Offsets Applied to Become Carbon Neutral in 2012

Total emissions offset for Selkirk College in 2012 to become carbon neutral is 1423 tonnes CO2e.

Following the public release of Selkirk College's 2011 Carbon Neutral Action Report, it was determined that the total emissions for the 2011 calendar year were under reported by 43 tonnes CO2e and offsets required to become carbon neutral were under reported by this amount. The difference in offsets required have been purchased and applied against our 2011 emissions.

UP ADMIN.

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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	Steps Taken	Steps Planned	Start Year	End Year
Mobile Fuel Combustion (Fleet and other)					
Behaviour change program					
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	Posting of reminders on vehicle dashboards.	Ongoing promotion.	2009	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Not Yet Evaluated				No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Travel budget was reduced by 30%.	Reduced travel budget maintained for 2013.	2008	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Support local transit authority to improve and increase bus service to the College.	Promotion of "bike to college" and "bike to work" days for students and staff.	2011	No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	In Development	Replaced one maintenance vehicle with a 30% more fuel efficient van.	Replace at least one maintenance vehicle with a fully electric vehicle as capital budget allows.	2012	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	In Development	Replaced a full size maintenance pick-up with a mini van.	Replacement of an existing gasoline powered maintenance vehicle with a fully electric one as capital budget allows.	2012	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Regular vehicle maintenance including tune-ups to maintain optimum mileage efficiency.	Continuation of regular routine maintenance to ensure minimal fuel consumption.	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through ""workstation tune-ups""	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Completed (in Previous Year)				No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Not Yet Evaluated				No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Not Yet Evaluated				No End Date (Continuous)
Encourage use of stairs instead of elevators	Not Yet Evaluated				No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Completed (in Previous Year)				No End Date (Continuous)
Promote hot water conservation	Not Yet Evaluated				No End Date (Continuous)
IT power management					
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	Installation and configuration of LabStats "Juicepress" software to manage workstation power usage.	Continued refinement of the JuicePress product to better manage power usage.	2012	2013
Implement server virtualization	Ongoing/In Progress	Presently at 55-60% conversion to Virtualize server environment.	We project 80% of our servers will be migrated to VM by the end of this calendar year.	2012	2014
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	Via JuicePress we manage the inactivity settings of all computers and monitors.	We will have removed all CRT's and replaced them with Energy Star flat panel displays.	2011	2013
Remove stand-alone printers, copiers, and/or fax machines and install	Ongoing/In	We have removed over 60 stand-alone printers and consolidated	There are additional stand-alones to replace and expect those to be	2010	2014

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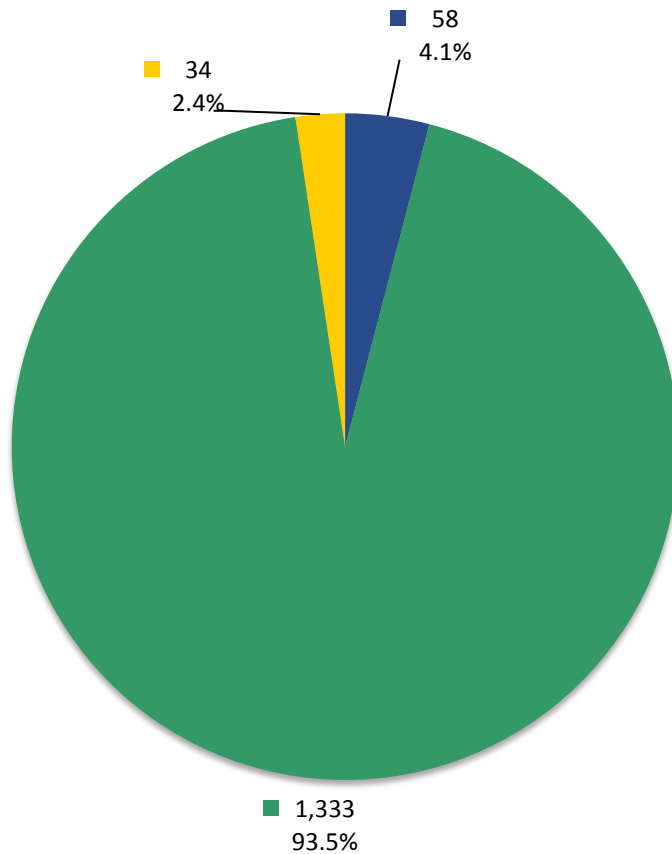| Action	Status	Steps Taken	Steps Planned	Start Year	End Year
multi-function devices as part of a print management strategy	Progress	printing function to MFDs.	removed or rationalized over the next 24 months.		
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Completed (in Reporting Year)	All MFDs have power saving modes enabled.		2012	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	All new computer purchases are Energy Star compliant and we are on a 4 year replacement cycle for all computer systems.	We have begun an "evergreen" project to replace 25% of all computers each year with Energy Star compliant systems.	2012	No End Date (Continuous)
Leased buildings					
Establish energy performance baseline for leased buildings	Completed (in Previous Year)				No End Date (Continuous)
Lease space with operations and maintenance performance labelling/certification (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Lease space with commercial interiors performance labelling/certification (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Lease space in buildings with new construction performance labelling/certification (e.g., LEED NC)	Not Yet Evaluated				No End Date (Continuous)
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	Not Yet Evaluated				No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	Ongoing/In Progress	Completed project studies and preliminary engineering design to replace heating systems at the Castlegar and Tenth St campuses. The two projects would reduce GHG emissions by over 20%.	Monitor energy consumption at all facilities and investigate unusual trends.	2011	No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	Compilation of LEED documentation for Tenth Street Residence building at Tenth St campus.	Completion of certification process to LEED Gold.	2010	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	In Development	Completion of an energy study to upgrade the Castlegar campus heating system exploring alternative energy use including geothermal and water heat sources.	Replacement of the existing boilers with an energy efficient hybrid heating system utilizing water source heat pumps and high efficiency gas boilers.	2012	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	In Development	Recruitment of a Refrigeration Mechanic to bring maintenance expertise to the facilities heating and cooling systems.	Incorporate a refrigerant management and maintenance strategy.	2012	No End Date (Continuous)
Planning/management					
Reduce office space (square meters) per employee	In Development		Increase number of drop-in offices to allow use by at least 10 employees.	2013	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Not Yet Evaluated				No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	In Development	The Gathering Place was completed with an energy efficient heating system including a heat recovery ventilator.	Ensure any mechanical system upgrade is made with state of the art replacement equipment.	2011	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	Failed exterior lights at the Castlegar Residence building were replaced with LEDs. Approximately 300 T-12 fixtures in the Silverking Fine Woodworking shop and Mary Hall gym wer replaced with energy efficient units.	Continue to replace any T-12 fixtures with energy efficient lighting.	2009	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	In Development	Building controls were added to the Shambhala theatre to reduce energy use.	Continue to expand on the use of automated building controls (and programmable thermostats for smaller areas) to minimize heating	2012	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		and cooling energy use.			
Improve building insulation (including windows) during retrofits	In Development	Windows were replaced at the Silverking maintenance shop with energy efficient units. Overhead shop doors at the Silverking trade school were replaced with energy efficient doors.	Replace all single pane or low efficiency glazing.	2012	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	Various products have been "field tested" in evaluation and Sharepoint was selected.	Training of staff during the Sharepoint roll-out.	2012	2014
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	Development of "ebook" software and library along with training in how to publish to PDF and ebooks. Evaluation of tablet computers was completed.	Purchase and issuance of tablets to Board of Directors and other staff members along with a library of materials for meetings. Additional use of our Learning Management System to house meeting information will be expanded.	2011	No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	Migration of Directory Services to MS Active Directory began as a staging point to bring in Sharepoint.	Complete Active Directory migration; provide training to personnel on MS Sharepoint and assign a vendor to help implement SP.	2012	2014
Use electronic document library for filing common documents	In Development	As with Collaborative software, utilize the "Visual Source Safe" components of Sharepoint.	Complete Active Directory migration; provide training to personnel on MS Sharepoint and assign a vendor to help implement SP.	2012	2014
Switch to an electronic payroll notification system in place of paper pay stubs	Completed (in Previous Year)				No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	Purchase a minimum of 30% recycle content for printing paper.	Continue to ensure recycle content is at least 30%.	2009	No End Date (Continuous)
Purchase 40% post-consumer recycled paper	Not Yet Evaluated				No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	100% recycled paper is specified for use on the College and Continuing Education calendars.	Continue to use 100% recycle paper for these publications.	2010	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	Continue to monitor the configurations on all MFDs in our environment.	Set all default copies and printing to email and PDF.	2012	No End Date (Continuous)

Selkirk College
Greenhouse Gas Emissions by Source
for the 2012 Calendar Year (tCO$_2$e*)

58
4.1%

34
2.4%

1,333
93.5%

Total Emissions: 1,425

■ Mobile Fuel Combustion (Fleet and other mobile equipment)

■ Stationary Fuel Combustion (Building Heating and Generators) and Electricity

■ Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2012 (Generated May 27, 2013 11:47 AM)
Total offsets required: **1,423**. Total offset investment: $**35,575**. Emissions which do not require offsets: **2** **

*Tonnes of carbon dioxide equivalent (tCO$_2$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 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.