

Carbon Neutral Action Report School District No. 83 (North Okanagan-Shuswap)

Executive Summary

North Okanagan-Shuswap School District has been actively pursuing opportunities for "green" initiatives for more than a decade. The reason is two-fold: it is better for the environment and, in many instances, saves our district money (which, with rising costs and constantly declining enrolment, is much needed).

Key initiatives for 2008 include:

- Working with B.C. Hydro and recently securing a one year term, funded by B.C. Hydro, for a School District Energy Manager. This person will be developing a comprehensive energy management plan and program for the district.
- A continuation of the multi-year plan to replace/retrofit all facilities/schools to energy-saving T8 electronic technology
- Adjusting heating and cooling set points by half a degree
- Increasing R value when re-roofing
- Increasing awareness with both students and staff of the benefit of energy saving (i.e. turning off lights when not needed, shutting off technology when not in use, not idling vehicles, etc.)
- Continued education of all vehicle drivers to not idle their vehicles
- GPS technology to find route efficiencies and maintain the reduction in idling times
- Changing to more earth friendly practices, such as replacing Styrofoam cups at meetings with earth friendly/biodegradable ones
- As the need arises and funds are available replacing whatever is needed with a more energy efficient/earth friendly model (i.e. heating cooling units, (Heat Recovery), windows etc.).

Objectives

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1. Continuing and sharing 'Smart Driver' information to reduce emission and fuel costs:

Our district continues to try to find ways to not only reduce our carbon footprint but to also reduce costs.

- Our work in training our bus drivers in Natural Resource's Canada's Smart Drive for Fuel Efficiency has kicked off setting up idle free zones at schools and district facilities. The GPS technology also helps our district provide efficient bus routes and monitors idling times.

All schools have been provided with information and links to websites about the health benefits of these idle free zones, to say nothing of the cost savings. The manager of transportation has also promoted these zones with the board of education and with some of the school PACs.

The City of Salmon Arm has also noticed what the school district is doing and the manager of transportation provided training to their works employees as well.

We plan on continuing this training with all new bus drivers as well as continue promoting the health and cost saving benefits of idle free zones.

2. Changing the way we do business to reduce paper use:

- We are also changing how we do business with our employees through the use of our collaborative software, First Class. We are reducing the need to print such things as notices, forms, pay stubs and reports as they can all be accessed on-line.

3. Continuing and increasing recycling as opportunity allows:

- We recycle as much as possible in most areas for both cost efficiencies and environmental reasons.
- We recycle our old computer and technology components instead of sending them to a landfill.

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

Overview:

Facilities

We were one of the original districts to take part in B.C. Hydro's Power Smart program (started working with them on energy reduction plans as early as 1994 but it was 1999 with Power Smart) and are still active in this. We were excited to learn that B.C. Hydro recently approved a partnership which will see us hire an Energy Manager, which will be funded by B.C. Hydro. This person will be responsible for the development of a comprehensive energy management plan and program, including, but not limited to, developing base line energy usage information, implementing site based energy management initiatives, coordinating conservation planning and developing a long term capital plan for site based equipment upgrades and replacement to incorporate reduced energy consumption and green initiatives.

In 2002 most of our facilities took part in the three year Destination Conservation program, which not only educated the students and staff doing the energy audits, but also brought to attention areas where energy conservations could be made. These findings are: Over the past several years and including 2008, all of our schools and facilities have had the lighting upgraded using the new energy-saving T8 tube technology (which also has the benefit of saving the District approximately \$75,000 per year). Also, classes have multi level lighting (where lights come up at 33, 66 or 100 per cent), which when used also saves energy and saves the district approximately 30 per cent.

The school district has adjusted heating and cooling set points at all locations.

Each year the district has reroofing projects at some of its schools/facilities. As this work is completed it is part of the contract to increase the 'R' value of the roof.

Also, as rooftop heating/cooling units need to be replaced, we replace them with a more energy-efficient unit. At the same time, if money is available, we try to upgrade the DDC controls.

As funds are available we also replace single pane windows with more efficient sealed units.

Custodial Services

The District has taken the initiative to institute green cleaning practices.

- all products meet or exceed industry and government standards for green cleaning
- Ecologic and Green Seal approved products are used in daily cleaning procedures
- Effect cleaning practices that: maintain and enhance indoor air/environmental quality; improve worker and student safety; ensure environmental sustainability; reduce the cost of cleaning; and deliver optimum cleaning results

Transportation

Our transportation department, which travels thousands of kilometres each day, is continually looking for opportunities to be more efficient and cost-effective. Over the past years much has been done through education and technology to reduce the district's carbon footprint and make our buses as cost effective as they can be. For at least three years now the district has had an anti-idling policy, first educating bus drivers and then other staff and parents (through signs and literature) on why it makes sense not to idle their vehicles. We have signs in all of our school parking lots reminding all drivers not to idle their vehicles. Working with Environment Canada and Ministry of Environment programs, half of the school district's buses were retrofitted with diesel oxidation catalysts (DOC). The second half, according to the B.C. program, is to be done by June 2009. The installation of the specialized filter results in cleaner emissions and a safer environment for B.C.'s children. North Okanagan Shuswap School District transportation department is also using GPS technology to help lower emissions and gain efficiencies. The technology is used to optimize runs, monitor idle times and, of course, for safety. After bus driver education and training to be more energy conscious, fuel consumption was down 12 per cent. After monitoring with GPS, the 120 minutes per day average idle time dropped to just 17 minutes a day. When purchasing, the transportation department is looking for fuel efficient products. The district is going back to 78 passenger buses (instead of 84 passenger pusher buses) as our data shows they are 35 per cent cheaper to operate.

Technology

Over 2008 the technology department has set up so that if a computer idles for two hours it shuts down. To save funds and re-use we buy second hand off lease computers for our high school labs. The computers in the high school labs are then moved to elementary labs. We recycle our unused technology components. The technology department is working on encouraging all staff to use more efficient photocopier units rather than less efficient desktop printers. Introduced "paperless" pay stubs to administration, management, and available to all other staff (CUPE/NOSTA) who wish them.

Education - Staff and Students

In 2008 there were several initiatives:
Elementary Leadership Group Conference (student leaders learn and then take information back to their schools) where approximately 100 students took part in the all day session which focussed on environmental awareness and how we can all reduce our carbon footprint.

- "Lights Out for One Hour" - an initiative of the district's energy conservation committee. The hour tied in with a lesson about using the multi-level lighting feature.
- Increase awareness of "green" initiatives to all staff through the school district's weekly staff newsletter (delivered electronically to all district facilities). Also reminders of such things as making sure all technology is turned off before breaks, holidays etc.
- Guest speakers at schools on environmental issues
- Many schools teach thematic units relating to climate control etc.
- Also, our district is part of the Hokkaido-Armstrong exchange happening every two years that focuses on global stewardship using salmon as the "keystone species" for our studies. Also, many of our elementary schools raise salmon fry (from eggs to fry) and then let them go in local 'salmon raising' streams.

Schools

Our schools are involved in many projects to reduce their impact on the environment. All of our school have a recycling program for paper, and usually for beverages and often cardboard. Most encourage all students/staff to remember to shut off the lights when not needed. All discourage vehicles idling in the parking lot. Most schools walk to field trips when at all possible, and many have some kind of composting or planting programs at their schools. Most schools have computer controlled thermostats, which ensures automatic and consistent cost and fuel savings. Also a few of our staff members have started using an eco-friendly whiteboard marker. This pen can be refilled and tips replaced. It doesn't have toxic chemicals and far fewer of the cylinders end up in the landfill. This is something our purchasing department is investigating for more widespread use in the upcoming school year.

Just a few of the other activities include:

- Salmon Arm Secondary's environment club runs a battery recycling program and a compost program and its Cook's Training program and school cafeteria uses biodegradable and earth friendly ("tater") plates/cutlery
- Metal and woodwork programs use scraps for projects (sometimes donated by local businesses)
- At Armstrong Elementary there is a sign on all the towel dispensers which reads "1,2,3 save a tree!"
- At Bastion Elementary, which keeps a Green Schools chart in the foyer with a list of ongoing green projects, there are additional activities including milk jug recycling, checking to ensure taps aren't dripping, verma-composting and conventional composting, a lights down campaign (all classrooms are encouraged to use only one bank of lights in their rooms and in the gym, too), second-hand book recycling, and litter "less" lunch days.
- Highland Park turns off all computers nightly and has been planting trees on the school grounds.
- South Broadview Elementary saves all single sided paper to use the other side, gardens in front of the school, has a clothing exchange, and turns lights off during lunch hours. They also celebrate Earth Day for a whole week by doing "earth friendly" projects.
- On Earth Day 2008 Ashton Creek Elementary students planted 500 willows by a creek
- Sorrento Elementary shovels the sidewalk rather than using gas driven snow blower
- At Len Wood Middle School there is a student-led awareness campaign of environmental issues. They have a student-led activity around raising awareness created a website (<http://www.greenearth2008.com>).
- Rancho Elementary has a recycling program for ink jet cartridges and cell phones.
- Carlin Elementary Middle School built birdhouses, planted trees and bulbs.
- The district office and meeting rooms have replaced Styrofoam cups with earth friendly/biodegradable ones, whenever possible china plates/cutlery are used instead of disposable, photocopy paper includes a recycled content, all computers and lights are turned off whenever possible and everyone is encouraged to use more efficient photocopier units rather than desktop printers.

1.1 Mobile Fuel Combustion

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLEs/Hybrid	In Progress	Purchasing 1 hybrid bus	More cost efficient
Provided driver training to reduce fuel use	In Progress	5% from base year	Ongoing driver training/upgrading
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	Complete	Ongoing	

Established anti-idling behaviour change program (e.g. signs, stickers, messages)	Complete	90% compliance	Ongoing monitoring
Encouraged car pooling in fleet vehicles	In Progress		Operations staff pool when feasible
Established travel reduction goals	In Progress	5% from base year	Modified bus routes for efficiencies

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	5% from base year	
Used air dry setting on dishwashers	In Progress		Where possible
Turned off lights in unused rooms	In Progress	80% compliance	
Replaced Refrigerators (EnergyStar rated appliance)	In Progress		When replaced and funds available
Replaced other appliances (with EnergyStar rated appliance)	In Progress		When replaced and funds available
Installed multi-function devices (and removed stand-alone printers/faxes)	In Progress		
Replaced standard bulbs with CFLs	Complete		
Installed motion activated lights	In Progress		
Undertaken lighting retrofit	Complete		
Implemented server virtualization	Complete		
Utilized desk-top power management settings on computer	In Progress	80% compliance	Computers shut down after 2 hours
Unplugged unused equipment	In Progress	80% compliance	
Applied for LEED existing building rating	In Progress		New facilities built to LEED Gold Standards
Undertaken building energy audit at LOCATION(s)	In Progress		3 years in "Destination Conservation"
Initiated or completed a building energy retrofit			Audits done, not extra funds available. Equipment upgrades/replaced when necessary

1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Committed to use 30% recycled paper	In Progress	80% compliance	
Initiated automatic double sided printing	In Progress	70% compliance	Not automatic, but practiced
Developed document library (online and one printed copy) for large documents	In Progress		
Re-used non-confidential scrap paper	In Progress		
Used laptops/tablets	In Progress		
Actions on non-paper related supplies:			
Encouraged re-use of furniture and equipment	In Progress	70% compliance	

1.4 Employee Engagement

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Provided climate change education	In Progress	1 in-service per year	
Provided conservation education	In Progress	1 in-service per year	
Developed Green teams	In Progress	1 team per building/school	District wide Green Committee
Supported Green Teams (resources)	In Progress		
Provided green tips	In Progress		
Supported professional development	In Progress		

1.5 Sustainability Actions (others)

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Took water conservation measures – low flow showers or toilets, fix leaks	In Progress	5% compliance	As things need to be replaced & funds available
Ran dishwasher only when full	In Progress		
Reduced/replaced bottled water with filtered or refrigerated water	In Progress		Reverse Osmosis system installed in one school to replace bottled water.
Improved recycling measures	Complete		
Supported composting	In Progress		Many schools participating
Used re-usable dishes	In Progress		
Purchased green cleaning products	In Progress		
Used green (low-e paints)	In Progress		Used when cost efficient
Supported sustainable procurement practices	In Progress		
Adopted low-carbon contracting practices	In Progress		Whenever feasible

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

Overview:

Looking ahead 2009 – 2011

Within the constraints of the budget, School District #83 is moving towards more cost efficient and energy-conscious practices. Some of our plans include:

Facilities

We were excited to learn that B.C. Hydro recently approved a partnership which will see us hire an Energy Manager, which will be funded by B.C. Hydro. This person will be responsible for the development of a comprehensive energy management plan and program, including, but not limited to, developing base line energy usage information, implementing site based energy management initiatives, coordinating conservation planning and developing a long term capital plan for site based equipment upgrades and replacement to incorporate reduced energy consumption and green initiatives.

- Reduce set points by half a degree in 2009
- We are in the planning stages of building a new elementary school, M.V. Beattie in Enderby. This school is being built to LEED gold standards

Transportation

- Investigating use biofuel
- Are receiving first hybrid bus (2009)
- At the present time the use of biofuel isn't feasible for our district. Will continue to monitor and see if at some point in the future we will be able to use it.
- Continuing and improving whenever possible our recycling practices (used oil, anti-freeze, containers, plastic jugs). We also re-tread our bus tires for up to five uses (and then send them back to manufacturer for recycling).
- After going through 10 years of data, our transportation department has determined what buses are best suited to the use they get and climates they face. Over the next year the transportation department will be prematurely replacing the rear engine transit style bus with conventional type buses. It is expected this will improve efficiency by 35 per cent.
- Continue educating new drivers on Smart Driver techniques
- Investigate changing some of fleet vehicles to hybrid
- Investigate coordinating a car pooling promotion

Technology

- Have submitted a proposal with several other school districts and colleges to get funded for Video Conferencing equipment.
- Installing fibre optic cable (where funds are available and facilities are close enough) to link schools and consolidate servers (thereby reducing the areas needed to house, and cool, the equipment). We plan on doing at least one project in 2009 and one in 2010.
- Developing centralized on-line professional development registration, which should help cut back on paper registrations. Should be in effect in 2009.
- Moving towards getting all staff members on First Class (email, forms etc.) which will help cut back on paper use. Hope to have this completed in 2009.
- When purchasing new equipment (printers, computers etc) ensure they have energy star rating whenever feasible.

Purchasing

- Doing a pilot project with non toxic, reusable white board markers (2009)
- Continuing use of recycled toner cartridges
- Seeking green alternatives to lessen carbon footprint whenever financially possible
- Trying to purchase paper at the best price with the highest recycled content possible

2.1 Mobile Fuel Combustion

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid	In Progress	1 Bus being replaced with Hybrid	Planning on reviewing hybrid fleet vehicles	2009-10
Provide driver training to reduce fuel use	In Progress	1 in-service for 2009/2010	On going	
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In Progress		On going	
Establish anti-idling behaviour change program (e.g. signs, stickers, messages)	In Progress	90% compliance	On going	
Encourage car pooling in fleet vehicles	In Progress		When feasible, considering our geographically dispersed district	

2.2 Stationary Fuel Combustion (including electricity)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Undertake Monitor turn-off challenge	In Progress	70% compliance		2009-10
Replace # computers with EnergyStar models	In Progress	All new computers/printers, etc.		2009-11
Use air dry setting on dishwashers	In Progress			
Turn off lights in unused rooms	In Progress	80% compliance		
Replace Refrigerators (EnergyStar rated appliance)	In Progress		As necessary - budget allowing	
Replace other appliances (with EnergyStar rated appliance)	In Progress		As necessary - budget allowing	
Install multi-function devices (and remove stand-alone printers/faxes)	In Progress			
Replace standard bulbs with CFLs	In Progress			Completed 2009
Undertake lighting retrofit	Complete			
Implement server virtualization	In Progress		Continue to virtualize where financially and geographically feasible	
Apply for LEED existing building rating	In Progress		As funds become available	
Initiate or complete a building energy retrofit	In Progress	1 building every 2 years	As funds become available	

2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Commit to use 30% recycled paper	In Progress		Paper purchased at most effective cost with highest recycled content	
Initiate automatic double sided printing	In Progress	70% compliance		2009-10
Change document template margins	In Progress	70% compliance		2009-10
Use collaborative software to edit on-line	In Progress	70% compliance		
Re-use non-confidential scrap paper	In Progress	70% compliance		
Restructure a process to use less paper	In Progress		On-line web page for event registration	
Actions on non-paper related supplies:				
Encourage re-use of furniture and equipment	In Progress		Ongoing and will continue practice	

2.4 Travel

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Install Video Conferencing facilities	In Progress		Have made application with other school districts/colleges for joint VC equipment	2009-10

2.5 Employee Engagement

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide conservation education	In Progress		Smart Driver Training - for bus drivers	
Provide green tips	In Progress		Provide in on-line staff news letter	
Support professional development	In Progress		Staff/trustees attend relative workshops/webinars	

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	School District		Ongoing practice to replace older/failed equipment with more efficient technology	
Run dishwasher only when full	In Progress	80% compliance		
Improve recycling measures	In Progress		As depot options permit	
Support composting	In Progress			
Purchase green cleaning products	In Progress			
Use green (low-e paints)	In Progress	80% compliance	When economically feasible	