

## Carbon Neutral Action Report School District No. 10 (Arrow Lakes)

### Executive Summary

School District No. 10 (Arrow Lakes) is a small rural dispersed district in the province with seven (7) buildings of varied ages and size that it maintains, eleven (11) busses in the fleet, seven (7) gas driven passenger and/or small cargo vehicles, three (3) grounds maintenance machines, and 115 computers, forty-two (42) laptops, seven (7) servers. Efforts to improve energy efficiencies and energy consumption in the buildings, bussing, small cargo and passenger vehicles and computer technology have, in part, been implemented or are planned to be implemented. Building refits with energy efficiency windows and doors, computer controlled HVAC of the buildings, a propane driven bus, greater efficiency ballasts for lighting, use of "Thin Client" technologies to reduce number of CPU's, etc. are some examples of the actions the district has taken and will continue to take to gain greater efficiencies in energy consumption. This report details more specifically the actions taken.

Behaviours in the District are also beginning to change. The purchase of recycled paper products, utilizing technologies to facilitate meetings rather than travelling for face-to-face meetings, are a few examples of the human behavioural changes.

### Objectives

We have and will continue to participate in the B.C. Hydro PowerSmart program. We also are purchasing renewable energy solar/pellet fired hot water from the Nakusp Energy Corporation.

## Part 1: Actions Taken to Reduce Greenhouse Gas Emissions in 2008

### Overview

The district has adopted and implemented changes in normal practice that reflects an ongoing commitment to reduce GHG's. Changes in standard operating procedures with regards to transportation infrastructure acquisition and operation, fixed plant and information technology acquisition and utilization, and continuing education of staff and clients as to best practice with regard to ensuring GHG reductions has been implemented across the entire enterprise. During 2008 this included; purchase of lower GHG emitting vehicles, driver training, vehicle pooling, retrofits of lighting, heating and IT plant, ongoing education with regards to waste minimization and acquisition of consumables with a lower GHG emitting manufacturing process.

### 1.1 Mobile Fuel Combustion

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In Progress	Purchase of more efficient vehicles	We have started to replace our fleet with more fuel efficient models.

Provided driver training to reduce fuel use	In Progress	11 drivers involved in Drive Smart	This training will help to reduce fuel waste and carbon production through efficient driving practices
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	Complete	11 busses & 7 other vehicles are in the program	We are upgrading engines and exhaust systems to reduce carbon production
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	Complete	Driver training, signs around schools.	Signage has been installed at all schools to encourage all drivers to turnoff their vehicles while waiting.
Encouraged car pooling in fleet vehicles	Complete	Van for staff and Board members to car pool.	This vehicle is used to reduce the number of private vehicles used on trips.
Established travel reduction goals	In Progress		

## 1.2 Stationary fuel combustion and electricity

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # computers with EnergyStar models	Complete	Replaced 32 Teacher assigned Desktop PC's & CRT Monitors with Mobile Computing. Reduce per month electricity consumption from 177.4kW hr/mo to 36.9kW hr/mo per unit	
Turned off lights in unused rooms	In progress	Reduction in electrical consumption.	Reminders to staff until becomes a habit
Replaced Refrigerators (EnergyStar rated appliance)	In progress	Reduction in electrical consumption.	As replacements are needed, energy star appliances are purchased
Replaced other appliances (with EnergyStar rated appliance)	In progress	Reduction in electrical consumption.	As replacements are needed, energy star appliances are purchased
Undertaken lighting retrofit	In progress	Reduction in electrical consumption.	T8 bulbs and electronic ballasts are installed needed for burnt out T12
Undertaken building energy audit at LOCATION(s)	In progress	Nakusp Secondary, Nakusp Elementary, Lucerne Elementary/Secondary Lighting & HVAC Efficiency Audits	Audits done ... organizing projects

## 1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Committed to use 100% recycled paper	In progress	All paper to have recycled content	
Initiated automatic double sided printing	In progress	Reduce paper waste.	Standard Practice
Re-used non-confidential scrap paper	In progress		Standard Practice
<b>Actions on non-paper related supplies:</b>			

Encouraged re-use of furniture and equipment	In progress	Refinish/refurbish when applicable if energy cost to do so is less than new fabrication.	Standard Practice
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#### 1.4 Employee Engagement

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Provided conservation education	Complete	BC Hydro Power Smart youth program presentation to School Board	Student ownership, bringing a reminder to the Board that the student population is thinking about conservation also

#### 1.5 Sustainability Actions (others)

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Improved recycling measures	In progress	Less removed to land fill site	On-site recycle bins with students involved
Purchased green cleaning products	In progress	Methods and products used result in less product wasted at end of daily cleaning cycle	With the use of micro fibre technology and ECO LOG/Green seal cleaning products
Used green (low-e paints)	In progress	As the end user we have less VOCs to deal with	Water borne paints used 95% of time

#### Part 2: Plans to Continue Reducing Greenhouse Gas Emissions 2009 -- 2011

<b>Overview</b>	The 'District' will continue to investigate and, where applicable, adopt best practice with regard to GHG emission reduction. Plans include replacement of end of life appliances with EnergyStar rated products, reducing power consumption by consolidation of IT infrastructure, continuing education to best operating practice and continued review, replacement and management of fixed and mobile plant with GHG emission reduction as a key objective in each projects scope of work.		
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#### 2.1 Stationary Fuel Combustion (including electricity)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Replace # computers with EnergyStar models	In Progress	Reduce power consumption from 783.2 kW hr/mo to 368 kW hr/mo	Reduce CPU's from 30 to 2, remove CRT's and replace with LCD. Total per month reduction of power consumption from 5232kW hr/mo to 713kW hr/mo	6/1/2009 June 2010
Replace Refrigerators (EnergyStar rated appliance)	In Progress	Systemic replacement of non EnergyStar rated appliances.	More efficient electrically and friendlier refrigerant	
Replace other appliances (with EnergyStar rated appliance)	In Progress	Systemic replacement of non EnergyStar rated appliances.	Replace unrepairable stoves with EnergyStar rated products	
Undertake lighting retrofit	In Progress	Audits done , work to begin when funding in place	Regular maintenance changes to T8 electronic Gymnasium lighting changes later	

Implement server virtualization	Planned	Reduce power consumption by 829kW hr/mo	Consolidation of 4 physical Windows 2003/2000 servers to 1 physical server with power consumption reductions of 829kW hr/mo	
Undertake building energy audit at LOCATION(s)	In Progress	Nakusp Secondary, Nakusp Elementary, Lucerne Elementary/Secondary Lighting & HVAC Energy Audits Done	Heating Plant Replacements and DDC updates	2009/2010

## 2.2 Employee Engagement

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide conservation education	In Progress	Reduce waste and energy consumption.	Publish-to-staff copy counts to increase and highlight printing and copying levels. Track reduction in per user copy volume and	Sep-09
Provide green tips	In progress	Hopefully less lights left on in empty classrooms. Less cleaning supplies wasted or unused	Weekly face to face tips to custodians re: lights and cleaning products	

## 2.3 Sustainability Actions (others)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Improve recycling measures	In progress	We would like to include more plastic recycling not set up in this town	We have a good recycling process	
Purchase green cleaning products	In progress	Push towards more low environmental impact cleaning and cleaning products	Seminars with suppliers/cleaning experts. Dilution Control and cleaning methods result in product volume savings	
Use green (low-e paints)	In progress	Continue the move towards the use of only waterborne paints		Ongoing
Support sustainable procurement practices	In progress	Purchase products that meet CSA standards	Purchase products with longer life cycles, no quick throw away items	
ADDITIONAL ACTIONS TAKEN OR PLANNED	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
	Completed		Sand used for slip control on icy surfaces, Ice-melter used previously	Ongoing