

School District 68 (Nanaimo Ladysmith Public Schools)

2012 Carbon Neutral Action Report

Executive Summary

In 2012, School District 68 (Nanaimo Ladysmith Public Schools) continued with its strategic plan to minimize energy consumption and reduce its carbon foot print. Through incentives and a strong partnership with BC Hydro, the district was able to continue another busy year replacing lighting hardware with energy efficient models in several schools and administration buildings. Facilities strategic planning also ensured one school received a condensing boiler upgrade that was paired with the most current building automation system to interface with the existing controls infrastructure. Fleet renewal continued by replacing aging vehicles including 2 new buses providing us with lower fuel consumption, initial maintenance and associated repair costs.

2012 Greenhouse Gas Emissions

The Districts total Green House Gas Emissions under the scope of the Greenhouse Gas Reduction Targets Act in 2012 was 4919 tCO₂e.

Offsets Applied To Become Carbon Neutral in 2012

The total emissions offsets supplied to become carbon neutral is 4,367 tCO₂e plus 46 tCO₂e offset for an adjustment to the 2012 reporting year.

Emissions of 552 tCO₂e resulting from the operation of school busses were not offset as they were out of the scope under section 4(2)(c) of the Carbon Neutral Government regulation but were reported as part of the greenhouse gas emissions profile of 2012 as required by section 5 of the regulation.

Emission Reduction Activities

Thirteen district sites received lighting upgrades this year replacing older inefficient lamps with units up to current standards. This program is ongoing and will continue as new feasible opportunities are discovered.

Three condensing boilers at an elementary school were installed to replace the aging heating plant. These boilers will offer a much more efficient heating source paired with the new building controls program running the system. This upgrade will also make remote troubleshooting easier and allow facilities to audit performance with greater ease.

Student behavioral programs provided a strong awareness of energy reduction and sustainability. Energy reduction programs included: lights off programs, turning off monitors and sweater days. Sustainability programs included walk and bike to school days, school gardens, recycling, online newsletters and community clean ups.

Secondary school student groups who engaged in BC Hydro's Energy Ambassador Program received grants to create a positive change in their schools. One of the schools installed motion sensors in often neglected areas that they felt would improve energy usage.

Plans for 2013-2014 For Continued Green House Gas Reduction

School behavioral programs will remain a priority as they engage students and provide a sense of ownership to the school and its sustainability programs.

A review of two large facilities currently being monitored with real time web enabled meters will be completed. Once the period of data collection ends, a report will allow us to initiate any actions required to run the buildings in a more efficient manner. This may include but is not limited to altering the sequence of operation through the building automation system to maximize the potential of mechanical equipment.

District wide operational strategies of mechanical and lighting systems will be continually reviewed to ensure the latest and most efficient means are employed in our institutions. The addition of the Environmental Systems Technician will assist the Energy Manager to seek out feasible means to continually reduce consumption.

Fleet vehicle renewal will continue including the addition of one electric vehicle complete with charging stations with the support of the City of Nanaimo.

Construction will begin this summer at Hammond Bay elementary schools heat recovery project. This project will recover heat from the city's neighboring treated sewer waste line and transfer it through a heat exchanger to the schools central heating plant where it will be used at the primary heat source. This system will reduce fossil fuel consumption at the site and reduce greenhouse gas emissions by an equivalent of 28.5 tonnes of carbon dioxide each year.



Phil Turin, Secretary-Treasurer

May 16, 2013.

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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	In Development	Started process by compiling information for reference	Drivers will be familiarized with best practices in vehicle fuel consumption.	2013	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	Not Yet Evaluated				No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Not Yet Evaluated				No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	Fuel efficient vehicle options were examined for all potential vehicle replacements	Continuation of program	2011	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	Vehicles are assigned and evaluated constantly for "right sizing"	Vehicles will still be assigned continually for "right sizing"	2011	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Performed regular preventative maintenance	Continue with program	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	Ongoing/In Progress	Ongoing participation	Continuation of initiative	2009	No End Date (Continuous)
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Ask staff to close blinds at end of work day to reduce heating/cooling demands	Not Yet Evaluated				No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	Included in student participation program	Continuation of initiative	2009	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	Use of software to shutdown computers in labs after hours	Continued use of software	2010	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Not Yet Evaluated				No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Not Yet Evaluated				No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Not Yet Evaluated				No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	Replacement computers purchased met Energy Star rating	Energy Star rating is mandatory for new computer purchases	2010	No End Date (Continuous)
Leased buildings					
Establish energy performance baseline for leased buildings	Ongoing/In Progress	Energy Manager has established baselines for all buildings energy consumption	Energy Manager will continue to monitor the performance of each building against it's energy baseline	2011	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Owned buildings					
Establish energy performance baseline for owned buildings	Ongoing/In Progress	Energy Manager has established baselines for all buildings energy consumption baseline	Energy Manager will continue to monitor the performance of each building against it's energy baseline	2011	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	Continued with lighting and boiler upgrade programs	Continuation of upgrade programs	2009	No End Date (Continuous)
Planning/management					
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	Two secondary schools (Dover Bay and Cedar) were enrolled in BC Hydro's Continuous Optimization Program (COP). Both sites had real time metering installed.	Take actions to improve building efficiency based on findings	2011	No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	Boiler upgrade at one elementary school (Bayview) to energy saving condensing technology	Continuation of boiler upgrade program	2009	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	Lighting projects for thirteen buildings completed within the School District	Continuation of the lighting upgrade program	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	Controls upgrades paired with boiler upgrades	Continue with controls upgrades	2009	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Not Yet Evaluated				No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Not Yet Evaluated				No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Not Yet Evaluated				No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	Utilized technology	Continue to use resource where possible	2010	No End Date (Continuous)
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	Utilized content level	Continue with purchasing initiative	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	Utilized Content level	Continue with purchasing initiative	2012	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Not Yet Evaluated				No End Date (Continuous)

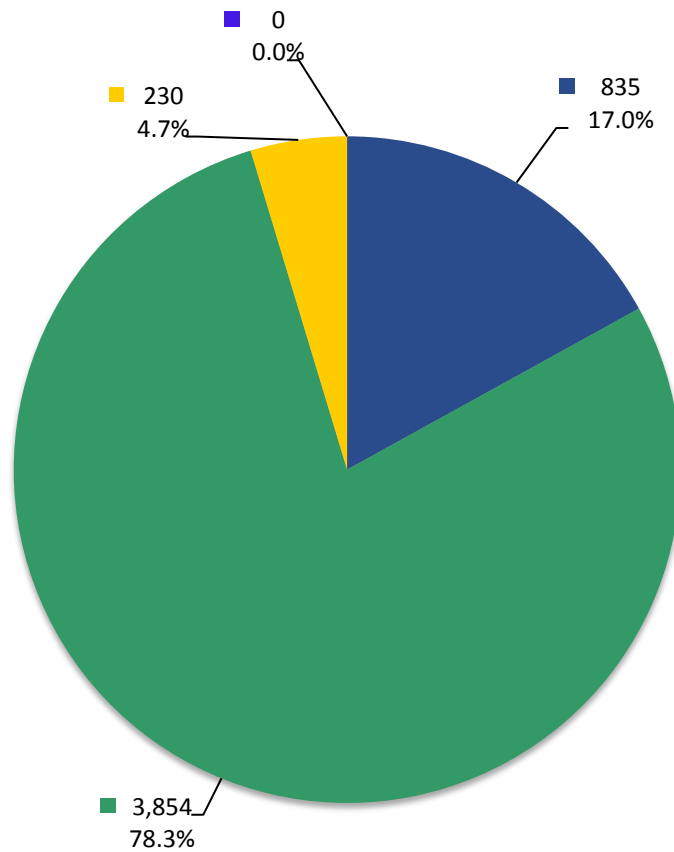
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Actions to Reduce Provincial Emissions and Improve Sustainability					
The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector					
Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Business Travel					
Behaviour change program					
Train staff in web-conferencing	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Not Yet Evaluated				No End Date (Continuous)
Encourage carpooling to meetings	Not Yet Evaluated				No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Not Yet Evaluated				No End Date (Continuous)
Policy and budgeting					
Create a low-carbon travel policy or travel reduction goal	Not Yet Evaluated				No End Date (Continuous)
Virtual meeting technology					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Not Yet Evaluated				No End Date (Continuous)
Make desktop web-cameras available to staff	Not Yet Evaluated				No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Not Yet Evaluated				No End Date (Continuous)
Education, Awareness, and Engagement					
Awards/Recognition					
Establish a sustainability/green awards or recognition program	Not Yet Evaluated				No End Date (Continuous)
Staff Professional Development					
Support green professional development (e.g., workshops, conferences, training)	Not Yet Evaluated				No End Date (Continuous)
Include green options in employee performance measurement system	Not Yet Evaluated				No End Date (Continuous)
Staff awareness/education					
Provide education to staff about the science of climate change	Not Yet Evaluated				No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Not Yet Evaluated				No End Date (Continuous)
Provide green tips on staff website or in newsletters	Not Yet Evaluated				No End Date (Continuous)
Provide sustainability education during new staff orientation	Not Yet Evaluated				No End Date (Continuous)
Team-building					
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	Ongoing student programs	Continuation of student programs	2009	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	Hired Energy Manager	Employ Environmental System Technician and Energy Specialist positions to form Energy and Sustainability team	2010	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g.,	Not Yet				No End Date

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
community-based social marketing)	Evaluated				(Continuous)
Other Sustainability Actions					
Adaptation to Climate Change					
Assessed whether extreme weather events and/or long term changes in climate will affect the organization's business areas	Not Yet Evaluated				No End Date (Continuous)
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	Not Yet Evaluated				No End Date (Continuous)
Building construction, renovation					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress	Reuse and restore office furniture	Continue with program	2008	No End Date (Continuous)
Commuting to and from home					
Introduce telework/work from home policy	Not Yet Evaluated				No End Date (Continuous)
Offer staff a compressed work week	Not Yet Evaluated				No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Not Yet Evaluated				No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Completed (in Previous Year)				No End Date (Continuous)
Provide secure bicycle storage	Not Yet Evaluated				No End Date (Continuous)
Procurement (non-paper supplies)					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Not Yet Evaluated				No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	Not Yet Evaluated				No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Not Yet Evaluated				No End Date (Continuous)
Waste reduction/diversion					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Not Yet Evaluated				No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress	Recyclable waste properly disposed of at appropriate facility	Continuation of initiative	2010	No End Date (Continuous)
Water conservation					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress	Standard practice whenever replacement or new construction occurs	Will continue as standard practice	2009	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	Continued use of rain sensing technology for landscape irrigation	Continue with initiative	2010	No End Date (Continuous)
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Not Yet Evaluated				No End Date (Continuous)

School District 68 - Nanaimo-Ladysmith Greenhouse Gas Emissions by Source for the 2012 Calendar Year (tCO₂e*)



Total Emissions: 4,919

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)
- Fugitive Sources

Offsets Applied to Become Carbon Neutral in 2012 (Generated May 31, 2013 12:04 PM)

Total offsets required: **4,367**. Total offset investment: **\$109,175**. Emissions which do not require offsets: **552** **

*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.