

Coast Mountains Board of Education School District 82

2010 Carbon Neutral Action Report

Executive Summary

The Coast Mountains Board of Education SD 82 and its 20 schools are working to be leaders in Northern BC in sustainable practices and environmental awareness. Our District's commitment to promoting environmentally friendly practices and reducing our collective carbon footprint is beginning to take hold at all levels of the organization.

There are currently many projects and initiatives that have been carried out in Schools and Classrooms throughout the Coast Mountains School District in 2010. These include but are not limited to: recycling, anti idling, walk to school, turn it off programs for lighting and computers, composting, creating a community garden, tree planting and water conservation awareness. Our schools also participate in a number of celebrations revolving around earth day.

Coast Mountains Board of Education is proud to have supported many energy conservation initiatives over the past 10 years which have contributed to moving us closer to carbon neutrality.

These include District wide lighting upgrades which eliminated the use of both T12 lighting and incandescent lighting in our district, the implementation of direct digital controls for our heating systems and have moved forward with a program to support motion sensor lighting inside our schools and daylight sensors for external lighting control.

In 2008 we started to take steps to further reduce our carbon foot print by starting a boiler replacement program which will significantly reduce our natural gas and propane heating consumption. This program is in partnership with the Ministry of Education.

With data collected within the Smart Tool for the calendar year of 2010, we are looking forward to determining the effectiveness of our initiatives through the comparisons to the upcoming 2011 data. The District will be using this tool as a means by which we plan our gains and measure our successes. Having a consistent format for our data and being able to compare annual gains will go a long way to being able to report our progress and educate our system on the value of our efforts.

Overview

2010 Greenhouse Gas Emissions and Offsets Applied

In 2010, The Coast Mountains Board of Education SD 82 generated a total of 2,548.48 tonnes of CO₂e. In order to become carbon neutral for 2010, our district has purchased and applied \$63,320.00 of emission offsets.

Actions Taken to Reduce Greenhouse Gas Emissions in 2010

The Coast Mountains Board of Education introduced a number of initiatives in 2010 to assist us in meeting the carbon neutral requirements outlined by the Ministry

The Board of Education continues to promote environmental responsibility through the education system in all of our schools by providing both support and information to our school principals, teachers and parent advisory committees throughout our District. Schools employ recycling programs, composting programs, and energy conservation programs within each site. The district will work to coordinate these efforts at a broader level in order to maximize the benefits and create a stronger consistency of program delivery between all schools. The District's new website has been launched in late 2010 and a project for 2011 will be adding an energy conservation element that informs the stakeholders about conservation initiatives and the progress being made.

The School District has purchased and implemented a video conferencing system in 2009 to assist in reducing travel between our five communities. This system has allowed members from each community to attend meetings at our board office throughout 2010 without the need for travel. This has provided the benefits of reduced travel requirements and a time savings for the individuals involved. The video conferencing system has also been used in school facilities to expand in-service opportunities to the other communities in our District.

Our facilities department has continued to utilize the funding provided by the Ministry to continue with our energy reduction initiatives. In 2010 School District No. 82 completed a major mechanical upgrade in Kildala Elementary school which included replacing atmospheric boilers with energy efficient condensing boilers and installing unit ventilators in each classroom. We have also continued to install motion control lighting, LED exit lighting and upgrading our DDC systems as funding permits.

The School District has also embarked on a window replacement program and replaced 22 windows in one of our secondary schools with energy efficient, low E argon filled sealed duo pane vinyl window units.

We have also reduced the number of vehicles in our fleet over this past year. We have retired four older service vehicles and have replaced three of these with new energy efficient models.

Our IT Department upgraded our network in 2009, installing a new server in each of our facilities and blade servers in our main data center. The introduction of blade servers and using virtual server technology has resulted in a reduction in energy consumption for our district. In 2010 we continued to optimize our IT infrastructure by moving our main data farm and further reduced the number of servers in our district. In addition all new computers purchased in 2010 are energy star rated.

Our IT Department upgraded our servers to Windows Server 2008 software which has both allowed us to continue to provide shut down service for our lab computers and reduce the travel requirement of our IT Techs.

This software has allowed us to ensure we can shut down 100% of our computer labs at the end of each school day. In addition 100 % of our equipment has the auto sleep functions operating.

Operational Changes in 2010

In 2010 the school district has closed three school facilities and opened one newer school. This has resulted in lower energy consumption overall.

The School District consolidated a further three bus routes this past year due to declining enrolment. Although our bus services are contracted it has resulted in a reduction of emissions in our area.

Plans to Continue Reducing Greenhouse Gas Emissions 2011 – 2012

The Coast Mountains Board of Education will continue to promote green teams, student learning initiatives, and increase the educational presence on the sustainability committee to provide further support to our schools.

To ensure the continued success of our school based green initiatives our school district is investigating the viability of offering incentives to school for green team initiatives that will raise awareness for sustainability issues their respective school and or communities.

Support of the “Turn It Off” programs, recycling, anti idling campaigns, walk to school, composting, creating community gardens, tree planting and water conservation awareness as well as promoting sustainability through education will continue to be in the forefront of our sustainability programs.

The Board of Education will continue to promote the use of video conferencing/ webinars / live meetings etc as a viable means to assist in reducing our travel requirements.

The District is presently reviewing its purchasing programs and will be examining the viability of introducing purchasing guidelines that require energy star ratings on all electrical appliances and computer purchases. Our purchasing department will continue to review our overall all purchasing practices and patterns to see where efficiencies can be made and travel reduced

Our facilities department is aggressively pursuing energy reduction strategies which will assist the District in reducing our carbon footprint.

The School District will continue to upgrades our boiler plants, mechanical systems and control systems to optimize our energy utilization. During the next three calendar years we are planning to replace the heating plants in six of our facilities. This is based on funding being available.

The School Districts has two lighting design projects which will proceed in 2011 and will continue the district wide lighting design study in our other 18 facilities to optimize the lighting with the goals of reducing our electrical lighting consumption by 17 – 23 %.

The School District in Partnership with BC Hydro is in the process of changing from 32 watt lighting to 28 watt lighting in all classroom and common areas in the district.

The Ministry is assisting the Board of Education in meeting its 2011 reduction goals by providing matching grants for our 2011 Nechako Elementary Energy Efficient Mechanical Upgrade project.

Our program of increasing the insulation values in our roofing systems during roof replacements will continue and we will continue to support our window replacement program which will have a significant impact on both the comfort level and the energy efficiency of our classrooms.

The School District will also continue to review the vehicle requirements in our facilities department with the goals of further reduction in the number of fleet vehicles that are utilized.

Our Custodial Manager is actively promoting the use of Green cleaning products and practices with the goal of ensuring all products used in the cleaning of schools has a limited effect on our environment

Operational Changes

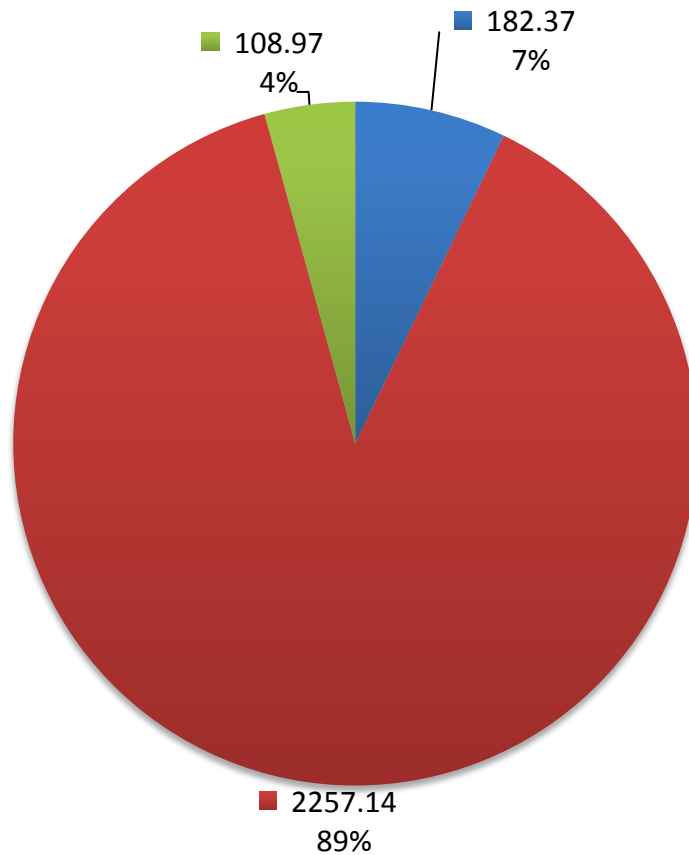
With the continued reduction in student enrolment the Board of Education continues to look at ways to effectively provide educational services to the children in our areas. In the 2011 calendar year the Board of Education will be closing one school with a further closure of a secondary school slated for 2012 which will result in a reduction of energy required to heat and light these facilities as well as a reduction on items purchased. We have major capital plans to further modify our facility footprints to meet the educational needs of our system and continue to become more energy efficient. We look forward to the capital funding that will enable us to move further in this direction.

Alanna Cameron

Acting Secretary Treasurer, Coast Mountains Board of Education School District No 82

Coast Mountains Board of Education Sd 82

Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO₂e*)



Total Emissions: 2548.48

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion and Electricity (Buildings)
- Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2010

Total offsets purchased: **2532.8**. Total offset investment: **\$63,320.00**. Emissions which do not require offsets: **15.68** **

*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.

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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 <i>Greenhouse Gas Reduction Targets Act</i> .							
Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	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			Retired four vehicles, purchased three additional vehicles with more fuel efficient models.	Continue to evaluate fleet requirements with the aim of reducing the number of vehicles in the fleet.	2003	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	In Development				replace large tractor with smaller tractor	2011	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	All fleet vehicles have a regular maintenance schedule	Continue program	2003	No End Date (Continuous)
Behaviour change program							
Provide fleet driver training to reduce fuel use	In Development				set up May training Date	2011	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			Maintenance staff have been instructed on requirement to limit idling. Most Schools have anti idling programs in place	Ongoing instruction to staff regarding department practice. Continue to provide support for school programs	2010	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			Trades have been instructed to pool to project sites	expand program - team up trades where practical	2010	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Schools have promoted walking to school programs	Continue to provide support to schools	2009	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Owned buildings							
Establish energy performance baseline for owned buildings	Ongoing/In Progress	100	% of owned buildings have an established energy performance baseline	Using utility manager software to monitor utility utilization in all facilities.			
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	100	% of owned buildings have undergone energy retrofits since start year indicated	upgraded boiler system in one elementary school in 2010. eliminate Mercury vapour lighting in one elementary school	Lighting redesign in two secondary schools. Install 28 watt energy saver tubes in all facilities.	2003	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress			energy efficient mechanical upgrade to boiler system in one school	energy efficient mechanical upgrade in one elementary school	2003	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	25	% of retrofits since start year indicated had lighting systems upgrades	upgrade light design and reduce fixture count in two projects	two secondary schools scheduled for retrofit on lighting systems with a goal to reduce lighting energy requirements by 25 %	2003	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	100	% of retrofits since start year indicated had control system upgrades or adjustments	upgrade control systems on one elementary and one secondary school	upgrade control systems on one elementary and one secondary school	2009	No End Date (Continuous)

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Improve building insulation (including windows) during retrofits	Ongoing/In Progress			replaced 22 windows with energy efficient models	two schools windows to be replaced	2010	No End Date (Continuous)
IT power management							
Install power management software which shuts down computers outside of regular business hours	Completed in 2010	100	% of computers shut down automatically outside of regular business hours	All desk top computers shutdown at 5 pm with windows server 2008 software	Monitor and upgrade as required	2006	No End Date (Continuous)
Implement server virtualization	Ongoing/In Progress			Complete server upgrade in 2009. 110 virtualized servers on 20 site servers and 3 blade servers. 2010 main data farm moves completed	Continue upgrade and virtualization	2009	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	100	% of computers have auto-sleep settings applied	Continue to ensure settings are active	Continue to ensure settings are active	2008	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	removed smaller printers from service	Review and support	2008	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress	95	% of devices have auto-sleep settings applied	all new equipment is energy star rated with auto sleep functions included	Continue to monitor settings	2008	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	90	% of computers are ENERGY STAR rated	All computer purchased in 2010 where energy star rated	Continue practice	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			All fridges purchased were energy star rated	Continue practice when replacing appliances	2005	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			All appliances purchased are energy star rated	Continue practice when replacing appliances	2010	No End Date (Continuous)
Behaviour change program							
Ask staff to unplug electrical equipment or switch off power bars when not in use	In Development			Promote energy awareness through school administrators	continue to promote program through school administrators	2010	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress			promote energy awareness through school administrators	continue to support program through school administrators	2009	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			Not addressed in 2010	Provide information to school administrators	2011	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Monitor program and provide replacement stickers	continue to promote program	2005	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			started changing out shower heads to low flow heads	continue program	2008	2013
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	In Development	0	% of total paper purchased contains 30% recycled content	evaluated	Include new requirements in tender	2011	No End Date (Continuous)

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Purchase 100% post-consumer recycled paper	In Development	0	% of total paper purchased contains 100% recycled content	evaluated	Include new requirements in tender	2011	No End Date (Continuous)
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	In Development	2	% of network printers or photocopiers are set to automatic double-sided	received information from school administrators	Change copy machines to default to 2 sided printing where practical .	2011	No End Date (Continuous)
Electronic media in place of paper							
Switch to an electronic payroll notification system in place of paper pay stubs	Completed in 2010			completed electronic payroll notification - all staff now receive payroll notification by email	Investigate electronic time sheet system	2009	2013
Behaviour change program							
Encourage re-use of scrap paper	Ongoing/In Progress			re-use has been promoted in all schools for a number of years	continue to promote	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 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Business Travel							
Virtual meeting technology							
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	10	% of computers have web-conferencing software installed	continue practices and promote webinar attendance	continue to promote as alternate to travel	2007	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress	30	% of staff have access to a desktop web-camera	continue practices	continue practices and promote	2000	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	5	% of meeting rooms have access to video-conferencing equipment	additional video conferencing equipment purchased and set up for use in secondary school	evaluate and continue practices	2009	No End Date (Continuous)
Behaviour change program							
Train staff in web-conferencing	Ongoing/In Progress	10	% of staff are trained web-conferencing	training provided to staff who need to use web conferencing	continue to utilize	2000	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress	100	% of staff are trained in video-conferencing or have access to technical support	site administrators turned on video conferencing equipment	Site administrators to train staff as required	2009	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress			Use of webinars and live meetings increasing	continue to promote use of virtual attendance	2006	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress			car pooling encouraged	continue to promote	2007	No End Date (Continuous)
Education, Awareness, and Engagement							
Team-building							
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	In Development			promoted site based green teams	re evaluate program to increase effectiveness	2009	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	In Development			evaluated costs for budget purposes	look at share service between northern districts	2010	No End Date (Continuous)
Awards/Recognition							
Establish a sustainability/green awards or recognition program	In Development				evaluate budget requirements for program		
Staff awareness/education							
Provide education to staff about the conservation of water, energy, and raw materials	In Development			all Maintenance and Custodial staff inserviced. Student education programs in place and students remind staff of conservation requirements	continue to promote	2003	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress			Green tips sent to Administrative officers	continue to promote	2009	No End Date (Continuous)

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Client/public awareness/education						
Provide education to clients/public about the science of climate change	Ongoing/In Progress		Schools have continued to incorporate energy, material conservation and climate change into student studies	continue to promote	2006	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	Ongoing/In Progress		Schools have continued to incorporate energy, material conservation and climate change into student studies	continue to promote	1999	
Provide green tips on client/public website or in newsletters	In Development				2011	No End Date (Continuous)
Other Sustainability Actions						
Water conservation						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress		continued to increase water conservation when replacing fixtures, waterless urinals and water efficient low flow toilets installed in bathroom renovations	investigate no touch facets and continue to replace fixtures with water efficient fixtures	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		continued practices	continue practices	2008	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	Ongoing/In Progress		recycling programs have historically been in place in all school facilities	continue practices	Started before 1995	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		continue to reduce inventories and replace products with less hazardous ones	continue practices	2000	No End Date (Continuous)
Procurement (non-paper supplies)						
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	In Development			purchasing department to develop standards	2011	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		Changed a number of products in our custodial inventories to "Green" environmentally friendly products	continue to look for products that are more environmentally responsible	1999	No End Date (Continuous)
Building construction, renovation, and leasing						
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress		Life Cycle costs are an integral part of all project planning and has been part of the material and equipment selection process in all projects	continue practices	2000	No End Date (Continuous)
Indoor air quality						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		Many of our schools and facilities have scent free practices in place	continue to support practices	2000	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		continue to support program	continue to evaluate products for replacement	2008	No End Date (Continuous)