

Delta Board of Education - 2009 Carbon Neutral Action Report

Executive Summary

In 2008, the Delta Board of Education embraced the concept of sustainability through the adoption of a District Sustainability Policy, which set as priorities: conservation, protection, education and regulation. The Board hired a full-time dedicated Energy Manager to oversee sustainable operations with a focus on carbon neutrality, energy conservation, awareness and reporting. The opening Plenary for the 2008/09 school year had as its theme "Greening Our Schools", with guest speakers brought in to make presentations to Principals, Vice Principals, Department Heads and other management on why greenhouse gas reduction, waste reduction, conservation of water and electricity are vital to the region, the continent and the planet.

Numerous initiatives stemming from the above Board actions commenced, including "right sizing" of fleet vehicles to reduce fuel consumption and CO₂, replacement of 40% efficient gas-fired rooftop heating units with 300% efficient air source heat pumps, energy assessments by BC Hydro to identify key tasks to reduce electrical consumption through retrofits, development of a "Sustainable Schools" program, and behavioural change.

Overviews

Actions Taken to Reduce Greenhouse Gas Emissions in 2009

The Delta Board of Education embarked on a program to reduce greenhouse gas emissions, starting with its facilities. A feasibility study was completed to ascertain the most cost effective means to replace 200 antiquated gas-fired rooftop heating units at 20 schools with a more efficient, environmentally friendly heating solution. The option selected was an electric air source heat pump with natural gas backup, which is 300% efficient and calculated to reduce GHG by approximately 450 TCO₂e. Phase 1, consisting of 101 units, was completed in 2008. Phase 2, despite the elimination of government funding (Annual Facility Grant) was completed in 2009 and consisted of 74 units.

Plans were put in place to gradually retire antiquated, low efficiency boilers with high efficiency condensing boilers and set points were adjusted in controls software to widen the window between heating and cooling of spaces to save

Delta School District *Inspired Learning* **DeltaGreen** Search this site

DeltaGreen Home **What is DeltaGreen?**

The Delta School District has taken a proactive role in environmental stewardship for many years. Facilities have been constructed, renovated and retrofitted with energy conservation in mind, schools and other District sites have undertaken paper recycling programs and other waste reduction measures, custodial practices have changed to reduce packaging and incorporate more environmentally friendly cleaning products, and a number of other initiatives have been implemented to do our part in greening our operations. However, we need to do far more in the areas of climate action, conservation of non-renewable resources, water and the environment, and contribution to sustainable region principles established by Metro Vancouver. **DeltaGreen** is the strategy the Delta School District is developing and will focus on bringing us sustainable solutions.

[Click here](#) to open a PDF file of the presentation made to the Board and Principals describing what has been done, what is currently underway and what is planned in the way of sustainable operations for the Delta School District.

"The Board is committed to improving its performance in sustainability" and will endeavour to conduct its operations and make decisions based upon the following priorities:

Conservation: adhering to the principle of conserving electricity, fossil fuels and water through an energy management program designed to optimize energy use, reduce energy consumption and source-out alternative renewable energy sources. This in turn will lead to reduced operating costs and reduction in harmful emissions into the environment while still maintaining the highest possible level of safety, comfort and health for students and staff.

Protection: adopting practices that protect the environment, and in particular our students, staff and the community. Such practices in all District operations shall include, but not be limited to, substitution or elimination of the use of toxic and harmful substances, increased use of recycled and recyclable products, reduction in packaging and solid waste generation, and increased diversion of recyclable materials out of waste streams.

Education: through educational programs, developing in its students and staff an awareness of and commitment to the concept of sustainability by establishing a leadership role in environmental stewardship, seeking to promote responsible attitudes, and fostering a holistic approach to climate change, energy utilization and waste reduction.

Regulation: meeting or exceeding requirements for public sector agencies set forth in Provincial climate action, energy conservation and other pertinent legislation, policy or regulations.

The successful implementation of this policy is the joint responsibility of the Board, District Administration, Principals, teaching and support personnel, students, community and educational partners, and its success is based on cooperation at all levels.

* Sustainability means the capacity of a thing, action, activity or process to be maintained indefinitely and meeting the needs of the present without compromising the ability of future generations to meet their own needs."

District Policy #4510

Places to Visit on this Site

District Framework - what structure is in place in the Delta School District's Sustainability strategy (commitments, reporting relationships)

Capital Projects - what the Facilities Branch has done, is doing, and plans to do to improve energy efficiency and reduce greenhouse gas emissions in District facilities.

Green Initiatives - what is taking place, or planned to take place in District operations, programs, and at schools, as well as success stories and reports.

What Can I Do? - tips on what Delta's students, staff and volunteers can do to help the District's push for sustainable excellence.

Links - links to numerous excellent websites dealing with sustainability, climate action, recycling and other initiatives to green up our planet.

BC Green Games
BC Green Games is a province-wide competition for students in kindergarten to Grade 12, designed to motivate action, create sharing and reward and celebrate the green efforts of schools in BC.
For more information and to register, visit the program website.

February 2010 Green Schools Newsletter
Click here to open.

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Delta School District
Facilities Branch

energy. Real-time electricity metering was piloted in one elementary school and major house lighting retrofits were completed at three secondary school theatres that could conceivably reduce electrical consumption by 93%.

A total of 12 gasoline-powered fleet vehicles (full-size pick-ups, full-size vans) were retired in favour of compact, fuel efficient pickups and mini cargo vans. Enhanced in-house fleet maintenance ensured vehicle emissions were kept to a minimum.

A District Sustainability Committee and “DeltaGreen” Advisory Committee were struck, with members coming from senior management all the way to teaching and support staff and students. A “DeltaGreen” website (<http://maint.deltasd.bc.ca/sustainability/>) was developed to inform and share stories about how the District was becoming green, and a collaborative conference was set up on the District e-mail/intranet as an internal portal for resources. Our Energy Manager continued to visit all schools and District sites to discuss energy conservation and GHG reduction with staff, with follow-up including action plans to take place in 2010/11. A Sustainable Schools program was launched to encourage schools to undertake one-time and on-going projects to conserve energy, reduce waste, compost and other green initiatives.

Plans to Continue Reducing Greenhouse Gas Emissions 2010 – 2012

Our goal, in accordance with the Provincial Climate Change Action Plan, will be to continue to identify opportunities for: the reduction of GHG emissions in all aspects of our business, thus working towards carbon neutrality; the reduction of electricity consumption; and the implementation of alternative, "green" energy sources.

We will continue to replace antiquated, inefficient gas-fired heating appliances (rooftop units, boilers) with high efficiency equipment and continue to fine-tune control systems to reduce natural gas consumption.

Through our District Sustainability and DeltaGreen Advisory Committees, we will continue to advocate for: enhanced waste reduction; default two-sided copying at all locations; turning-off lights, electronics and appliances when not in use; re-use of non-confidential paper; electronic reports over paper reports; recyclable dishes and cutlery; reduction in packaging and recycling of cardboard; and other green initiatives.

We plan to conduct an audit to determine the level of participation throughout the District for energy conservation, waste reduction, carbon footprint reduction, etc.

We also plan to continue the Sustainable Schools Program, with financial support from the District through energy cost savings.

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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			Replaced 2 Dodge Ram 2500 pick-ups with more fuel-efficient Ford F-150 pick-ups	Due to budget restrictions, no steps planned at this time	2008	2009
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress			Replaced 3 Dodge Ram 2500 pick-ups with smaller Ford Ranger pick-ups, and replaced 7 Dodge Ram vans with 7 Dodge Caravan CV mini-vans	Due to budget restrictions, no steps planned at this time	2009	2009
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	Regular maintenance program established and performed on all fleet vehicles by certified in-house technicians	Continuation of program	2008	No End Date (Continuous)
Behaviour change program							
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress			Directives issued to maintenance staff, signs erected at a number of school sites	Complete installation of site signage, additional marketing of program to schools	2008	2012
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Planning/management							
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	3	% of buildings have a real time metering system installed	Installed RTM at Port Guichon Elementary on a pilot basis	Providing sufficient budget is available, expand program to as many as 10 more schools depending on funding	2009	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress			Partial Only. Replaced 70 gas-fired rooftop heating units (60% efficient) with 350% efficient air source heat pumps c/w gas 2nd stage backup	Replace another 98 gas-fired rooftop heating units (60% efficient) with 350% efficient air source heat pumps c/w gas 2nd stage backup (3 schools). Replace existing 70% efficient boilers with 98% efficient condensing boilers (at least 2 schools). All highly dependent on Ministry/other funding and grants	2008	2012
Upgrade lighting systems during retrofits	Ongoing/In Progress			Partial Only. Retrofitted 3 secondary schools' theatre house lighting with LED, 93% reduction	Upgrade hallway lighting and controls with high efficiency fixtures (at least 5 schools). Highly dependent on Ministry/other funding and grants	1991	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress			Partial only. Aggressive controls for HVAC & Lighting during off school hours.	Continue program. Highly dependent on Ministry/other funding and grants	1990	No End Date (Continuous)
IT power management							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	60	% of computers shut down automatically outside of regular business hours	3000 units installed with Faronics Power Save software. Approx 5000 units in District	Continue program where possible (some computers are too old/wrong OS to run the software)	2008	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Complete	80	% of computers have auto-sleep settings applied	4000 units installed with Faronics Deep Freeze software. Approx 5000 units in District	No further steps to be taken (cannot install software on remaining units - too old)	2006	2009

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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
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress	80	% of devices have auto-sleep settings applied	Continued programming where applicable	Continue program where possible (some units don't have the sleep mode capability)	2006	2011
Appliances and electronic devices							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	35	% of fridges are ENERGY STAR rated	Refrigerators replaced with ENERGY STAR units as they failed	Refrigerators to be replaced with ENERGY STAR units only when they fail	1995	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			Appliances replaced with ENERGY STAR units as they failed	Appliances to be replaced with ENERGY STAR units only when they fail	1995	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			Bulbs and lamps replaced with CFL units as they failed	Bulbs and lamps to be replaced with CFL units when they fail	1995	No End Date (Continuous)
Behaviour change program							
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress	10	% of current staff have completed a workstation tune-up	5 workplace energy conservation workshops held (maintenance, custodial & board office staff), approx 200 attendees	Additional workplace energy conservation workshops to be held at schools	2009	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			Posted on District Sustainability Website http://maint.deltasd.bc.ca/sustainability/ and intranet, discussed at workplace energy conservation workshops, including in newsletters	Additional workplace energy conservation workshops to be held at schools	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			Custodians requested to close blinds, shutters and sliding panels	Continued monitoring for conformance	2008	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			Posted on District Sustainability Website and through newsletters	Maintain/enhance information on website	2009	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	50	% of District facilities posting Turn It Off light switch stickers	Stickers supplied to all sites, information posted on District Sustainability Website	Remind schools to install stickers, improve compliance	2008	2011
Promote hot water conservation	Ongoing/In Progress			Posted on District Sustainability Website, Custodians using cold water chemical cleaners	Maintain/enhance information on website	2008	2011
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	30	% of total paper purchased contains 30% recycled content	Once existing paper stocks were depleted, replaced majority with 30% recycled content for general printing/copying	Targeting 90% use of 30% recycled content paper	2008	2012
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	Complete	54	% of network printers or photocopiers are set to automatic double-sided	Completed settings where possible on the machine (many printers in District don't have the capability), some schools refused to switch to duplexing	Continue to pursue non-compliant schools to switch to duplexing	2008	2011
Electronic media in place of paper							

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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
Use electronic document library for filing common documents	Ongoing/In Progress			Continued to use District Websites and intranet for storage of frequently accessed documents (policies, procedures, forms, drawings, etc.)	Continued advocacy for initiative	2006	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Complete			Implemented "Employee Connect" on-line system for payroll		2009	2009
Behaviour change program							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Complete	100	% of staff currently have received collaborative software training	Continued to use FirstClass software for e-mail, discussion groups, collaboration and data repository		2006	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Continued advocacy for initiative	Continued advocacy for initiative	2007	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress			Continued advocacy for initiative	Continued advocacy for initiative	2003	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			Installed as needed	Install as needed	2006	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress			Installed as needed	Install as needed	2008	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Complete			Mobile unit in place, no plans for meeting room videoconferencing		2004	2009
Education, Awareness, and Engagement							
Team-building							
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	50	% of Schools with some form of Green Team	Established DeltaGreen program - District Advisory Committee, site based Green Teams, 50% of schools are involved in various initiatives	Increase participation of schools to 100%	2008	2012
Provide resources and/or dedicated staff to support teams	Complete			Energy Manager in place		2008	2009
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress			BC Hydro Student Programs - 4 Secondary Schools involved in BC Hydro Energy Ambassadors program, Presentations to Elementary Schools. Elementary Schools involved in the BC Hydro Energy Detective Program Grades 1-3	Continue with BC Hydro and District Student Programs	2004	No End Date (Continuous)
Awards/Recognition							
Establish a sustainability/green awards or recognition program	Ongoing/In Progress	26	% of schools awarded sustainability grants	Developed Sustainable Schools Program, with Green Teams submitting project proposals and, upon approval by the District Advisory Committee, schools awarded \$1,000 grants	Continue and enhance program	2009	No End Date (Continuous)
Staff Professional Development							
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress			Conducted PowerSmart workshops for staff at Board Office, Operations Centre, Custodians, provided on-going Pro-D to management staff	Continue to provide Pro-D and workshops as budget permits	2009	No End Date (Continuous)
Staff awareness/education							
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress			Provided schools with access to Utility Manager database for past utilities usage to see how they can conserve energy and water, provided tips and links to on-line tools and programs via Sustainability Website	Continue to explore other educational programs and tools and suggest implementation to Learning Services and schools	2009	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Complete			Published tips in DeltaGreen FirstClass conference and Sustainability Website		2009	2009
Client/public awareness/education							

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Provide green tips on client/public website or in newsletters	Complete		Published tips on Sustainability Website		2009	2009
Other Sustainability Actions						
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		Developed and published District Sustainability Policy	Study and develop District Procedure	2009	2012
Procurement (non-paper supplies)						
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		Continued to use sustainable products (environmentally friendly, minimal packaging) in custodial operations	Continue to implement program	2007	No End Date (Continuous)
Building construction, renovation, and leasing						
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress		All Project Identification Reports submitted to the Ministry of Education for Seismic Upgrades contained life cycle costing	Continue to submit PIRs with LCC	2009	No End Date (Continuous)
Indoor air quality						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Complete		All sites have implemented some form of a scent-free policy		2000	2009
Incorporate low volatile organic compounds (VOCs) standards into procurement policy for products such as paints, carpets, and furniture	Ongoing/In Progress		Informal policy implemented by Facilities Branch for the purchase of paints and floor finishes	Continue to implement program	2004	No End Date (Continuous)