

School District No. 6 (Rocky Mountain)

2012 Carbon Neutral Action Report

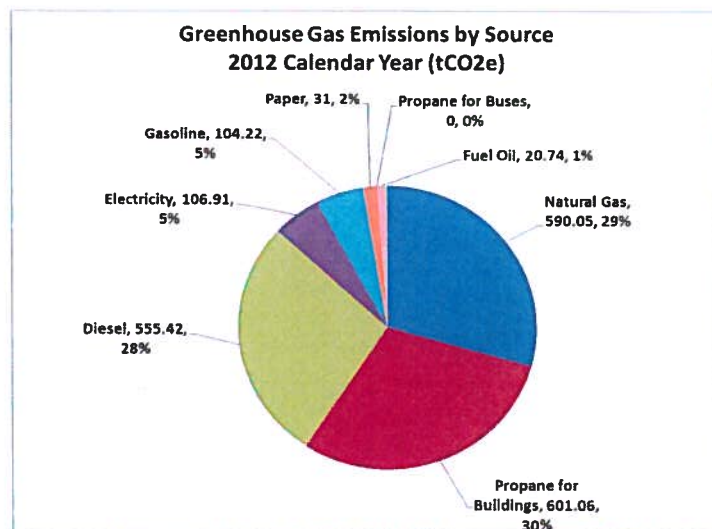
Executive Summary

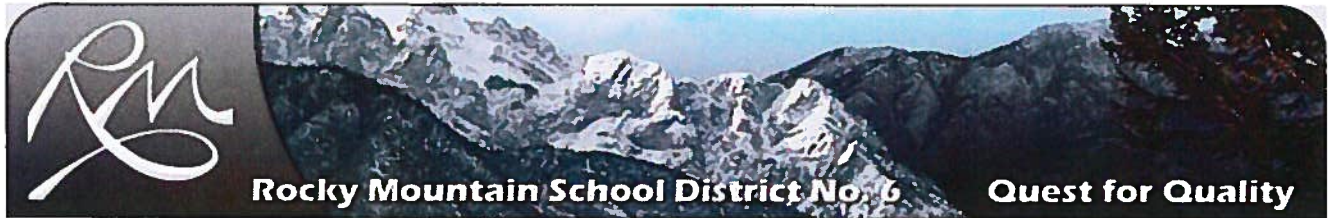
The Rocky Mountain School District has continued to make progress in reducing greenhouse gas emissions in 2012, with an overall reduction of emissions that are eligible for offsets of 197 tonnes or 12% compared to last year, and a reduction of 538 tonnes or 28% compared to 2008. The main source of these energy and greenhouse gas savings were due to the implementation of building energy retrofit projects, and changes to the operation of buildings and vehicles. The school district's executive level focus on environmental stewardship has been the key driver for success in reducing greenhouse gas emissions since it has led to the prioritisation of staffing resources, capital projects, and environmental education towards energy reduction and environmental stewardship.

Cameron Dow
Secretary Treasurer

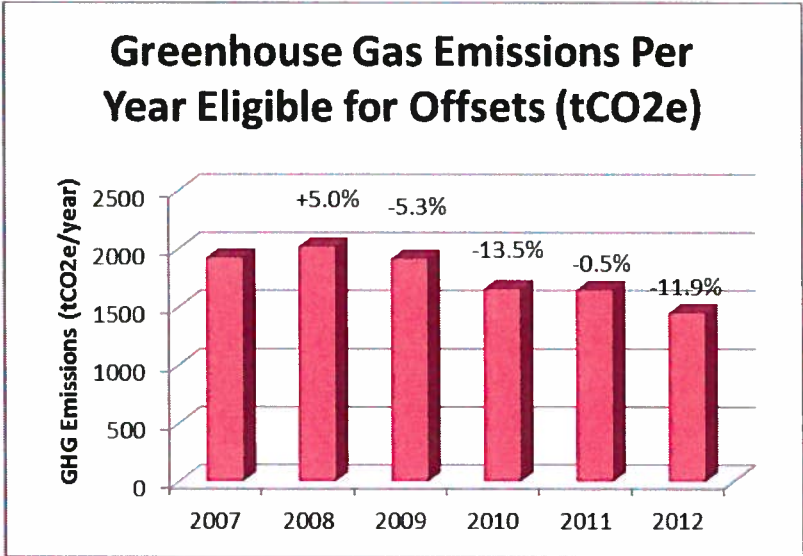
2012 Greenhouse Gas Emissions

A total of 1450 tonnes of greenhouse gas emissions were emitted by the school district during the 2012 calendar year, from all sources covered by the Greenhouse Gas Reduction Targets Act. A breakdown of emissions by source is included in the pie chart shown below.





The school district has reduced total greenhouse gas emissions eligible for offsets by 197 tonnes or 12% compared to last year, and a reduction of 538 tonnes or 28% compared to 2008, as shown in the graph below.



Offsets Applied to Become Carbon Neutral in 2012

The school district purchased a total of \$36,250 (+ GST) in carbon offsets to become carbon neutral for the year 2012. Carbon offsets were purchased from the Pacific Carbon Trust at a cost of \$25 per tonne, to offset 1450 tonnes of greenhouse gas emissions. An additional 559 tonnes of greenhouse gas emissions were emitted from the operation of the district’s school bus fleet, however those emissions were not offset with the purchase of carbon credits because they are out of scope under section 4(2)(c) of the Carbon Neutral Government Regulation.



Emissions Reduction Activities

Actions Taken by the Rocky Mountain School District to Reduce Greenhouse Gas Emissions in 2012

An Energy Manager, hired in 2009 with the assistance of BC Hydro, led the planning and implementation of projects to reduce energy consumption and greenhouse gas emissions in 2012. On-going benchmarking of energy performance for buildings, vehicles, and other energy consumption areas was used to identify and target key opportunity areas for energy reduction. Projects to reduce energy consumption and greenhouse gas emissions implemented in 2012 included:

- Replacement of the gymnasium heating system which consisted of old inefficient natural gas fired boilers. Installation of new high efficient condensing boilers complete with new DDC controls and new occupancy sensors through-out the school improve operational efficiency at McKim Middle School.
- HVAC and DDC controls upgrade at Blarhmont Elementary School.
- Replacement of CO2 sensors at Lindsay Park Elementary to improve operational efficiency.
- Replacing door and window weather-stripping at Operations buildings.
- Installation of Video Conferencing system which has resulted in reduction of employee travel within the district.
- During 2012 schools continued to promote practices such as recycling, composting, operating greenhouses, and planting trees.

Plans to Continue Reducing Greenhouse Gas Emissions 2013 – 2015

Our School District will need to overcome a significant hurdle to continue pro-active carbon reduction activities. Our Energy Manager was presented with a promotion opportunity in the Fall of 2012 and, as a result, left our District to work for another organization. He was very successful in leading and managing our carbon reduction strategies, projects and efforts over the past few years. Adding to this hurdle, changes to the Energy Manager program at BC Hydro have resulted in our support funding for this position being discontinued. The loss of this key individual, who had the time to focus efforts on carbon reduction, will create a significant challenge for our School District to maintain the same level of focus on greenhouse gas reduction.



Reducing energy consumption and greenhouse gas emissions continue to be a key focus for the Rocky Mountain School District. Projects planned for the next three to five years show the potential for the school district to save energy costs, while significantly reducing greenhouse gas emissions and contributing towards becoming carbon neutral. Some projects planned for the next three years include:

- Replacement of old inefficient pneumatic control system with a new DDC control system at Selkirk Secondary.
- Installation of a new HVAC system for the IE Shops at Selkirk to improve ventilation which will eliminate the operation of old inefficient systems.
- Replacement of five (5) inefficient boilers at Alexander Park Elementary School with new high efficient condensing boilers complete with upgraded DDC controls.
- Replacement of two (2) old inefficient oil fired boilers with new high efficient condensing furnaces complete with the installation of a new DDC control system at Golden Alternate School.
- Boiler upgrades at a two (2) elementary schools.
- DDC control installations on various buildings.
- Gymnasium occupancy control of ventilation systems.
- Lighting upgrades and installation of occupancy controls throughout the district.
- Increased roofing insulation and wall insulation with cladding and roof upgrades at a number of buildings.
- Student and employee behavioural change education projects.

School District 06 Rocky Mountain - 2012 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	Steps Taken	Steps Planned	Start Year	End Year
Mobile Fuel Combustion (Fleet and other)					
Behaviour change program					
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	Annually we provide Bus Driver training which includes a refresher on SMART Driver concepts. The SMART Driver program was designed for school bus drivers by Natural Resources Canada. We initially presented SMART Driver to our school bus drivers in 2008.	We plan to continue to teach SMART Driver concepts to our drivers.	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	Annually we provide Bus Driver training which includes a refresher on our School Bus Idling Practice which was implemented in 2010. During extremely cold weather we limit our idling to 5 minutes. While loading or unloading students on school grounds, buses shut down to minimize idling. Our white fleet drivers follow our District Owned Vehicle Idling Practice which was implemented in 2010. The practice restricts vehicles from left sitting idling while parked. The only exception is when warming up vehicles in extremely cold weather, the practice limits idling to 5 minutes. Vehicles are to be shut off when making deliveries.	We plan to continue our refreshers on our Idling practices.	2010	No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	Experimented with bus fleet during the winter of 2012. Engine cooling fans were disconnected during cold weather. Engine temperature was maintained due cold weather. Fuel efficiency was improved. Analysis is on-going.	Continue to monitor options to improve fuel-efficiency of white fleet and buses.	2010	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	White fleet reviewed to identify purpose of each vehicle to determine which vehicles could be replaced with smaller more fuel-efficient vehicles.	Replacement of Supervisor pick up truck with more fuel-efficient smaller vehicle.	2012	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Vehicles are maintained on a regular basis by our own staff. Weekly our white fleet drivers perform vehicle pre-trip inspections. They monitor a variety of items including fluid levels, condition of air filter and tire pressure. Daily our school buses are pre-tripped by our drivers monitoring many items including tire pressure which ensures safety and assists with fuel-efficiency.	Continue with our vehicle and bus pre-trip inspections.	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through "workstation tune-ups"	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	We continue to encourage staff to unplug electrical equipment and or switch off power bars when they are not in use.	Continue to work with Schools and staff to encourage them to unplug devices when they are not in use.	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Our staff close blinds at the end of the work day. This action has been implemented for security reasons however it has become an energy efficiency benefit as well.	Continue to monitor and encourage staff to make sure blinds are closed at the end of the work day.	2008	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Not Yet Evaluated				No End Date (Continuous)

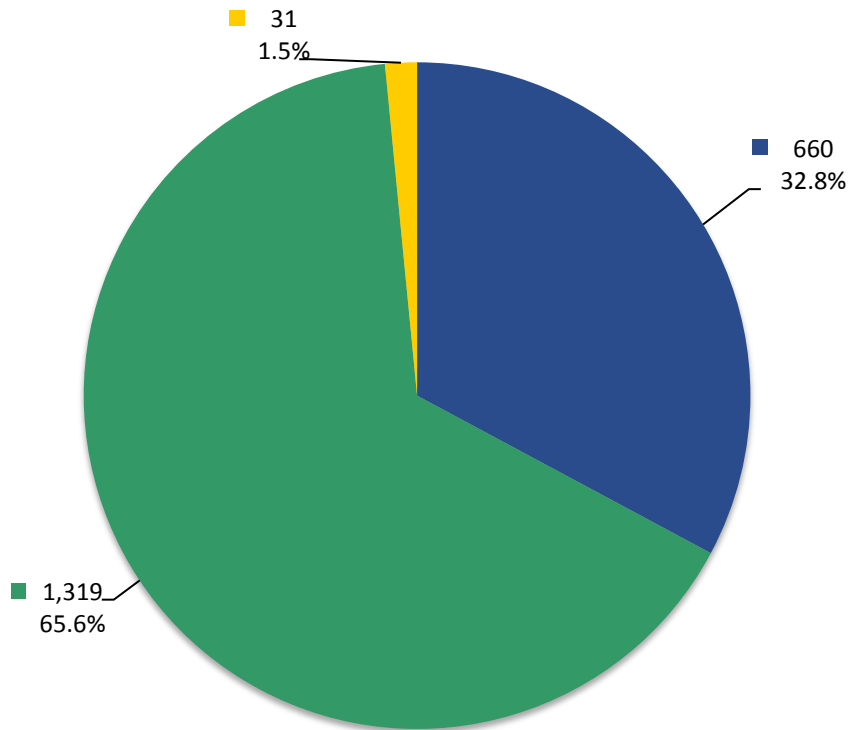
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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress	We have computerised (DDC) HVAC controls in most of our buildings. In these buildings we have integrated unoccupied override controls. These controls limit the on time and switch back to setback settings after a predetermined length of time.	Continue to monitor building DDC systems to ensure they setback outside regular business hours.	2008	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	We continue to install motion sensors through out the School District to automatically shut off lights. In some facilities the motion sensors also deactivate outside dampers on the building HVAC system reducing outside air intake during times without occupants.	Continue to install motion sensors to automatically switch off lights.	2008	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	The cleaning product we use requires cold water therefore most of our schools have hot water systems with more capacity than required. In various facilities this past year we have reduced the number of hot water tanks and or the size of tanks during replacements.	We will continue to "right size" our hot water tanks in our buildings.	2010	No End Date (Continuous)
IT power management					
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	We continue to utilize Deep Freeze from Faronics on many lab based computers. This allows for the automatic control of these workstations, turning them off at designated times each day. The management of power in some labs where we have installed a lab of Thin Clients, the operation is enabled from our DDC system, turning computers off when buildings are unoccupied.	We plan to continue to manage power consumption by shutting down computers when not in use.	2009	No End Date (Continuous)
Implement server virtualization	Ongoing/In Progress	The virtualization of what would have been standalone servers continues and is the first choice in any new situation.	Continue to upgrade labs by the use of virtualization.	2009	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	The Operating System on each District computer is programed to manage power consumption. Each machine will go into sleep mode after a pre-defined period of time.	Continue to monitor that operating systems on individual computers are programed correctly and that power management settings are correct.	2009	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Ongoing/In Progress	Fax machines have been removed from most facilities, photo copiers have been set up for scanning and fax purposes therefore reducing standalone fax machines. We are continuing the virtualization of servers and implementation of Thin Clients which will continue to mitigate the use of other stand-alone devices.	As facilities replace equipment we will continue to reduce the use of standalone devices.	2009	No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	In Development	All photocopiers are programed to utilize power management functions and will go into sleep mode when not in use. With our multipurpose use of photocopiers we rarely purchase new printers. The printers that we do purchase are <i>Power Smart</i> devices.	We will be initiating a focus on our printers to ensure that auto-sleep functions are enabled.	2012	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	Our new purchases are generally Energy Star computers however in some cases refurbished computers are purchased. These refurbished units are usually only 1 to 2 years of age and are normally as energy efficient as most brand new devices currently on the market.	We plan to purchase energy smart computers when we purchase new equipment.	2010	No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	Ongoing/In Progress	We analysed our energy performance in 2008 and created a baseline Building Energy Performance Index (BEPI) for all our buildings. We continue to use that Index today to compare and	We will continue to use our Building Energy Performance Index to monitor and compare energy performance of our buildings. This analysis helps us ensure our buildings continue to perform well and	2008	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	<ul style="list-style-type: none"> - Blarhmont Elementary - Upgraded HVAC system and DDC controls to improve efficiency. - Kimberley Operations Center - Upgraded weather stripping - Lindsay Park Elementary - Replaced CO2 Sensors to improve efficiency by managing ventilation air. - McKim Middle School - Replaced old inefficient natural ventilation boilers for the gym and change rooms with new high efficient condensing boilers. Installed new DDC controls complete with CO2 sensors to manage ventilation air. - Various Facilities - Reduced size and capacity of hot water tanks. 	<ul style="list-style-type: none"> assists us to focus efforts on buildings that need to be improved. Alexander Park Elementary - Planned replacement of inefficient boilers. Install new high efficient condensing boilers to improve efficiency. - Golden Alternate School - Planned replacement of inefficient oil fired boilers. Install new high efficient condensing furnaces. - Lindsay Park Elementary - Planned Lighting upgrade in Gym to improve efficiency - Selkirk Secondary - Planned Metal and Wood Shop HVAC Upgrade to improve ventilation. - Selkirk Secondary - Remove old pneumatic controls and install new DDC controls to more efficiently manage HVAC system. - Various Facilities - Continue to optimize DDC control systems to manage HVAC systems. 	2012	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress	We do not have many cooling systems in our facilities. This past year have engaged Mechanical Contracting firms to provide us with a proposals to maintain and monitor our refrigeration systems.	We plan to enter into contract with a firm to maintain and monitor our refrigeration systems.	2011	No End Date (Continuous)
Planning/management					
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	We continued to monitor our continuous optimization meters on largest facilities in District to ensure that our buildings operated at as efficient as possible.	Continue to monitor and make adjustments as required to maintain efficient operation of HVAC systems.	2011	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Completed (in Previous Year)				No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Completed (in Previous Year)				No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Completed (in Previous Year)				No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	Most documents are filed electronically.	Plan to continue to improve the ease of District wide document filing and retrieval.	2008	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Completed (in Previous Year)				No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	Some schools switched to 30%	More schools switching to 30%	2008	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	Some Schools switched to 100%	More Schools switched to 100%	2008	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	Printers and Photocopiers are set to automatically print double-sided.	Continue to monitor computer, printer and photocopier settings to ensure double-sided printing is default option.	2009	No End Date (Continuous)

**School District 06 - Rocky Mountain
Greenhouse Gas Emissions by Source
for the 2012 Calendar Year (tCO₂e*)**



Total Emissions: 2,009

- 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 2012 (Generated May 28, 2013 3:29 PM)

Total offsets required: **1,450**. Total offset investment: **\$36,250**. Emissions which do not require offsets: **559** **

*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.