

Coast Mountains Board of Education, School District No. 82

2009 Carbon Neutral Action Report

Executive Summary

The Coast Mountains Board of Education SD 82 and its 22 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 2009. 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 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.

Overviews

Actions Taken to Reduce Greenhouse Gas Emissions in 2009

The Coast Mountains Board of Education introduced a number of initiatives in 2009 to assist us in meeting the carbon reduction requirements.

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 currently under design will contain 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 to assist in reducing travel between our five communities. This has allowed members from each community to attend meetings at our board office 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 2009 School District No. 82 completed two heating plant upgrades replacing atmospheric boilers with energy efficient condensing boilers. We have also continued to introduce motion control lighting and upgrading our DDC systems as funding permits.

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

Our IT Department has upgraded our network 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 will show reductions in energy consumption for our district. We presently have 110 virtual servers running on our system today. We removed approximately 85 site servers from service.

Our IT Department has also purchased the desk top authority 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. The desktop authority software has allowed us to provide on-line service for the majority of computer work order requests.

Operational Changes in 2009

The Terrace 2010 Winter Games Society leased one of our vacant school facilities to use as the headquarters for the BC Winter Games. This required us to adjust the heat levels in the facility to an occupied level. The use of this facility has also increased the electrical consumption for this facility.

The School District eliminated 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 2010 – 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 in their respective schools 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 is also reviewing 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 upgrade 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 District is also embarking on a district wide lighting design study to optimize the lighting we are providing in all of our facilities with the goal of reducing our electrical lighting consumption by 17 – 23 %.

The Ministry is assisting the Board of Education in meeting its 2010 reduction goals by providing matching grants for at least one of our 2010 mechanical upgrade projects.

Our program of increasing the insulation values in our roofing systems during roof replacements will continue and we will be starting a 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 investigating 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 2010 calendar year the Board of Education will be closing three school facilities which will result in a reduction of energy required to heat and light these facilities as well as a reduction of items purchased.



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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 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	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 7 vehicles replaced three 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)	
Perform regular fleet maintenance to improve fuel-efficiency	Complete	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			In-service maintenance staff	2010	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)
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 for school green team initiatives	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.	Continue to optimize	2003	No End Date (Continuous)
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	100	% of owned buildings have undergone energy retrofits since start year indicated	Two boiler plant upgrades in 2009, controls upgrades on three buildings, Lighting control updates ongoing.	Further replacement of older high temperature boilers in our schools to condensing boilers	2009	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	5	% of retrofits (captured above) had heating, cooling, and ventilation systems upgrades	Two boiler upgrades in 2009	2 Mechanical upgrades and 1 boiler replacement on schedule for this year	2009	
Upgrade lighting systems during retrofits	Complete	100	% of retrofits (captured above) had lighting systems upgrades	Review of lighting design and continued installation of motion controls	Reduce fixture numbers and redesign grid for maximum lighting efficiently and effectiveness	2010	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	100	% of retrofits (captured above) had control system upgrades or adjustments	Continue to expand the ddc systems to optimize performance in three of our facilities	Replace older boards and expand ddc systems	2003	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress			Roofing installation upgrades in 7 sections	Continue with roofing replacement program. Evaluate and implement window replacement program		No End Date (Continuous)

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)		Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
IT power management							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress			Purchased Desktop Authority to replace deep freeze.	Continue implementation	2009	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	Continue upgrade and virtualization	2009	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	80	% of computers have auto-sleep settings applied	All district laptops and desktop computers have settings applied	Continue to ensure settings are active		No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	70	% reduction in printers, copiers, and/or fax machines since start year indicated	New copiers were installed in all facilities in 2008/2009	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	70	% of devices have auto-sleep settings applied	Auto sleep feature in set on district copiers	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 2009 where energy star rated	Continue practice		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		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			Purchasing practices reviewed	Establish and enforce practices		2010
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Complete			We only purchase CF lights / no incandescent lights purchased	Continue practice		No End Date (Continuous)
Behaviour change program							
Ask staff to unplug electrical equipment or switch off power bars when not in use	In Development			Provided information to school Administrators	Continue to raise awareness in schools by promoting energy awareness	2010	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress			Provided information to school Administrators	Promote energy awareness 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			Provided information to School Administrators	Target energy awareness for staff in 2010	2010	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Monitored program and provided replacement stickers	Provide support to green teams to promote lights off challenges in schools	2005	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			replace shower heads with low flow	continue program	2008	No End Date (Continuous)
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	In Development			Specified in tender documents	Continue and evaluate	2000	No End Date (Continuous)

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Purchase 100% post-consumer recycled paper	In Development		Specified in tender documents	Continue and evaluate	2000	No End Date (Continuous)
Printer/document settings						
Switch networked printers and photocopiers to automatic double-sided	In Development			Place on AO conference for evaluation and feedback	2010	2012
Electronic media in place of paper						
Post materials online that were previously printed	In Development			New web site up and running 2010 - staff being trained 2010	2009	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress		Support and excluded staff on system	Have teaching staff added to electronic payroll notification	2009	2012
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		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 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Business Travel						
Virtual meeting technology						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress		Our distance education department continues to use conferencing software to deliver education services to clients	Ongoing	2007	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress		Distance education staff continue to use web cams for provision of services	Continue practice	2005	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress		Video conferencing equipment purchased 2009 and set up in each of our five communities	Promote usage to reduce travel and better utilize time	2009	No End Date (Continuous)
Behaviour change program						
Train staff in web-conferencing	Ongoing/In Progress		Distance ed staff trained	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		Equipment purchased and set up	Continue to expand usage	2009	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		Use of webinars and live meeting increasing	Continue to promote use of virtual attendance	2006	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress		Use of car pooling encouraged. Trustees are setting example for staff	Continue to promote use of carpooling	2007	No End Date (Continuous)
Education, Awareness, and Engagement						
Team-building						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress		Sustainability committee formed	Have Educational presence on team and continue to promote sustainability actions and information to schools	2009	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	In Development			evaluate costs for budget purposes	2010	No End Date (Continuous)
Awards/Recognition						
Establish a sustainability/green awards or recognition program	In Development			sustainability committee project.	2010	No End Date (Continuous)
Staff awareness/education						
Provide education to staff about the conservation of water, energy, and raw materials	In Development		Custodial and Maintenance staff reviewed energy conservation and lights out programs	Student education programs in place in schools. School staff are aware of conservation requirements	2003	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress		Use AO conference to distribute green tips and information to schools	Continue and expand.	2009	No End Date (Continuous)
Client/public awareness/education						

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Provide education to clients/public about the science of climate change	Ongoing/In Progress		Many schools have continued to incorporate energy and material conservation into the students studies.	Continue supporting	2006	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	Ongoing/In Progress		Many schools have continued to incorporate energy and material conservation into the students studies.	Continue supporting	1999	No End Date (Continuous)
Provide green tips on client/public website or in newsletters	In Development			new web site launched in 2010	2010	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		Waterless urinals installed in one facilities. Solenoid controls have been installed on tank type urinals	Continue to replace as washrooms are upgraded. Introduce dual flush fixtures and hands free fixtures as funding permits	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		Installed solenoids on urinal tanks limiting time of day and duration of flush	Replace tank urinals with waterless urinals/ installing dual flush toilets as funding permits	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 practice	1990	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 to inventory and reduce	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	2010	2012
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	In Development		Review of all custodial supplies completed	Change over products to environmentally friendly products	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	1990	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 have scent free policy in place	Continue to support	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		All paints used inside our facilities are specified low VOC latex paints.	Continue to evaluate products for replacement	2008	No End Date (Continuous)