



2011 Carbon Neutral Action Report

March, 2012

Executive Summary -

Cooler than average temperatures and higher than average precipitation in the first six months of the 2011 calendar in part contributed to an 11% increase in the School District's stationary carbon fuel consumption. In addition, school district buildings have continued to experience increased levels of community use outside of traditional instructional hours thus adding to the amount of time required to operate heating and air handling systems. These factors, tempered by the reduction in electrical and water consumption Mission Public Schools experienced an overall increase of nearly 6% in CO²(e) emissions in comparison to the 2010 calendar year.

From a systemic perspective the most substantive change in promoting a cultural of environmental awareness and sustainability resulted from the adoption of administrative procedures to guide staff behaviour and establish annual target thresholds for the reduction of GHG's (http://www.mpsd.ca/districtinformation/procedure_manual.aspx). The partnership with B.C. Hydro as a PowerSmart Partner was renewed and a dedicated Energy Manager continued to be shared under the joint initiative with the municipality of Mission. Budget restrictions dictated that the Manager of Environmental Sustainability not be replaced following the retirement of the incumbent in June. The loss of this position significantly impacted on staff ability to continue with initiatives that had been taking place in the areas of waste reduction/recycling, water conservation and cultural change.

Other initiatives did continue including a system wide switch to T8 fluorescent bulbs at the 25watt level in a majority of system buildings. The lighting changeover along with the installation of room occupancy sensors at selected sites and a number of other minor projects served to generate a reduction of approximately 400 000 kilowatt hours of electrical consumption across the district.

2011 Greenhouse Gas Emissions Offsets Applied to become Carbon Neutral in 2011

To become carbon neutral for 2011, the School District has calculated that 2077 tonnes of CO² emission offsets purchases were required resulting in an operating expenditure of \$58,156 (incl. HST). As required by Section 5 of the Carbon Neutral Government Regulations, 375 tonnes CO²(e) of emission resulting from the operation of school buses were reported as part of our greenhouse gas emissions profile in 2011. However, they were not offset as they are out-of-scope under section 4(2)(c) of the Carbon Neutral Government Regulation. For 2011, the total emissions for the District were 2,451 tons.

Emissions Reduction Activities

- Actions Taken to Reduce Greenhouse Gas Emissions in 2011

In 2011, Mission Public Schools has taken a number of actions aimed at reducing Greenhouse Gas (GHG) Emissions. Initiatives have included technical/infrastructure projects, community awareness and involvement, as well as student-lead projects (e.g. energy audits, school assemblies).

Locally funded projects included the following:

- Replacement of boiler plant at West Heights Elementary with high-efficiency boiler system
- Wattage reduction across a majority of district facilities that is projected to save in the area of 200 000 kilowatt hours of electrical energy annually
- Replacement of three heat circulating pump motors with variable frequency drive motors to optimize performance
- Installation of room occupancy sensors in School Board Offices and three schools
- Phase II installation of Water Matrix water conservation monitors to better manage water consumption in school washroom facilities
- Two domestic hot water systems replaced with 'on-demand' systems to mitigate function of constant temperature retention typical of conventional hot water tanks
- Cultural Change - Energy Ambassadors and School Green Teams encouraged behavioural change in terms of diverting solid waste and recycling
- Four secure recycling compounds bought and elementary school specific programs launched to accommodate composting as well as staff time dedicated to collection and supervision of the composting and recycling program
- Specific School District Administrative Procedures formally set in place to govern Purchasing, Personal Appliances, Irrigation, Waste Management, and setting annual reduction targets.

- Plans to Continue Reducing Greenhouse Gas Emissions 2012 – 2014

A number of specific plans have been identified to continue to reduce the production of GHG's and foster a culture of environmental sustainability amongst students, staff and the public in general. These include:

- Ongoing deployment of room occupancy sensors to all buildings where the application is practical
- Continuing to transition to high efficiency boilers and on-demand domestic hot water supplies at elementary schools
- Expansion of the waste reduction/recycling and composting programs to all elementary schools
- Upgrading of outdated lighting systems in three buildings
- Continued virtualization of district's technological infrastructure
- Continued support for the Energy Ambassadors Program at the secondary schools and the Green Teams at elementary schools
- Program optimization through upgraded DDC systems in all buildings based on occupancy requirements

Realistically these initiatives are all contingent on a shrinking pool of capital resources which inevitably will have an impact on the ability of Mission Public Schools to deliver on any or all of these options.

A handwritten signature in cursive script that reads "B. Fletcher".

Bill Fletcher
Acting Superintendent of Schools
Mission Public Schools

Mission Public Schools (SD # 75) - 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	0	% of vehicles are fuel- efficient models	No vehicles replaced	As budget allows vehicles will be replaced by more fuel efficient or alternate energy models	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	Vehicles are inspected weekly and serviced on a regular schedule of preventative maintenance	Ongoing	2010	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress	0	% of small maintenance vehicles are fuel-efficient	No vehicles replaced	None	2008	No End Date (Continuous)
Behaviour change program							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	50	% of current drivers are trained	None	Provide training annually as opportunity allows	2008	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			None - Practice in place	None	2008	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			System practicality & viability assessed -limited application	As opportunity affords and at the discretion of vehicle operators	2011	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Planning/management							
Enrol in a building energy benchmarking program (e.g., GREEN UP)	Ongoing/In Progress			Relamping (T12 fluorescent to T8 fluorescent 32watt) across the system where ballasts allow	Complete relamping by eliminating remaining magnetic ballasts and installing T8 lamps	2011	2012
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development	0	% of buildings have a real time metering system installed	No time, no money to incorporate controls	None	2014	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	10	% of owned buildings have undergone energy retrofits since start year indicated	Program unsustainable owing to restricted budget - full facility audit completed	None	2008	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	10	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	One school had high efficiency boiler installed for heating sytem.	None - Insufficient funds to continue annual replacement plan	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	10	% of retrofits since start year indicated had lighting systems upgrades	Relamping occurred in all buildings and room occupancy sensors were installed in selected locations however lighting systems in total were not replaced	Continued work on selective system components as budget allows	2010	2012

Mission Public Schools (SD # 75) - 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/adjust control systems during retrofits	Ongoing/In Progress	0	% of retrofits since start year indicated had control system upgrades or adjustments	None	None	2008	No End Date (Continuous)
IT power management							
Implement server virtualization	Ongoing/In Progress	90	% of servers have been virtualized since start year indicated	Ongoing virtualization of servers as system capacity allows	Continue server virtualization as demand presents	2010	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	90	% of computers have auto-sleep settings applied	Power Management software incorporates this function	Add workstations as they are added to the system	2010	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	75	% reduction in printers, copiers, and/or fax machines since start year indicated	Five tonnes of electronic devices removed to recycling	Additional removal of deleted electronic devices in June of each year + removal of staff personal electronic devices from school district buildings	2011	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Completed in 2011	100	% of devices have auto-sleep settings applied	MFD on-board energy management default setting for all facilities		2011	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	35	% of computers are ENERGY STAR rated	One-third of schools in system "evergreened" - Energy Star spec incorporated	Replacement of 400 work stations to Energy Star specifications as part of "evergreening technology" initiative.	2010	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	30	% of fridges are ENERGY STAR rated	Purchasing procedure formally implemented across the school district to ensure Energy Star appliances purchased Decommissioned 5 fridges and freezers	Continued transition & monitoring	2010	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			District purchasing policy requires purchase of appliances rated in the top 30% of Energy Star rankings. District employees are also enjoined from locating personal appliances at their workplace.	Continued transition & monitoring	2010	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			On site 'walkabout' audits	Continued transition & monitoring	2010	No End Date (Continuous)
Behaviour change program							
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress			On site 'walkabout' audits	Continued transition & monitoring	2010	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			On site 'walkabout' audits	Continued transition & monitoring	2010	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			On site 'walkabout' audits	Continued transition & monitoring	2010	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	15	% of school classrooms and offices have been fitted with room occupancy sensors	Occupancy sensors installed in rooms at various locations	Continued conversion as budget allows	2011	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	15	% of buildings have had domestic hotwater converted to 'on-demand' system	2 additional sites converted	Continued conversion as replacement schedule of domestic hotwater tanks is required	2010	No End Date (Continuous)
Supplies (Paper)							

Misson Public Schools (SD # 75) - 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
Paper Type							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	100	% of total paper purchased contains 30% recycled content	Purchasing policy now requires minimum 30% recycled content	None	2011	2011
Purchase 40% post-consumer recycled paper	In Development				None	2014	2014
Purchase 100% post-consumer recycled paper	In Development				None	2014	2014
Printer/document settings							
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	75	% of network printers or photocopiers are set to automatic double-sided	MFD's default mode set to duplex where operation allows	Continue to change over as culture allows	2010	No End Date (Continuous)
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	Ongoing/In Progress	75	% of network printers have 'print and hold' settings applied	MFD's are networked printers, some sites slow to participate in "print & hold"	Continue to change over as culture allows	2010	No End Date (Continuous)
Electronic media in place of paper							
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	95	% of staff workstations with software installed	SharePoint environment deployed in Spring, 2010	Continue to add workflow and sharing opportunities in the SharePoint environment to increase usage across the system	2010	2011
Use electronic document library for filing common documents	Ongoing/In Progress			Function of SharePoint	As above	2010	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			Function of SharePoint	As the culture changes and usage increases	2010	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress			Work station access and staff reluctance require that this initiative will be ongoing. All new staff are required to go on electronic notification	None	2010	No End Date (Continuous)
Behaviour change program							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Completed in 2011	95	% of staff currently have received collaborative software training	All sites received demonstration and exposure to SharePoint site.	More training will be scheduled as job action allows.	2011	2012
Encourage re-use of scrap paper	Ongoing/In Progress			Nothing formal or system wide	None	2008	No End Date (Continuous)

Mission Public Schools (SD # 75) - 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						
Virtual meeting technology						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	1 % of computers have web-conferencing software installed	Virtual classrooms (video conferencing) established at 3 of 4 secondary schools primarily to share instruction for low enrolling courses but also available to conduct staff functions	None	2010	2011
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Completed in 2011	1 % of meeting rooms have access to video-conferencing equipment	As above.	No additional installations planned - cost prohibitive	2010	2011
Behaviour change program						
Train staff in web-conferencing	Ongoing/In Progress	3 % of staff are trained web-conferencing	Staff using the the Video Conferencing equipment are trained on an as needed basis.	Continue to provide training as required	2010	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress	3 % of staff are trained in video-conferencing or have access to technical support	As above.	Continue to provide training as required	2010	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		The option for mode of participation is at staff discretion	None	2010	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress		Ongoing promotion and staff awareness	Continued promotion as a viable option	2010	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		Student Energy Ambassadors did not convene owing to job action. SD Climate Action Advisory Committee did not meet.	Contingent on staffing	2010	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress		Environmental Sustainability Manager retired. Position not filled owing to budget constraints.	None	2010	2012
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Completed in 2011		Some site based training and environmental awareness complete up to May, 2011 at various sites.	Add sites to 4-Bin Recycling (composting & recycling) initiative as time and staff allow.	2010	No End Date (Continuous)
Staff Professional Development						
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress		Mitigated by job action	Continue to raise awareness levels(culture change) - e.g. 4-Bin recycling palced at all district events/Encourage staff participation in 'green' professional development	2011	No End Date (Continuous)
Staff awareness/education						
Provide education to staff about the science of climate change	Ongoing/In Progress		Updates in system newsletters	Updates in system newsletters	2009	No End Date (Continuous)

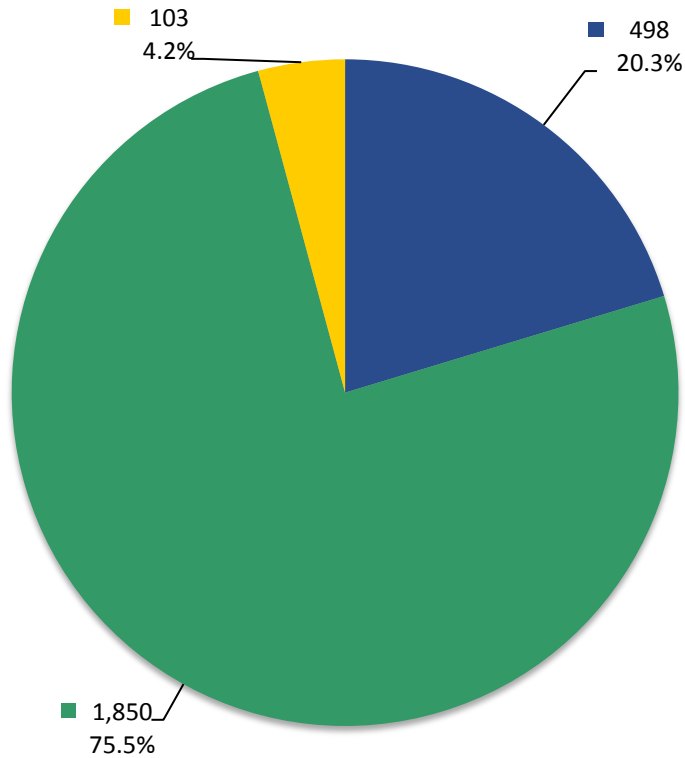
Misson Public Schools (SD # 75) - 2011 Carbon Neutral Action Report

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
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress		Public presentations and community Climate Action Advisory Committee	None	2010	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress		Incorporated into newsletters to district sites	Continue current practice	2010	No End Date (Continuous)
Client/public awareness/education						
Provide education to clients/public about the science of climate change	Ongoing/In Progress		Ongoing awareness and communications provided as well as documentation of avoided costs	Continue current practice	2009	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	Ongoing/In Progress		Ongoing monitoring and measuring communicated to constituents	Continue current practice	2010	No End Date (Continuous)
Other Education, Awareness, and Engagement Actions						
Administrative Procedures including resource reduction targets incorporated into operating procedures	Completed in 2011		Series of Administrative Procedures adopted across the School District to guide behaviour.		2011	2011
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		Policy ratified and plan initiated	Ongoing implementation	2010	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		20 additional water management devices purchased for schools	Ongoing installation	2010	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		Part-time staff member hired to remove recycling and composting from participating sites	Ongoing implementation	2009	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		Schools/site electronic recycling collected annually as part of summer shut down procedure. Electronic audits of sites carried out to remove surplus and personal electronic devices.	Ongoing implementation and monitoring	2009	No End Date (Continuous)
Procurement (non-paper supplies)						
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress		Procedure applied and shared as standard across school system	Ongoing implementation, monitoring and revision of criteria as applicable	2010	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		Biodegradable products tested and purchased where product is effective and the option exists.	Ongoing implementation, monitoring and revision as applicable	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		Routine recycling and repurposing of construction materials where feasible is practised by Maintenance staff	Ongoing	2008	No End Date (Continuous)
Indoor air quality						

Mission Public Schools (SD # 75) - 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
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress			School sites adopt the practice at their individual discretion	None	2008	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			Procurement policy implemented where suitable products with low VOC's	Ongoing implementation and review	2009	No End Date (Continuous)

**School District 75 - Mission
Greenhouse Gas Emissions by Source
for the 2011 Calendar Year (tCO₂e*)**



Total Emissions: 2,451

- 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 12:34 PM)

Total offsets required: **2,077**. Total offset investment: **\$51,925**. Emissions which do not require offsets: **375** **

*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.