

Carbon Neutral Action Report School District No. 68 (Nanaimo- Ladysmith)

Executive Summary

School District #68 (Nanaimo-Ladysmith) has been actively pursuing energy use reduction in the form of various projects. For example, lighting retrofits have been a fixed AFG budget item for the past 10 years. In more recent years that budget has been supplemented by various incentive grants from BC Hydro and PSECA thus enabling the number of project completions to accelerate. Prior to 2008 there have been other initiatives completed such as Variable Speed Drives on large HVAC units and motion sensors for lighting controls in gyms that have extended the power use reduction.

In 2008 there have been other initiatives started such as computerized field irrigation control tied into school based weather station for real time condition assessment and a phase 1 assessment and re-commissioning of DDC systems and HVAC units. Retirement of older fleet vehicles along with an anti-idling program was initiated and are looking ahead in 2009 to incorporate a software tool to better manage fleet maintenance and vehicle use tracking.

2009 will also see the completion of an HVAC upgrade project at an elementary school which will include the condensing boiler/conventional boiler system. This will be a testing project for design standard for boiler upgrade/replacement which is now an annual AFG budget item with a long term multi-year plan in place. Bus driver training will be completed which will supplement the anti-idling program. Green purchasing practices are now in effect and the district has been able to reduce the number of different cleaning products down to 2 types - all of which are green seal. Other non-cleaning product green type purchasing practices are also in effect and continue to expand the product lines in this direction.

Behavioural initiatives are on-going with programs targeted at school students and staff members and plans to extend this to maintenance and other staff are in the works. Computer server reduction is another project to be initiated with possibilities of fairly major reduction in IT hardware.

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

Overview:

The most constant of all initiatives is the on-going lighting retrofit projects and in 2008 there were 4 elementary schools completed. Also, planning took place for 2 more elementary schools and a secondary school gym.

Fleet conservation measures included anti-idling education by way of instruction and stickers, anti-particulate mufflers and crankcase ventilation kits installed. Planning for bus pass payroll deduction to encourage public transportation use.

Purchasing policy extended to include footprint reduction use of copy paper by including in the RFP for replacement of the copier and printer fleet with equipment with document management capabilities. Increase in collaboration with purchasing department regarding sustainable products. Eco friendly paints also included.

Various HVAC projects include Design for HVAC upgrade that includes upgrade to condensing boilers. This will realize a significant carbon footprint reduction. Installation of VFD's as part of an on-going initiative and DDC system re-commissioning revealing systems that could be shut off more often including Christmas break and spring break shutdowns.

Awareness programs included the planning for the Energy Ambassadors program in 2 secondary schools. The completion of composting program at all secondary schools in the district.

1.1 Mobile Fuel Combustion

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Provided driver training to reduce fuel use	Complete	None yet	
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	In Progress	Stickers applied. Measure by individual fuel use.	On-site observation and awareness follow-up
Encouraged use of public transit/active transportation	In Progress	Bus pass payroll deduction participation	
Anti Particulate Mufflers	In Progress	70% complete. Measure by individual unit fuel use	
Crankcase Ventilation Kits	In Progress	70% complete. Measure by individual unit fuel use	

1.2 Stationary fuel combustion and electricity

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Undertaken workstation tune-ups to help staff understand what they can do to reduce personal energy use	In Progress		Publish on-going conservation tips in District wide newsletter
Supplied power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	In Progress	Count of completed work stations	On-going program
Replaced # computers with EnergyStar models	In Progress		On-going purchasing policy
Asked staff to close blinds daily	In Progress		Part of District wide newsletter tips
Turned off lights in unused rooms	In Progress		Part of District wide newsletter tips
Replaced Refrigerators (EnergyStar rated appliance)	In Progress		On-going purchasing policy
Installed multi-function devices (and removed stand-alone printers/faxes)	In Progress	District Wide. Specifications will be included in RFP	Entire copier/printer fleet replacement 2009
Replaced standard bulbs with CFLs	In Progress	On-going by maintenance dept.	
Installed motion activated lights	Complete	Dover Bay Secondary Gym Ladysmith Elementary Gym Mountain View Elementary	On-going program
Undertaken lighting retrofit	In Progress	McGirr Elementary Park Avenue Elementary - Started 2008 Georgia Avenue Elementary - Started 2008 Dover Bay Secondary - Started 2008	On-going program Complete 2008 Complete 2009 Complete 2009 Complete 2009
Initiated corporate computer shut-down/wake-up for maintenance	Complete	On all computer lab units in district	Installation of Deepfreeze software
Unplugged unused equipment	In Progress		December and spring break advisory
Undertaken building energy audit at LOCATION(s)	Complete	Post installation M&V of utility bills	HVAC Upgrade Project - Rock City Elementary
Initiated or completed a building energy retrofit	In Progress		HVAC Upgrade Project - Rock City Elementary
	In Progress	Change out to condensing boilers - Annual AFG	Boiler Upgrades: On-going project - year 1 = planning school 1 then year 2 = construction school 1 and planning school 2 (and so on)
	In Progress	Tracking utility costs and user comfort levels	VFD: Install VFD's on all large HVAC fan units
		Tracking utility costs	DDC recommissioning: Level 1 done - additional work required
Complete			
Winter and Spring shutdowns	Complete	Tracking utility costs	Lower than normal setback on all schools
Utility Bill Spikes	In Progress	Tracking utility bills	Decreased reaction time

1.3 Supplies			
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Committed to use 30% recycled paper	In Progress	Overridden by price	Considered at each tender
Initiated automatic double sided printing	In Progress	To be re-iterated	On-going District procedure
Developed document library (online and one printed copy) for large documents	In Progress		2009 RFP to include Electronic Document Management
Re-used non-confidential scrap paper	In Progress	On-going program	
Actions on non-paper related supplies:			
Chose "Green" items from Distribution Centre	In Progress	Product performance/User satisfaction	On-going purchasing practice
Encouraged re-use of furniture and equipment	In Progress	First step of procurement	On-going standard practice
1.5 Employee Engagement			
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Developed Green Teams	In Progress		Upcoming Energy Ambassadors Program initiation
Provided green tips	In Progress		Conservation tips in District wide newsletter
Supported professional development	In Progress	On-going attendance at seminars	Normal practice
1.6 Sustainability Actions (others)			
Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Reduced/replaced bottled water with filtered or refrigerated water	Complete	User satisfaction	Replaced with water fountains
Supported composting	Complete	All Secondary schools complete	In partnership with regional district
Used re-usable dishes			
Purchased green cleaning products	In progress	On-going - cleaning products have been reduced to two types for all cleaning purposes - both types are green seal	On-going practice
Used green (low-e paints)	In progress	Deletion of all regular paints	On-going practice for the purchase of Horizon (no VOC) and Ecologic paints (Cloverdale)

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

Overview:

Lighting retrofits will continue into the future until all schools and other facilities have been completed. Along with that would be the HVAC upgrade and boiler replacement upgrade project completion at one elementary school. Planning of boiler replacement at an elementary school - part of an on-going project. Mechanical system re-commissioning are also part of the long term plans.

Plans for increased awareness for bus drivers for fleet fuel reduction which will be done through on-going training. And, perform an audit of the existing fleet to determine less efficient vehicles and initiate a long term replacement plan. Plan in place to increase bio-fuel use and the start-up of the fleet maintenance management and vehicle use tracking software program.

On the technology side the main focus will be Server Virtualization

2.1 Mobile Fuel Combustion

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide driver training to reduce fuel use	In Progress	Driver performance and vehicle consumption	To be extended to maintenance fleet vehicles	
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	Planned	Audit to include investigation of inefficient vehicles	Fleet Audit	Year end 2009
Establish anti-idling behaviour change program (e.g. signs, stickers, messages)	Planned	Policy to be tabled. Driver performance and vehicle consumption	As part of driver training	Jul-09
Encourage use of public transit/active transportation	In Progress	Bus pass payroll deduction participation	Plan being developed	
Establish travel reduction goals	Planned	Zone vehicle practice to be eliminated		
Maintenance Software	Planned	Track maintenance frequency and fuel consumption costs		

2.2 Stationary Fuel Combustion (including electricity)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
		Server Virtualization		
Turn off lights in unused rooms	Planned		Included in Ambassadors Program	End June 2009
Install multi-function devices (and remove stand-alone printers/faxes)	Planned	Printer/Copier fleet replacement to be complete in year 2009		Year end 2009
Undertake lighting retrofit	In progress	Dover Bay Secondary Wellington Secondary Gym Departure Bay Elementary Davis Road elementary	On-going - T12 and HID MH elimination program	Complete 2009 Complete 2009 Complete 2010 Complete 2010
Implement server virtualization	In progress	By number of servers eliminated	Pilot project to be started	Year end 2009
Unplug unused equipment	Planned		Part of Ambassadors Program	End May 2009
Undertake building energy audit at LOCATION(s)	Planned		Continuing program	On-going
Initiate or complete a building energy retrofit	Planned	Boiler Upgrade - Uplands Elementary	Continuing program Planning - 2009	On-going
		HVAC Upgrade Rock City Elementary	Completion Date Aug 2009	On-going
		Large HVAC Unit "Load Shedding" Dover Bay Secondary	Large unit shutdown during break/recess times	Year end 2009
Computer Lab Work Station Reduction	Planned	Results in workstation PC reduction - monitor/keyboard count remains the same	Blue Curl technology	End June 2009

2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Initiate automatic double sided printing	Planned	Paper usage	Electronic Document Management to be included in 2009 RFP for printer/copier fleet replacement	
Develop document library (online and one printed copy) for large documents	Planned	Paper usage	Electronic Document Management to be included in 2009 RFP for printer/copier fleet replacement	
Actions on non-paper related supplies:				
Choose "Green" items from Distribution Centre	In Progress	Availability	Policy for all items	On-going

2.4 Travel

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Set a X% Travel reduction goal	Planned	To be determined	Policy under development	
Initiate Travel Policy	Planned		Policy under development	

2.5 Employee Engagement

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide climate change education	In Progress	Initiation of program		
Support professional development	In Progress	On-going District practice		On-going

2.6 Sustainability Actions (others)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Take water conservation measures – low flow showers or toilets, fix leaks	In Progress	Included in all in-house designs		On-going
Reduce/replace bottled water with filtered or refrigerated water	Planned	District Guidelines to be established		
Support composting	In Progress	Re-new commitment with regional district		On-going
Purchase green cleaning products	In Progress	Reduction in regular product purchases		On-going
Support sustainable procurement practices	In Progress	To be included in all procurement practices		On-going