



School District No. 91 (Nechako Lakes)

2011 Carbon Neutral Action Report

Executive Summary

School District No. 91 (Nechako Lakes) continues to actively pursue carbon neutrality through a variety of fixed asset initiatives and behavioral changes. Our Energy Management Program Committee identifies improvement opportunities based on consumption data and other related performance indicators.

The district has dedicated funds towards lowering our carbon footprint in two main areas:

1. thermal imaging to identify heat leakages in our building's envelop and; 2. upgrading our district's inefficient lighting. These lighting projects include upgrading metal halide and high pressure sodium light fixtures as well as adding motion sensors in high occupancy areas. The district will continue to partner with our utilities providers on all reasonable energy conservation projects.



An energy monitoring system has been installed in our highest consuming secondary school. The purpose of this installation is to track the decrease in consumption as well as provide an educational tool for secondary science students. Our district continues to explore opportunities that we can integrate demonstration-type technologies into school-based activities and thereby giving our students the opportunity to actively participate in the district's green initiatives.

The emphasis of our efforts in 2012 will continue to be on addressing the opportunities that give the district the greatest opportunities for reducing our carbon footprint.

Darlene Turner

Darlene Turner, Secretary-Treasurer
School District No. 91 (Nechako Lakes)

May 15, 2012

Date

2011 Greenhouse Gas Emissions

Our greenhouse gas (GHG) emissions for 2011 are as follows:

Scope 1 – Direct Emissions

Mobile Fuel Combustion 1,194 tonnes of CO₂e

Mobile Fugitive Emissions * 7 tonnes of CO₂e

Stationary Fuel Combustion 2,238 tonnes of CO₂e

Stationary Fugitive Emissions *

Scope 2 – Indirect Emissions

Electricity 126 tonnes of CO₂e

Scope 3 - Office Paper Emissions

Supplies (Paper) 71 tonnes of CO₂e

Scope 4 – Prior Year Adjustment

Stationary Combustion 25 tonnes of CO₂e

* It is estimated that fugitive emissions from cooling do not comprise more than 0.2% of the organization's 3,661 tCO₂e of total emissions and an ongoing effort to collect or estimate emissions from this source would be disproportionately onerous. For this reason, emissions from this source have been deemed out-of-scope and have not been included in our organization's 3,661 tonnes of total greenhouse gas emission profile.

Offsets Applied to Become Carbon Neutral in 2011

In accordance with regulation and in an effort to become carbon neutral, School District No. 91 (Nechako Lakes) has offset our carbon emissions by disposing of these offsets in the Pacific Carbon Trust equivalent to 2,626 tCO₂.

As required by section 5 of the Carbon Neutral Government Regulation, 1,034 tCO₂e of emissions resulting from the operation of school buses were reported as part of our

greenhouse gas emissions profile in 2011. However, they were offset as they are out-of-scope under section 4(2)c of the Carbon Neutral Government Regulation.

Changes to Greenhouse Gas Emissions and Offsets Reporting from Previous Years

Following the public release of School District No. 91 (Nechako Lakes)'s 2010 Carbon Neutral Action Report, it was determined that the total emission for 2010 calendar year were under reported by 25 tCO₂e and offsets required to become carbon neutral were under reported by 25 tCO₂e.

The difference in offsets required have been purchased and applied against our 2011 emissions.

Emissions Reduction Activities

- Actions Taken to Reduce Greenhouse Gas Emissions in 2011
 - Continue to develop a culture of conservation and consumption reduction.
 - Expand our energy monitoring program into other appropriate schools
 - Continue to expand our clothesline program into other appropriate schools
 - Replace inefficient lighting based on the greatest impact-first approach
 - Continue to develop, share and implement *Best Operating Practices* for heating, ventilating and other energy conservation methods

- Plans to Continue Reducing Greenhouse Gas Emissions in 2012-2014
 - Continue to engage the district's Energy Management Committee to identify key reduction and conservation opportunities.
 - Further develop the opportunity of implement energy savings methodology into the school's curriculum.
 - Investigate the potential of partnering with a community heating project initiative.
 - Incorporate LEED certification into new construction or major renovation projects.

School District No. 91 (Nechako Lakes) - 2011 Carbon Neutral Action Report

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 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)							
Vehicle fuel efficiency							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	25	% of vehicles are fuel- efficient models	Replacement vehicles purchased in 2011 have been as efficient as reasonable to meet the task requirements	As vehicles reach the end of their life cycle, the most efficient available vehicles will be considered for purchase	2007	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	50	% of vehicles down-sized since start year indicated	Inventoried fleet composition based on age and type	As vehicles reach the end of their life cycle, the most efficient available vehicles will be considered for purchase	2008	No End Date (Continuous)
Perform regular fleet maintenance specifically to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	Regular fleet maintenance is an on-going activity and performance efficiency is audited	Auditing standards will continued to be developed through PMs and updated on a regular basis	2005	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress	35	% of small maintenance vehicles are fuel-efficient	Fuel efficiency is the main performance criteria when replacement is required	Continue to review and update our vehicle replacement criteria to conform to the latest industry standards	2008	No End Date (Continuous)
Behaviour change program							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	70	% of current drivers are trained	All bus drivers have been trained in the NRCAN Smart Driver program	Continue to train all white fleet drivers in this training program	2008	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress			All bus drivers have been trained in the NRCAN Smart Driver program	Continue to train all white fleet drivers in this training program	2010	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			Ensure carpooling as often as reasonably necessary	Encourgae district-wide policy of car pooling	2009	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	In Development				Continue to identify methods for encouraging green culture	2010	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Planning/management							
Reduce office space (square meters) per employee	Ongoing/In Progress	10	is the current average rentable square meters per employee	Investigated opportunities for space closure	Continue to investigate all reasonable opportunities to maximize student and staff concentrations	2010	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	5	% of buildings have a real time metering system installed	Installing real time metering in one of our secondary schools	Fine tune metering options for both reduction and educational purposes	2011	No End Date (Continuous)
Owned buildings							
Establish energy performance baseline for owned buildings	Ongoing/In Progress	100	% of owned buildings have an established energy performance baseline	Continue monitoring both "best and worst" performers	Continue to investigate all reasonable improvement opportunities	2010	No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	In Development	0	% of owned buildings have operations and maintenance labelling/certification		Continue to investigate opportunities for LEED EM:O&M	2010	No End Date (Continuous)

School District No. 91 (Nechako Lakes) - 2011 Carbon Neutral Action Report

Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	In Development	0	% of commercial interiors in owned buildings have labelling		Continue to investigate opportunities for LEED CI	2010	No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	In Development	0	% of owned buildings are certified LEED NC Gold or LEED NC Platinum		Continue to investigate opportunities for LEED NC	2010	No End Date (Continuous)
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	5	% of buildings built or renovated since start year indicated used the integrated design process	Installed DDC in FLESS renovation project	DDC renovation will continue in FLESS	2010	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	In Development			Offer incentive to remove inefficient refrigerators	Continue to replaced inefficient refrigerators	2010	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	30	% of owned buildings have undergone energy retrofits since start year indicated	Implementing new lighting strategy and insulating programs	Continue to replace inefficient lighting with LED technology	2010	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	0	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	Upgrade new boilers with DDC	Investigate replacing the three oldest HVAC systems in the district	2010	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	5	% of retrofits since start year indicated had lighting systems upgrades	Upgrade elementary gym from metal halide to LED lighting	Continue to replace MH lights	2010	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	10	% of retrofits since start year indicated had control system upgrades or adjustments	Elementary school gym retrofitted with LED Hi-Bays	Continue to replace MH lights with LED lighting with daylight harvesting capability	2011	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	5	% of retrofits since start year indicated had insulation improvements	- Insulated 2 floors of secondary school wing (NVSS) - replaced inefficient windows at MME and replaced with efficient windows and curtains	Insulate cold walls based on thermal imaging results	2011	No End Date (Continuous)
Install an on-site renewable energy demonstration project	Ongoing/In Progress	0	% of retrofits since start year indicated had on-site renewable energy components	Investigated options with local energy management consultant	Investigate demonstration projects with integration potential into school curriculum	2011	No End Date (Continuous)
Leased buildings							
Establish energy performance baseline for leased buildings	Completed in 2011	100	% of leased buildings have an established energy performance baseline	Energy baselines established	Continue to monitor performance	2010	No End Date (Continuous)
IT power management							
Install power management software which shuts down computers outside of regular business hours	In Development				Software packages include power management opportunities	2009	No End Date (Continuous)

School District No. 91 (Nechako Lakes) - 2011 Carbon Neutral Action Report

Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Implement server virtualization	Ongoing/In Progress	100	% of servers have been virtualized since start year indicated	All new serves have virtualization opportunities included	Continue with virtualization	2009	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	20	% reduction in printers, copiers, and/or fax machines since start year indicated	Removed all applicable stand-alone devices	Continue to reduce/eliminate stand-alone devices	2010	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress	20	% of devices have auto-sleep settings applied	Purchased new devices with auto-sleep capabilities	Continue to source new power saving opportunities	2009	No End Date (Continuous)
Appliances and electronic devices							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	50	% of fridges are ENERGY STAR rated	Identify older inefficient models	Offer incentives to facilities with energy inefficient models	2010	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	90		Replaced old washer/dryer appliances with high efficiency units	Offer incentives to facilities with energy inefficient models	2011	No End Date (Continuous)
Behaviour change program							
Help staff reduce personal energy use through "workstation tune-ups"	In Development			Educating staff on the high cost of space heaters	Discussed intent and options with staff	2011	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	In Development				Discussed intent and options with staff	2011	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	In Development				Investigate locations where appropriate	2011	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress			Continuing to educate staff and students	Continuing to educate staff and students	2011	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			Continuing to educate staff and students	Continuing to educate staff and students	2010	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	In Development				Continue to increase awareness	2009	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			Use cold water custodial products	Identify opportunities to reduce/eliminate hot water useage	2010	No End Date (Continuous)
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	6	% of total paper purchased contains 30% recycled content	continue purchase of recycled paper	Continue to promote use of recycled paper	2009	No End Date (Continuous)
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	Completed in 2011	95	% of network printers or photocopiers are set to automatic double-sided	Continue to identify and program network printers		2011	No End Date (Continuous)

School District No. 91 (Nechako Lakes) - 2011 Carbon Neutral Action Report

Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	In Development	5	% of network printers have 'print and hold' settings applied		Work with equipment suppliers to include this functionality	2011	No End Date (Continuous)
Reduce default margin size in standard document templates (e.g., letters, briefing notes, forms, etc.)	Ongoing/In Progress			Continue to investigate the ability to include this function	Continue to investigate the ability to include this function	2011	No End Date (Continuous)
Electronic media in place of paper							
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	10	% of staff workstations with software installed		Continue to incorporate this function into presentation computers	2011	No End Date (Continuous)
Post materials online that were previously printed	In Development				Continue to use First Class conferencing abilities	2006	No End Date (Continuous)
Behaviour change program							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development				Continue to train staff on this function	2011	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Investigate the issues with paper-based meetings and discussed options	Transferring board of education meetings to electronic materials	2009	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress			Continue promoting this culture	Continue promoting this culture	2009	No End Date (Continuous)

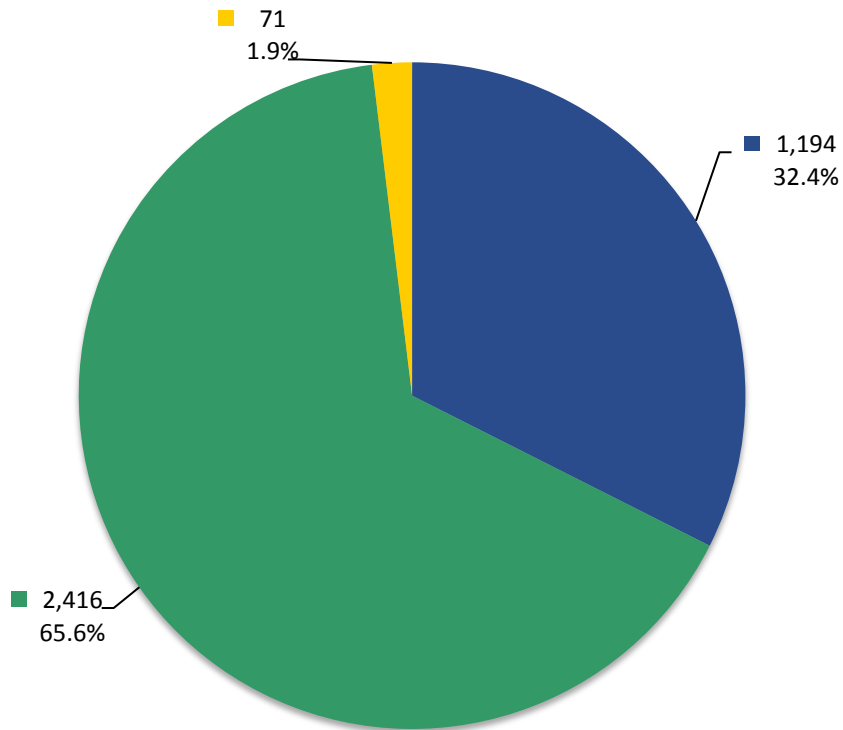
School District No. 91 (Nechako Lakes) - 2011 Carbon Neutral Action Report

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 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
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**School District 91 - Nechako Lakes
Greenhouse Gas Emissions by Source
for the 2011 Calendar Year (tCO₂e*)**



Total Emissions: 3,681

- 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 2011 (Generated May 18, 2012 12:44 PM)

Total offsets required: **2,647**. Total offset investment: **\$66,175**. Emissions which do not require offsets: **1,034** **

*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.