

## School District No. 22 (Vernon) – 2011 Carbon Neutral Action Report

### Executive Summary

*Our district promotes anti-idling, with 'anti-idling' signs and encourages recycling, reusing, composting and waste reduction programs expansion in schools and sites. In 2008 the Smart Driver Training program was presented to all school bus drivers and continues on an annual basis. This program included participating in the 2009 federally sponsored school bus retro fit program to further update the diesel powered buses. (Note: our instruction is based on driving strategies and techniques to improve fuel economy and to reduce periods of idling. Our district has completed the 2009 federally sponsored school bus retro fit program to further update the diesel powered buses. (Note: our district participated in the 2006 federally sponsored retro fit program for school buses including diesel oxidation catalyst mufflers engine crankcase ventilation system upgrades) bus engine block heaters are controlled by programmable timers that only activate timers on school days and for a time period appropriate to the engine and the temperature. Items such as seat upholstery and sealed window panels are re-used from buses that are out of service. For our school buildings, over the years we have been involved in an energy retro fit program like low flow, light sensors, temperature setbacks, water management, lighting, use of low E paint and use of recycled material where possible. The School District continues to pursue electrical retrofits at schools, as budgets permit, to reduce energy costs. Our operations supervisors have kept up to date through Pro D in attending workshops and conferences on related topics and we have made adjustments and changes on a continual basis. Of note is the computer based energy management system (Orca) with our district being one of the first districts on board with the energy management system. We have Co2 sensors in many locations that turn the fresh air flow on/off according to occupancy as well as door sensors (i.e. If gym doors are wide open, A/C will not come on). For ongoing initiatives appliance replacements will be with Energy Star rated appliances. Carpooling between teachers to our rural school locations continues. Our grounds department supervisors continue reduction of the use of pesticides, and in 2011 our Board passed a new pesticide policy.*

### Overviews

#### **Actions Taken to Reduce Greenhouse Gas Emissions in 2011**

Our district continues to update the diesel powered buses and to replace buses further to Capital Project approval.

For our school buildings, over the years we have been involved in an energy retro fit program like low flow, light sensors, temperature setbacks, water management, lighting, use of low E paint and use of recycled material where possible. Our operations supervisors have kept up to date through Pro D in attending workshops and conferences on related topics and we have made adjustments and changes on a continual basis. Of note is the computer based energy management system (Orca) with our district being one of the first districts on board with the energy management system. We have Co2 sensors in many locations that turn the fresh air flow on/off according to occupancy as well as door sensors (i.e. If gym doors are wide open, A/C will not come on). For ongoing initiatives appliance replacements will be with Energy Star rated appliances. For the past couple of years there has been carpooling between teachers to our rural school locations. Our grounds department supervisors are exploring the use of pesticides and continue to have system discussions.

## Operational Changes in 2011

### Plans to Continue Reducing Greenhouse Gas Emissions 2011 – 2012

For ongoing initiatives appliance replacements will be with Energy Star rated appliances. We anticipate there will continue to be carpooling between teachers to our rural school locations. Our grounds department supervisors will be initiating the new Pesticide Policy. With the completion of the new Coldstream Elementary School, LEED Gold, reductions have been achieved through power management, sustainability actions, etc. This has led to the greatest reduction in utility consumption in any one year in our school system. Continued reductions will also be through ongoing maintenance of buildings and vehicles and continued staff awareness.

Our school administrators continue to encourage our students awareness and this is clear in examples that include: secondary school students participation in the BC Hydro School Programs where BC Hydro recognized the students at a public board meeting; and another secondary school student took a leadership role in completing a walking path in the community, receiving public recognition. These actions raise awareness among students and our district to reduce carbon emissions.

The district continues to reduce its aging fleet of school buses and maintenance vehicles resulting in fuel efficient and environmentally friendly vehicles.

2011 total emissions were 3589 and offset was 2791. The underpayment of 69 tonnes from 2010 was included in the 2,860 tonnes paid to December 2011.



Randy Hoffman

Secretary-Treasurer, School District No. 22 (Vernon)

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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 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
<b>Mobile Fuel Combustion (Fleet and other mobile equipment)</b>						
<b>Vehicle fuel efficiency</b>						
Replace vehicles with more fuel-efficient models	Ongoing/In Progress		7 new buses approved through Capital Projects	buses have been ordered with anticipated arrival for the 2012/2013 school year	Started before 1995	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress		part of purchasing practice	replace as needed	2000	No End Date (Continuous)
Perform regular fleet maintenance specifically to improve fuel-efficiency	Ongoing/In Progress		part of our regular vehicle maintenance program	ongoing	2000	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress		part of purchasing practice	replace as needed	2000	No End Date (Continuous)
<b>Behaviour change program</b>						
Provide fleet driver training to reduce fuel use	Ongoing/In Progress		part of annual driver training program	ongoing	2000	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		ongoing practice, anti-idling signage on buildings	ongoing	2000	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)</b>						
<b>Planning/management</b>						
Reduce office space (square meters) per employee	Ongoing/In Progress			as new projects are approved	2007	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress		60% sites have metering system	as budget allows	2007	No End Date (Continuous)
<b>Owned buildings</b>						
Establish energy performance baseline for owned buildings	Ongoing/In Progress		energy audits done	ongoing	2011	No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Ongoing/In Progress		new Coldstream Elementary School is LEED Gold (completed 2011).	new Vernon Secondary School in progress, LEED Gold	2009	2013
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	Ongoing/In Progress		new Coldstream Elementary School is LEED Gold (completed 2011).	new Vernon Secondary School in progress, LEED Gold	2009	2013
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress		new Coldstream Elementary School is LEED Gold (completed 2011).	new Vernon Secondary School in progress, LEED Gold	2009	2013
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress		new Coldstream Elementary School is LEED Gold (completed 2011).	new Vernon Secondary School in progress, LEED Gold	2009	2013

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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
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress		new sites are 410A	as budget allows	2009	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress			plan 1 site per year	2010	No End Date (Continuous)
<b>Retrofitting owned buildings</b>						
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress		upgrade as part of Annual Facilities Grant at three secondary and two elementary schools	as budget allows	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress		lighting upgrades to one secondary and one elementary school as part of AFG, replacing ballasts to T-8	part of our maintenance program	2007	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress			plan 1 site per year	2010	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress		exterior upgrades to one secondary and five elementary schools as part of AFT	as budget allows	2010	No End Date (Continuous)
<b>IT power management</b>						
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress		part of technology plan review underway	consultant report due second quarter 2012	2012	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress		part of technology plan review underway	consultant report due second quarter 2012	2012	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress		part of technology plan review underway	consultant report due second quarter 2012	2012	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress		part of technology plan review underway	consultant report due second quarter 2012	2012	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress		part of technology plan review underway	consultant report due second quarter 2012	2012	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		as budgets are approved	ongoing	2007	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		part of our purchasing practice	ongoing	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		part of our purchasing practice	ongoing	2007	No End Date (Continuous)
<b>Behaviour change program</b>						
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)

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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
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress		part of employee awareness	ongoing	2007	No End Date (Continuous)
<b>Supplies (Paper)</b>						
<b>Paper Type</b>						
Purchase 30% post-consumer recycled paper	Ongoing/In Progress		most paper we purchase is 30% recycled and all of our colored paper is 30% recycled	we pay a premium to be green and some schools choose to go with the less expensive non-recycled product. Continue to assess	2000	No End Date (Continuous)
<b>Printer/document settings</b>						
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress		part of staff awareness and becoming more of a strategy	continue to assess	2008	No End Date (Continuous)
Reduce default margin size in standard document templates (e.g., letters, briefing notes, forms, etc.)	Ongoing/In Progress		part of staff awareness		2007	No End Date (Continuous)
<b>Electronic media in place of paper</b>						
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development		part of staff awareness	ongoing	2008	No End Date (Continuous)
Use electronic document library for filing common documents	In Development		utilizing shared drives on server	ongoing	2008	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress		continue to add more information to our district web site	ongoing	2008	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress		80% of staff receiving statements electronically	continue to encourage staff to receive electronic information	2008	No End Date (Continuous)
<b>Behaviour change program</b>						
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development		some staff editing electronically	ongoing	2008	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress		agendas via e-mail with no paper copies at meetings. Public board meeting agendas posted on district web-site	continue with current practice	2008	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress		reminders to staff, unused trustee ballots currently being used for scratch pads	continue	2008	No End Date (Continuous)

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### Actions to Reduce Provincial Emissions and Improve Sustainability

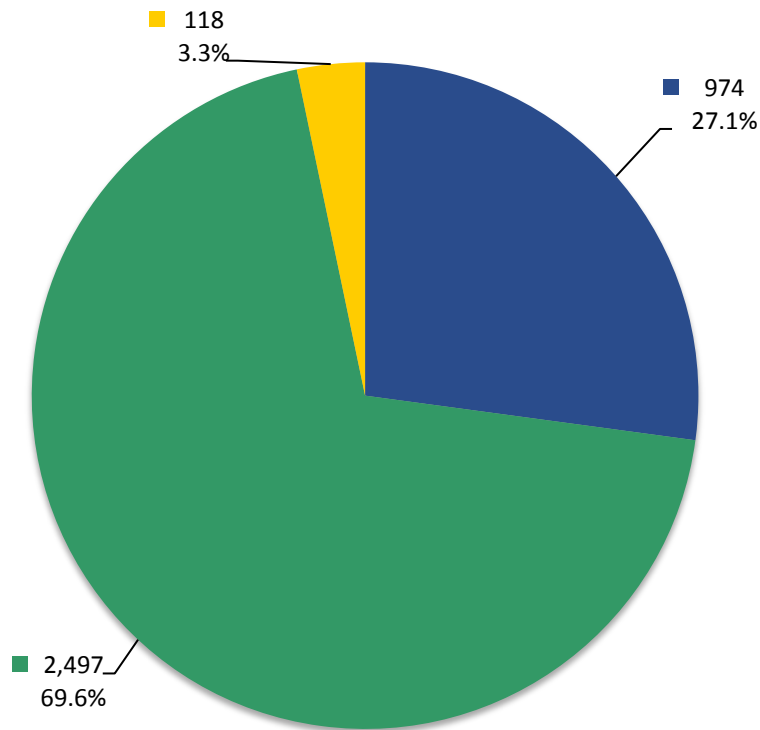
The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*. Public sector organizations can optionally use this section to 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 12/31/11)	Performance to Date (as of 12/31/11)	Steps Taken in 2011	Steps Planned for 2012 -2014	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		small percentage installed, as needed	continue	2008	No End Date (Continuous)
<b>Behaviour change program</b>						
Train staff in web-conferencing	Ongoing/In Progress		as needed by staff	ongoing training as needed	2008	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress		as needed by staff	ongoing training as needed	2008	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		staff awareness	continue	2008	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress		staff awareness	continue	2008	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>						
<b>Client/public awareness/education</b>						
Provide green tips on client/public website or in newsletters	Ongoing/In Progress		staff awareness. Web-site and e-mails advises to think about the environment before printing	ongoing	2010	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
<b>Water conservation</b>						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress		plumbing (washroom) upgrades to one elementary school as part of AFG - part of maitnenance program	as budgets allow	2008	No End Date (Continuous)
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		new Coldstream School	new Vernon Secondary School	2008	2013
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Ongoing/In Progress		new Coldstream School	new Vernon Secondary School	2008	2013
<b>Waste reduction/diversion</b>						
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		we have PC bin, hazardous waste disposal	annual maintenance procedure	2007	No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>						
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress		staff awareness - re-cycle toner cartridges, re-use binders	district practice	2008	No End Date (Continuous)

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Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		use green products where applicable as part of our ongoing custodial services	continue with practice	2008	No End Date (Continuous)
Require a minimum purchase of sustainable, and organic food and beverages supplied by contracted food suppliers or caterers	Ongoing/In Progress		teaching cafeteria program at Vernon Secondary and all other schools have implemented Healthy Living	continue with district practice	2009	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		re-use material such as pavement where possible	continue	2009	No End Date (Continuous)
<b>Indoor air quality</b>						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		current school and non-school building review	continue practice and monitor	2010	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		part of purchasing and new construction practice	continue with practice	2009	No End Date (Continuous)
<b>Commuting to and from home</b>						
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress		part of City of Vernon transportation and walking school bus program	current program	2010	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress		available at most sites	as budgets allow	Started before 1995	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress		available at most sites	as budgets allow	2007	No End Date (Continuous)

**School District 22 - Vernon  
Greenhouse Gas Emissions by Source  
for the 2011 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 3,589**

- 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 11:58 AM)**

Total offsets required: **2,791**. Total offset investment: **\$69,775**. Emissions which do not require offsets: **798** \*\*

\*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 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.