

SD42 Maple Ridge-Pitt Meadows 2011 Carbon Neutral Action Report Overview

Executive Summary

SD 42 has continued to work to reduce energy consumption and carbon emissions. The district has completed an Energy Management Assessment in order to undertake a strategic review of our operations with the purpose of helping us establish a structured energy management program that will deliver sustainable savings into the future. Annual Facilities Grant (AFG) funds are being allocated to support projects aimed at reducing energy consumption and reduce carbon emissions. This process will continue based on available funding.

2011 Greenhouse Gas Emission

SD 42 produced a total of 3,834 tonnes of greenhouse gas emissions from all sources as reported in SMARTTool.

Offsets Applied to Become Carbon Neutral in 2011

Of all the greenhouse gas emissions generated, a total of 4,114 tonnes of emissions offsets have been applied to become carbon neutral for 2011. This total includes 280 tonnes which were produced in 2010 but not reported previously due to billing issues between SmartTool and our Utility Manager Program.

Of our total emissions 7 tonnes did not require offsets as they fell under mobile fleet BioCO₂ and are out-of-scope of the Carbon Neutral Government Regulations.

Emissions Reduction Activities

Actions Taken to Reduce Greenhouse Gas Emissions in 2011

We have completed the second phase of a geothermal installation at one of our secondary schools and upgraded the distributed control system in the old wing of the school. We have replaced the distributed lighting control system at one of our other secondary schools, improving the schedules and reducing overall electrical consumption.

We have reduced our fleet by 2 vehicles and replaced 2 units with smaller more efficient ones. Lighting retrofits and upgrades have been incorporated in facility renovations and continue to be a high priority.

We have completed a re-commission program on one of our elementary schools HVAC Control system to optimize controls and efficiencies.

Operational Changes in 2011

All facilities are undergoing a review to optimize use and energy efficiencies. In this process we have reduced the number of portables in the district by seven. Our intent is to conduct annual reviews of our facility utilization.

Plans to Continue Reducing Greenhouse Gas Emissions 2012 – 2014

We continue to be a Power Smart Partner and where possible and practical we have worked with BC Hydro on lighting upgrades. Two library lighting projects will be completed this year where we are replacing Metal Halide lights with LED fixtures. We will be renovating the lighting system at one of our secondary shops building, revamping the lighting system from T12 to T8 lights and reducing the number of fixtures. The theatre foyer at one of our secondary schools will be upgraded from T12 to T8 fixtures.

We have through our AFG funding undertaken controls upgrades and we will continue this process based on available funding. We will be completing a DDC controls upgrade at a secondary school incorporating occupancy sensors and CO2 monitors in all the rooms.

We will be undertaking a boiler upgrade at one of our elementary schools removing a large older boiler and replacing it with two smaller condensing boilers.

Teachers are leading students in school-based energy savings and these lessons will demonstrate the benefits of reducing gas emissions.



Jan Unwin
Superintendent of Schools
School District 42, Maple Ridge & Pitt Meadows

SD42 Maple Ridge-Pitt Meadows - 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	3	% of vehicles are fuel- efficient models	older 3/4 ton truck replaced with small 2011-1/2 ton van	Upgrade to more efficient units as units expire	2010	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	6	% of vehicles down-sized since start year indicated	older 3/4 ton truck replaced with small 2011-1/2 ton van , Disposed of old 5 ton dump truck	Continue to monitor use and replace units to meet the needs of the department	2010	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	Continue with maintenance program	Continue with maintenance program	2010	No End Date (Continuous)
Behaviour change program							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress			We have not done formalized training but have reviewed with crews the need to reduce idle time, consolidate and plan routes better, and car pool on jobs when practical	Plan to formalize training	2010	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	In Development				Plan to formalize training	2011	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			Continually review with staff	Continue to review with staff, formalize SD policy	2009	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Review with staff the use of Westcoast Express for downtown meeting. Schools have a formalized program to promote walk and bike to school programs	Plan to formalize training	2009	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Planning/management							
Reduce office space (square meters) per employee	Ongoing/In Progress			Disposal of 7 portables	Plan to dispose of 2 portables and continue to analyse facility use	2009	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development				Hydro is in the process of installing smart meters on all our facilities	2011	2012
Owned buildings							
Establish energy performance baseline for owned buildings	Ongoing/In Progress	100	% of owned buildings have an established energy performance baseline	Energy stats are documented and recorded in our Utility Manager Program	Hydro has set up baseline usage stats for all our facilities	2009	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	9	% of owned buildings have undergone energy retrofits since start year indicated	Completed Phase 2 of Geothermal system at Garibaldi Secondary	Install new DDC control system at Westview Secondary	2008	No End Date (Continuous)
Retrofitting owned buildings							

SD42 Maple Ridge-Pitt Meadows - 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
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	3	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	Completed Phase 2 of Geothermal system at Garibaldi Secondary	Upgrade 6 AHU at Westview Secondary, Install 3 new AHU at Garibaldi, Replace old boiler system with 2 new condensing boilers at Eric Langton Elementary	2009	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	20	% of retrofits since start year indicated had lighting systems upgrades	Completed Lighting Control Upgrade at Thomas Haney Secondary	Convert MH Light fixtures in 2 school libraries to LED. Convert Garibaldi Theater foyers from T12 to T8 lighting	2009	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	20	% of retrofits since start year indicated had control system upgrades or adjustments	Replaced pneumatic control on old section of school at Garibaldi Secondary. We have gone through a re-commissioning exercise on the HVAC Control system at one of our elementary schools.	Replace DDC system at Westview Secondary and incorporate occupancy sensors and CO2 monitors.	2007	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	20	% of retrofits since start year indicated had insulation improvements	Continue upgrading windows and insulation	Complete BEP project at District office and Albion Elementary	2006	No End Date (Continuous)
IT power management							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	40	% of computers shut down automatically outside of regular business hours	Approximately 300 Laptop/desktop computers were upgraded with this feature. All new laptops /desktops comply with this requirement.	Continue with this program	2009	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	80	% reduction in printers, copiers, and/or fax machines since start year indicated	All Elementary schools have been upgraded with MFD approximately 44. All new units comply with this requirement	Continue with this program	2010	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	35	% of computers are ENERGY STAR rated	Approximately 300 Laptop/desktop computers were deployed with this feature.	Continue with this program through attrition	2008	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	All units ordered through Purchasing Department are energy star rated	Continue with this program through attrition	2008	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	30	% of other appliances or electronics are Energy Star rated	All units ordered through Purchasing Department are energy star rated	Continue with this program through attrition	2008	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			Custodial replaces units with CFL's	Continue with this program	2008	No End Date (Continuous)
Behaviour change program							
Help staff reduce personal energy use through "workstation tune-ups"	In Development			Supported by Senior Team	Implement program	2010	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			Review with staff	Implement formal program for education	2010	No End Date (Continuous)
Encourage use of stairs instead of elevators	Completed in 2011			Elevators in schools are used for disabled individuals or equipment moving only.		2010	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Reviewed with staff and students	Continue this process	2010	No End Date (Continuous)

SD42 Maple Ridge-Pitt Meadows - 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
Supplies (Paper)							
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	25	% of network printers or photocopiers are set to automatic double-sided	Awareness education to staff	Continue to promote this practice district wide	2009	No End Date (Continuous)
Electronic media in place of paper							
Use electronic document library for filing common documents	Ongoing/In Progress			Promote this policy district wide	Promote this policy district wide	2008	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			District web site expanded	Continue this practice in future	2009	No End Date (Continuous)
Behaviour change program							
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Promoted throughout district	Continue this practice	2008	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress			Promoted throughout district	Continue this practice	2008	No End Date (Continuous)
Other Paper Supplies Actions							
Eliminate paper workorder request by use of Web system	Ongoing/In Progress	99	% of district using system	Paper request are still used in odd circumstances	Work to eliminate paper request all together	2008	No End Date (Continuous)

SD42 Maple Ridge-Pitt Meadows - 2011 Carbon Neutral Action Report

Actions to Reduce Provincial Emissions and Improve Sustainability

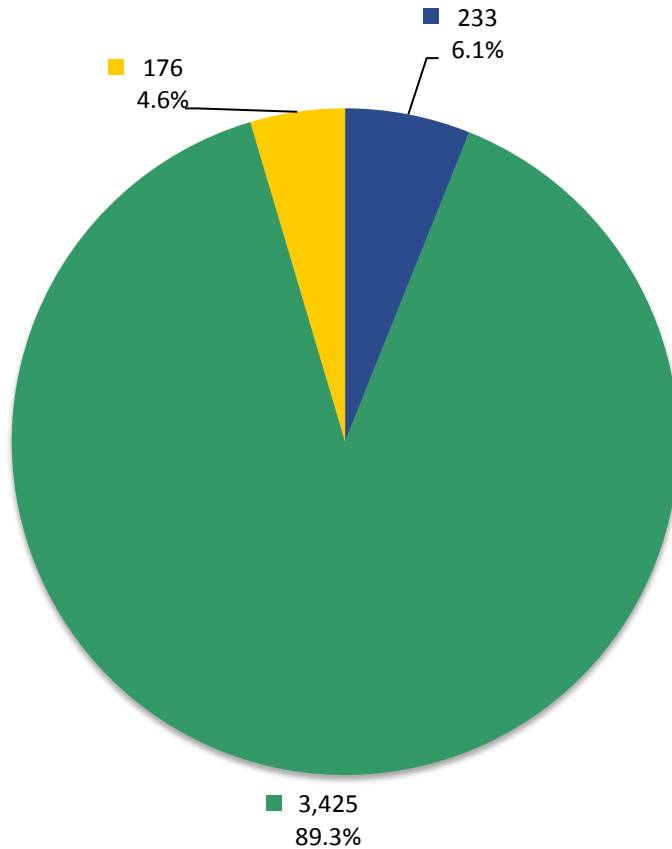
The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the *Greenhouse Gas Reduction Targets Act*. Public sector organizations can optionally use this section to 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
Business Travel							
Policy and budgeting							
Create a low-carbon travel policy or travel reduction goal	In Development				Refer to Senior Team to develop policy	2010	2012
Behaviour change program							
Train staff in web-conferencing	Ongoing/In Progress	10	% of staff are trained web-conferencing	Promote the use of web conferencing and tele conferencing	Continue to promote this meeting option	2009	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress			Promote the use of web conferencing and tele conferencing	Continue to promote this meeting option	2009	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress			Review at all staff meeting	Review at all staff meetings	2009	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Review at all staff meeting	Review at all staff meeting	2009	No End Date (Continuous)
Education, Awareness, and Engagement							
Awards/Recognition							
Establish a sustainability/green awards or recognition program	In Development				Senior Team to develop and implement this program	2012	No End Date (Continuous)
Staff awareness/education							
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress			Material has been presented to maintenance staff and some educational staff	Director of Maintenance developing a program to support staff education in this area	2011	No End Date (Continuous)
Provide green tips on staff website or in newsletters	In Development				Manager of Communication to set up an area on district website to post this information	2012	No End Date (Continuous)
Provide sustainability education during new staff orientation	In Development				Director of Maintenance to provide support to the HR Department to set up orientation packages on sustainability	2012	No End Date (Continuous)
Client/public awareness/education							
Provide green tips on client/public website or in newsletters	In Development				Manager of Communication to set up an area on district website to post this information	2012	No End Date (Continuous)
Other Education, Awareness, and Engagement Actions							
Students are involved in energy awareness	Ongoing/In Progress			Energy awareness classes have been conducted through BC Hydro programs	Expand this process throughout the district	2010	No End Date (Continuous)
Other Sustainability Actions							
Waste reduction/diversion							

SD42 Maple Ridge-Pitt Meadows - 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
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	100	% of our schools participate in a recycling program	Continue to promote and support this program throughout the district	Work with Senior Team to develop composting policy	2008	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress			Disposal Strategy in place	Apply and maintain this strategy	2008	No End Date (Continuous)
Building construction, renovation, and leasing							
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress			Various materials, ie doors, door hardware, lockers and fencing have been reused throughout the district	Develop formal policy to support this program	2009	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	In Development				Will incorporate this in new construction	2011	No End Date (Continuous)
Indoor air quality							
Incorporate low volatile organic compounds (VOCs) standards into procurement policy for products such as paints, carpets, and furniture	Ongoing/In Progress			No progress this year	Continue to look at alternative products	2006	No End Date (Continuous)

**School District 42 - Maple Ridge
Greenhouse Gas Emissions by Source
for the 2011 Calendar Year (tCO₂e*)**



Total Emissions: 3,834

- 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 12:10 PM)

Total offsets required: **3,827**. Total offset investment: **\$95,675**. Emissions which do not require offsets: **7** **

*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.