

Carbon Neutral Action Report School District No. 48 (Sea to Sky)

Executive Summary

School District No. 48 (Sea to Sky) has been contributing towards carbon neutrality for a number of years by actively investing in equipment and lighting retrofits and working with employees and building occupants to reduce energy consumption. Over the years leading up to 2008 we have completed many retrofits to our building systems to improve overall systems performance and reduce energy consumption. We have been working closely with our employees and students to minimize waste in the schools. We have completed many upgrades to our lighting, mechanical and control systems which has improved comfort to our occupants and allowed us to operate our buildings economically.

During 2008 we implemented measures in the categories of stationary fuel combustion/electricity, mobile fuel combustion sustainable actions, supplies and travel. A number of low cost measures have been implemented such as turning off equipment when not in use, optimizing equipment performance through preventive maintenance and refined scheduling. Schools continue to expand environmental learning into the curriculum. Recycling, composting and waste reduction programs continue to expand in the schools with increased student and teacher participation. We are re-using furniture equipment when ever practical and many of our sites are re-using non-confidential scrap paper to minimize waste. We've continued with our vehicle preventive maintenance and anti-idling programs as well as encouraged employees to carpool whenever practical.

Some of the higher cost measures include replacement of older fleet vehicles with more efficient vehicles and we continue to use sustainable products for cleaning and building maintenance. We also completed lighting and mechanical audits at a number of locations and developed plans to complete lighting and mechanical retrofits at five School District sites in 2009.

Objectives

School District No. 48 (Sea to Sky) is well positioned to take a leadership role and demonstrate the measures that can be taken to reduce greenhouse gas (GHG) emissions in the school community. We see this as a responsibility and opportunity to engage our students, employees and partners in the District's mandate to reduce GHG emissions.

Opportunities for our students, employees, partners and the community to see the impact of changes in behaviour by focusing on this public priority will have a positive impact on our learning and working environments and community. Our employees and students will be encouraged to take examples of their accomplishments home and into the community.

The measures we take will allow our organization to become more fiscally responsible by reducing waste through energy conservation. Other benefits will include a healthier community as we move towards more active modes of transportation resulting in cleaner air in our community. Sustainability will allow us to balance social, economic and environmental issues for future generations within the District and local communities.

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

Overview

Our primary focus during this period has been in the categories of stationary fuel combustion/electricity, mobile fuel combustion sustainable actions and supplies.

In the stationary fuel combustion/electricity category we've implemented primarily low cost actions where we have been able to reduce energy consumption by utilizing existing features controlling equipment to reduce waste. We encouraged the use of stairs by limiting access to elevators, we've asked our staff close blinds seasonally to reduce heating and cooling loads. We've utilized power management features to control lighting, HVAC and desktop computers and have been replacing equipment with energy star rated replacements. On the planning side we have completed lighting audits at seven locations.

In the mobile fuel category we've continued with our vehicle preventive maintenance and anti-idling programs as well as encouraged trades staff to carpool whenever practical. We have also replaced several buses and fleet vehicles with improved efficiencies over the replaced vehicles.

In the sustainable actions category we've continued to expand our recycling and composting programs, we are continuing with our low flow faucet program and we continue to utilize green cleaning and paint products.

In the supplies category we are re-using furniture equipment when ever practical and many of our sites are re-using non-confidential scrap paper to minimize waste.

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	Avoid higher fuel consumption costs needed to operate older buses and fleet vehicles.	Replaced two school buses and one fleet vehicle with more fuel efficient vehicles.
Provided driver training to reduce fuel use	In Progress	Reduction in bussing fuel costs and measurable using historical fuel consumption data comparisons.	Transportation supervisors have been trained to provide driver training to SD employees.
Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In Progress	Improved vehicle performance and efficiency and able to avoid higher fuel consumption costs.	Ongoing part of our preventative vehicle maintenance program .
Established anti-idling behaviour change program (e.g. signs, stickers, messages)	Complete	Reduced fleet fuel costs and measurable using historical fuel consumption data comparisons.	Training to staff, signage, stickers, key chains promoting anti-idling behaviour.
Encouraged car pooling in fleet vehicles	In Progress	Reduced fleet fuel costs and measurable using historical fuel consumption data comparisons.	Supervisors are encouraging car pooling when practical.

1.2 Stationary fuel combustion and electricity

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Replaced # computers with EnergyStar models	Complete	More EnergyStar rated computers in service resulting in reduced electrical consumption	Replaced 100 old computers with 5 year old computers.
Asked staff to close blinds daily	Complete	Improved comfort and less comfort related complaints.	Staff are encouraged to close blinds to reduce solar heat gain or heat loss seasonally.
Encouraged staff to use stairs	Complete	Reduced wear and tear and electrical consumption .	Elevator use is restricted by key.
Turned off lights in unused rooms	In Progress	Monitor energy consumption history and trends indicated reduction in overall energy consumption.	Continuing to maintain occupancy sensors in schools and we encourage occupants and custodians to turn out lights to conserve energy.
Replaced Refrigerators (EnergyStar rated appliance)	In Progress	Reduced energy consumption.	As old refrigerators are replaced they are replaced with EnergyStar rated.
Installed multi-function devices (and removed stand-alone printers/faxes)	In Progress	Reduced energy consumption.	As funding becomes available.
Replaced standard bulbs with CFLs	Complete	Reduced energy consumption and measurable by comparing historical consumption data.	Standard bulbs replaced with CFLs
Utilized desk-top power management settings on computer	Complete	Reduced energy consumption.	Computer labs have automatic timed shut down and office PCs have auto sleep mode enabled.
Undertaken building energy audit at LOCATION(s)	Complete	Information required to develop a business case and apply for product incentive funding.	Nine lighting audits completed in 2008.
Initiated or completed a building energy retrofit		Reduced energy consumption and measurable by comparing historical consumption data.	Upgrade ventilation system serving industrial shops at two schools which included higher efficiency HVAC systems than the systems replaced. Replacing older less efficient system. Upgraded ventilation systems in two portable classrooms with higher efficiency systems than the systems replaced.

1.3 Supplies

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Re-used non-confidential scrap paper	In Progress	Reduced paper consumption and landfill waste.	Some sites have taken this initiative on to minimize paper waste.

Actions on non-paper related supplies:			
Encouraged re-use of furniture and equipment	In Progress	Reduced furniture equipment costs and landfill waste.	Employees are encouraged to utilize existing equipment and furniture versus purchasing new.

1.4 Travel

Action	Action Taken	Outcome/Performance Measure	Notes Clarifying Action Taken
Installed Video Conferencing facilities	Complete	Reduction in staff travel time, reduced mileage charges for employee vehicles, reduced maintenance and fuel costs for fleet vehicles.	One installed per community.

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	Reduced environmental impact.	Continued program of installing and maintaining low flow faucets
Improved recycling measures	In Progress	Reduced waste into landfill stream.	Schools expanded recycling programs in various schools to include a broader range of items.
Supported composting	In Progress	Reduced waste into landfill stream.	Various schools have started composting food scraps.
Used re-usable dishes	In Progress	Reduced waste into landfill stream.	The majority of sites are using re-usable dishes.
Purchased green cleaning products	Complete	Reduced environmental impact. Higher cost than non-green products.	Green cleaning products being used by all custodial staff.
Used green (low-e paints)	Complete	Reduced environmental impact. Higher cost than non-green products.	Low -e paints are currently in use for all paint applications.

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

Overview

School District No. 48 (Sea to Sky) is well positioned to take a leadership role and demonstrate the measures that can be taken to reduce greenhouse gas (GHG) emissions in the school community. We see this as a responsibility and opportunity to engage our students, employees and partners in the District's mandate to reduce GHG emissions.

As we move forward the District will continue its commitment to become carbon neutral by 2010. Our key focus in this area will be making plans and taking actions to reduce green houses by engaging our students and employees. This will involve new and revised policies, resolutions and leadership influence to send a message that full participation is necessary to respond to this public priority.

We plan to establish an environmental stewardship committee to work closely with the District leadership team to develop polices and action plans that will engage our students, employees, community and governments.

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	Planned	Reduced fuel costs measurable by historical consumption data comparisons.	More efficient vehicles such as hybrids will be considered for scheduled vehicle replacements subject to funding availability.	2010/2011
Provide driver training to reduce fuel use	In Progress	Reduced fuel costs measurable by historical consumption data comparisons.	Continue driver training programs for bus drivers and expanding to include all trades personnel.	Ongoing
Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups)	In Progress	Reduced fuel costs measurable by historical consumption data comparisons.	Continue vehicle and equipment preventive maintenance programs.	Ongoing
Establish anti-idling behaviour change program (e.g. signs, stickers, messages)	In Progress	Reduced fuel costs measurable by historical consumption data comparisons.	Continue to support awareness of existing District anti-idling program through driver training, distributing information, stickers, key chains and maintaining signage.	Ongoing
Encourage car pooling in fleet vehicles	In Progress	Reduced fuel costs measurable by historical consumption data comparisons.	Distribute information to employees to encourage car pooling. Consider policy to support this measure.	Policy 2009 & Car Pooling information ongoing
Establish travel reduction goals	Planned	Reduction in staff travel time, reduced mileage charges for employee vehicles, reduced maintenance and fuel costs for fleet vehicles. Reduction in other travel related costs.	Opportunities and options to be reviewed to establish travel reduction goals district wide.	2009 - 2011

2.2 Stationary Fuel Combustion (including electricity)

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Undertake workstation tune-ups to help staff understand what they can do to reduce personal energy use	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Review each employee workstation in the District to identify opportunities for energy savings.	2010
Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers)	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Review opportunities and costs.	2010-2011
Undertaken Monitor turn-off challenge	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Organize turn off challenges and pursue sponsor opportunities for prize incentives.	2010-2011
Replace # computers with EnergyStar models	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Subject to funding approvals approximately 30 new EnergyStar PCs will be added in 2009/2010.	2009/2010
Ask staff to close blinds daily	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Reminders for staff to be communicated seasonally.	2009-2011
Encourage staff to use stairs	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Continue to restrict access to elevators.	Ongoing
Turn off lights in unused rooms	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Continue with programs to upgrade lighting and automatic occupant sensor controls. Encourage occupants and custodial staff to turn out manually controlled lighting through reminders and energy reduction challenges .	Up to four sites per year to have lighting upgrades 2009 - 2011
Replace Refrigerators (EnergyStar rated appliance)	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Continue to phase out non-EnergyStar equipment as funding becomes available.	Ongoing
Replace other appliances (with EnergyStar rated appliance)	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Continue to phase out non-EnergyStar equipment as funding becomes available.	Ongoing
Install multi-function devices (and remove stand-alone printers/faxes)	Planned	Reduced energy costs measurable by historical consumption data comparisons. Reduced equipment capital and repair costs.	Continue to explore opportunities for more energy efficient office equipment and purchase as funding becomes available.	2009 -2011
Replace standard bulbs with CFLs	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Standard bulbs have already been phased out and new installations will be fitted with energy efficient type lighting.	Ongoing
Install motion activated lights	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Four sites will receive lighting upgrades with automatic lighting controls in 2009 and we anticipate completing another four sites in 2010 subject to available funding.	Ongoing
Undertake lighting retrofit	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Four sites will receive lighting upgrades with automatic lighting controls in 2009 and we anticipate completing another four sites in 2010 subject to available funding.	Ongoing

Implement server virtualization			This approach is not feasible for the number of servers currently in operation at the SD.	
Utilize desk-top power management settings on computer	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Continue to have computer labs on automatic timed shut down and office PCs imaged with auto sleep mode turned on. Review opportunities to expand use of these features.	Ongoing
Initiate corporate computer shut-down/wake-up for maintenance	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Costs and benefits to be reviewed for consideration.	Ongoing quarterly reviews
Unplug unused equipment	Planned	Reduced energy costs measurable by historical consumption data comparisons.	Periodic reminders to staff .	Ongoing
Apply for LEED existing building rating	Planned	Lower energy consumption and lower environmental impact resulting in lower square foot operating costs.	For future schools/additions and subject to available funding.	2011
Undertake building energy audit at LOCATION(s)	Planned	Increased capital costs and lower energy consumption measurable by historical consumption data comparisons.	Energy audits on lighting have been completed at all sites. Consideration will be given to further auditing at sites where there is potential for favourable cost paybacks and available funding.	2010-2011
Initiate or complete a building energy retrofit	Planned	Increased capital costs and lower energy consumption measurable by historical consumption data comparisons.	Install hybrid propane-electric heating system to reduce propane consumption which is currently truck transported to the site.	2009

2.3 Supplies

Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Commit to use 30% recycled paper	Planned	Higher costs and lower environmental impact.	Consider new or revised policies to support increase use of recycled paper products according to SD targets and available funding.	2010
Commit to use 100% recycled paper	Planned	Higher costs and lower environmental impact.	Consider new or revised policies to support increase use of recycled paper products according to SD targets and available funding.	2011
Initiate automatic double sided printing	Planned	Reduced paper consumption and costs, more wear and tear on copier equipment associated with two sided printing.	Consider new or revised policies to support reduction in paper consumption according to SD targets.	2010
Change document template margins	Planned	Reduced paper consumption and costs.	Consider new or revised policies to support reduction in paper consumption according to SD targets.	2010
Commit to hold paperless meetings	Planned	Reduced paper consumption and costs.	Consider new or revised policies to support reduction in paper consumption according to SD targets.	2011

Develop document library (online and one printed copy) for large documents	Planned	Reduced paper consumption and costs.	Consider new or revised policies to support reduction in paper consumption and review opportunities and resources required to develop online document library as a measure to support SD targets and subject to available funding.	2011
Use collaborative software to edit on-line	In Progress	Higher costs software license and maintenance costs. Reduced paper consumption and costs.	Collaborative email software implementation in progress 2009. Committee to be organized to review opportunities and cost for consideration as measure to meet SD targets.	2009-2011
Re-use non-confidential scrap paper	Planned	Reduced paper consumption and costs.	Consider new or revised policies to support re-use of waste paper as a measure to meet SD targets.	2009-2011
Use laptops/tablets	Planned	Higher computer equipment capital and maintenance costs. Reduced paper consumption and costs.	Consider new or revised policies to support reduction in paper consumption according to SD targets and available funding.	2009-2011
Restructure a process to use less paper	Planned	Reduced paper consumption and costs.	Consider new or revised policies to support reduction in paper consumption according to SD targets and available funding.	2009-2011
Actions on non-paper related supplies:				
Purchase cradle to cradle goods	Planned	Potential higher costs.	Consider new or revised policies to encourage the use of cradle to cradle goods according to SD targets and available funding.	2009-2011
Choose "Green" items from Distribution Centre	Planned	Potential higher costs.	Consider new or revised policies to encourage the use and procurement of green items according to SD targets and available funding.	2009-2011
Encourage re-use of furniture and equipment	Planned	Reduced capital costs and higher repair costs. Potential for compromise in size, function and appearance.	Consider new or revised policies to support and encourage re-use of existing furniture and equipment. To some extent this is already encouraged and taking place due to limited existing funding.	2009-2011

2.4 Travel				
Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Set a X% Travel reduction goal	Planned	Lower travel costs associated with staff travel.	Review options to efficiently collect sufficient data to determine baseline history and conduct analysis of reduction opportunities. Consider a new or revised travel policy to support reduction goals set by the SD.	2009-2011
Train staff in the use of Live Meeting (or other desktop collaborative software)	In Progress	Lower travel costs associated with staff travel.	Collaborative software installation in progress.	2009
Install Video Conferencing facilities	Planned	Lower travel costs associated with staff travel. Higher video conferencing equipment capital and operating costs.	Consider expanding number of installations.	2009-2011
Initiate Travel Policy	Planned	Lower travel costs associated with staff travel.	Consider a new or revised travel policy.	2009-2010
Mandate car pooling to government meetings	Planned	Lower travel costs associated with staff travel.	Consider implementation of a new or revised travel policy regarding car pooling to meetings.	2009-2010
Support alternative travel (bike/skateboard/walk/transit) for meetings	Planned	Lower travel costs associated with staff travel.	Consider implementation of a new or revised travel policy.	2009-2010
2.5 Employee Engagement				
Action	Action Planned	Outcome/Performance Measure	Notes Clarifying Action Taken	Timeframe
Provide climate change education	Planned	Increased employee involvement. Increased training costs. Reduction in GHG emissions.	Organize a sustainability working group/committee to identify climate change education opportunities for consideration by the SD Board.	2009-2011
Provide conservation education	Planned	Increased employee involvement. Increased training costs. Reduction in GHG emissions.	Organize a sustainability working group/committee to identify conservation education opportunities for consideration by the SD Board.	2009-2011
Hold contests to change behaviour/make pledge	Planned	Increased employee involvement. Increased staff resource time and costs. Reduction in GHG emissions.	Organize a sustainability working group/committee to lobby, coordinate, promote, develop targets, implement GHG initiatives, contests and education within the SD.	2009-2011
Hold contests/support to generate ideas	Planned	Increased employee involvement. Increased staff resource time and costs. Reduction in GHG emissions.	Organize a sustainability working group/committee which will have a mandate to encourage participation to generate ideas through contests.	2009-2011
Develop Green Teams	Planned	Increased employee involvement. Increased staff resource time and costs. Reduction in GHG emissions.	Organize a sustainability working group/committee and sub-committees to fulfill the goals of the SD.	

Support Green Teams (resources)	Planned	Increased employee involvement. Increased staff resource time and costs. Reduction in GHG emissions.	Organize a sustainability working group/committee and provide the necessary support and resources to fulfill the goals of the SD.	2009-2011
Provide green tips	Planned	Increased employee involvement. Increased staff resource time and costs. Reduction in GHG emissions.	Organize a sustainability working group/committee to lobby, coordinate , promote, develop and implement GHG initiatives , contests and education/awareness.	2009-2011
Support professional development	Planned	Increased employee involvement. Increased staff resource time and training costs. Reduction in GHG emissions.	Organize a sustainability working group/committee to identify professional development opportunities for consideration by	2009-2011
Add a green work goal to performance management	Planned	Increased employee involvement. Increased staff resource time and costs. Reduction in GHG emissions.	Organize a sustainability working group/committee to develop goals, targets, actions and performance measures.	2009-2011

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	Planned	Reduced water consumption and energy costs.	Install low flow devices for repairs and replacements. Review incentive opportunities available for replacing standard fixtures with low	2009-2011
Run dishwasher only when full	Planned	Reduced water consumption and energy costs.	Encourage efficient dishwasher operation and energy conservation through promotion, awareness and education.	2009-2011
Reduce/replace bottled water with filtered or refrigerated water	Planned	Reduced waste into landfill stream.	Continued use of bottled water dispensed in re-usable bulk containers. Through the sustainable working group/committee promote measures to reduce use of bottled water in disposable containers for events, and food programs.	2009-2011
Improve recycling measures	Planned	Reduced waste into landfill stream.	Through the sustainable working group/committee promote measures to improve recycling participation and continuous improvement at all sites.	2009-2011
Support composting	Planned	Reduced waste into landfill stream.	Through the sustainable working group/committee promote measures to expand participation in composting.	2009-2011
Use re-usable dishes	Planned	Reduced waste into landfill stream.	Through the sustainable working group/committee promote measures to minimize use of disposable dishes for catering and food programs.	2009-2011

Purchase green cleaning products	Planned	Reduced environmental impact. Higher cost than non-green products.	Continue to utilize green cleaning products and take measures to keep staff current on green cleaning advancements. Provide ongoing green cleaning training to custodial staff.	2009-2011
Use green (low-e paints)	Planned	Reduced environmental impact. Higher cost than non-green products.	Continue to utilize low-e paint products and take measures to keep staff current on product advancements.	2009-2011
Support sustainable procurement practices	Planned	Reduced environmental impact. Potential for higher costs.	Review opportunities and costs to increase the volume of sustainable products procured and review potential controls that could be implemented to standardize procurement practices according to available funding. Consider adopting a new policy.	2010-2011
Adopt low-carbon contracting practices	Planned		Review opportunities and costs associated with adopting a new policy.	2010-2011