



School District No. 67 (Okanagan Skaha)

2012 Carbon Neutral Action Report

Executive Summary

School District No. 67 (Okanagan Skaha) serves the communities of Penticton, Summerland, Naramata, and Kaleden in the south Okanagan region of British Columbia. School District No. 67 is signatory to and supports the Climate Action Charter in the province of British Columbia. The School District supports and practices sustainable initiatives to conserve energy and resources with the goal to reduce carbon emissions, reduce utility costs, and promote a cleaner environment for all students and staff.

District schools continue to practice the sustainable principles introduced through the Destination Conservation program.

Themes for the three years of the program are energy in the first year, water in the second year, and waste avoidance for the third year.



Overviews

2012 Greenhouse Gas Emissions

In 2012, operations in School District No. 67 (Okanagan Skaha) produced a total of 2003 carbon dioxide equivalent tonnes (CO₂e) of emissions. The school bus fleet produced 103 tonnes of CO₂e and those emissions do not require offset, leaving a total of 1900 tonnes of CO₂e requiring purchase of offsets. The majority, 1661 tonnes of CO₂e, were derived from heating and lights for school buildings. The balance was derived from vehicle fleet fuel and paper supplies.

It was estimated that fugitive emissions from stationary cooling comprise less than 0.01% of School District No. 67 (Okanagan Skaha) total emissions, and the ongoing effort to collect or estimate emissions from this source annually is disproportionately onerous. Thus, these emissions meet both the requirement to be below 1% of School District No. 67 (Okanagan Skaha) total emissions and the requirement to be onerous to collect. For this reason, emissions from this source have been deemed out-of-scope and are not included in School District No. 67 (Okanagan Skaha) total greenhouse gas emissions profile or offset purchase.

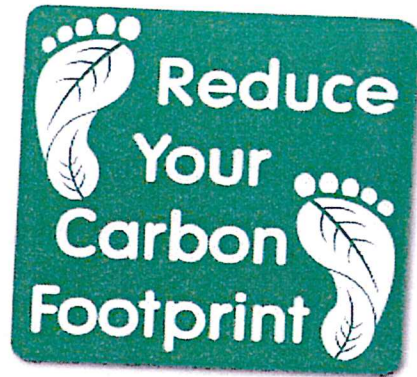
Offsets Applied to Become Carbon Neutral in 2012

In order to become carbon neutral in 2012, School District No. 67 (Okanagan Skaha) was required to purchase a total of 1900 tonnes of CO₂e from Pacific Carbon Trust at a cost of \$25 per tonne of CO₂e. Total cost for purchase of these carbon offsets for 2012 was \$47,500.00 for School District No. 67 (Okanagan Skaha).

As required by section 5 of the Carbon Neutral Government Regulation, 103 tonnes of CO₂e emissions resulted from the operation of school buses and were reported as part of our greenhouse gas emissions profile in 2012. However, they were not offset as they are determined to be out-of-scope under section 4(2)(c) of the Carbon Neutral Government Regulations.

Actions Taken to Reduce Greenhouse Gas Emissions in 2012

The School District continued with their progressive stance in 2012. The District examined the three buildings with the largest CO₂e emissions and made plans to upgrade the building systems to reduce their overall emissions. Princess Margaret Secondary was in need of a boiler upgrade due to failing systems. In connection with the mechanical upgrade, the District examined the possible replacement options and chose a high efficiency geothermal system to replace the old antiquated one. The construction of the new systems started in the summer and carried on into the fall with commissioning and setup complete late in the year. The upgrade is expected to reduce the overall building emissions by 70% pushing the building to the top of our efficiency/square meter metric.



A new direct digital control system was installed at Carmi Elementary School. The system replaced an older one that had reached the end of its life cycle. The new system takes advantage of up-to-date control algorithms to ensure the existing mechanical systems are running at their peak efficiency.

The District also undertook energy audits and engineering on two other district buildings in hopes of upgrading the mechanical systems to raise their overall building efficiency. These projects will be set for construction in the summer of 2013.

On a smaller scale, the District maintenance crews examined several of our schools to find areas where they could affect efficiency and occupant comfort at minimal costs. Several spaces were identified where classroom lighting upgrades could be completed with minimal disruption and low cost options.

Plans to Continue Reducing Greenhouse Gas Emissions 2013 - 2015

An energy audit was completed in 2012 on our largest facility. The audit highlighted several areas where we could increase our efficiency. By making the necessary changes we will be able to utilize less energy from our energy suppliers and draw more heat from the existing geothermal system. The design work has been completed and we are well into the construction with quantifying results to follow later in the year.

With the addition of the Carbon Neutral Capital Program as supported by the Ministry of Education, we were able to oversize the geothermal system at Princess Margret Secondary for future tie in of the neighboring middle school. Plans and engineering are in place to tender the project for a 2013 completion. This process will allow the sharing of heat between the two facilities creating a small district energy system out of our single geothermal system.

The District will also undertake a boiler retrofit at one of the elementary schools within the next year. The existing mid efficient boilers will be replaced with high efficiency units that will be able to work at lower temperatures without compromising the operating parameters of the boilers.

We are also looking at ways to fund a solar wall. The pilot project will use the energy from the sun to preheat the ventilation air before it reaches the mechanical distribution systems in the building. This will reduce the amount of heat required for the building thus reducing the overall CO₂e emissions.

The District will continue to request minor capital project funding from the Ministry of Education to upgrade school HVAC systems to modern, efficient, and reliable systems.



Ron Shongrunden
Secretary-Treasurer

March 30, 2013

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School District 67 Okanagan Skaha - 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	Annual training provided	Continue process	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	Continue anti-idling practice for school district service vehicles	Encourage schools to introduce anti-idling policies	2009	2012
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Transportation assistance parents are encouraged to car pool when driving to schools	Continue process	2008	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	City buses used on routes for students within walk limits to get to school; secure bike racks provided at all schools	Continue process	2008	No End Date (Continuous)
Other Mobile Fuel Combustion Actions					
Conservation Destination programs in schools to create awareness and conserve energy	Completed (in Reporting Year)	Maintain Conservation Destination initiatives at all schools		2008	2012
Adopted a travel policy	In Development	Procedures require minimized travel arrangements	Continue to develop policy	2009	No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	Purchased 2 new mini vans	Continue planning for replacement vehicles	2012	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	Purchased 2 new mini vans	Continue process	2008	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Continue to service all vehicles at regularly scheduled intervals	Continue process	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through ""workstation tune-ups""	Ongoing/In Progress	Did work station tune-ups	Continue to implement	2009	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Continue to promote energy consumption savings to staff	Continue to promote	2009	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Continue to promote energy consumption savings to staff	Continue to promote	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Continue to promote energy consumption savings to staff	Continue to promote	2009	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress	Continue to promote energy consumption savings to staff	Continue to promote	2009	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress	Continue to promote energy consumption savings to staff	Continue to promote	2009	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress	Elevator keys provided for wheel chair access only	Continue to implement	2009	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	Continue to promote energy consumption savings to staff	Continue to promote	2009	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	Continue to promote energy consumption savings to staff	Continue to promote	2008	No End Date (Continuous)
IT power management					
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	Installation of power management software	Continue to implement by adding additional devices	2009	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Implement server virtualization	Ongoing/In Progress	Did research and piloted the implementation	Continue to implement	2009	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	Did research and piloted the implementation	Continue to implement	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	Did research and piloted the implementation	Continue to implement by adding additional devices	2009	No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Ongoing/In Progress	Did research and piloted the implementation	Continue to implement	2009	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	Did research and piloted the implementation	Continue to implement	2009	No End Date (Continuous)
Owned buildings					
Establish energy performance baseline for owned buildings	In Development	Seeking funding: SD67 is not serviced by BC Hydro so does not have access to Utility Manager funding accorded to other districts	Press FortisBC for Utility Manager funding	2010	No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	Have requested a major capital project, but has not been approved	Will use LEED standards for major capital projects	2011	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	Two major buildings have undergone energy retrofits	Design has been started and energy retrofits will continue	2010	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress	Refrigerant management system in place	Continue process	2010	No End Date (Continuous)
Planning/management					
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development	Two real time meters installed	Continue with more schools	2012	No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	Remaining HVAC systems were reviewed for replacement; requested capital projects	Continue review	2010	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	During renovations lighting is examined to ensure proper lighting levels are maintained and efficiency levels are up to current standards	Continue to incorporate lighting upgrades into all renovation projects	2010	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	Review control systems to determine if the building systems are still operating in an efficient manner; replaced one of the older control systems to assist in operating the building in a more efficient manner	Continue to replace and upgrade systems with newer panels and control language	2012	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	Converted home learning to Moodle	Continue to implement	2009	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	Trustees have shown leadership with laptops at board meetings; technology used for video and audio conferencing; implementing Smartboard technology in schools to replace paper	Continue to implement	2008	No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development	Sever built, some training completed	Implementation	2011	No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	Number of online documents increased	Implementation	2011	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)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Other Paper Supplies Actions					
Usage of laptops and tablets	Ongoing/In Progress	One to one program for schools, principals and special needs; school district provides used laptops to general public	Continue to implement	2008	No End Date (Continuous)
Restructured a process to use less paper	Ongoing/In Progress	Software being used for document management and work orders	Ongoing process	2008	No End Date (Continuous)
Purchased cradle to cradle goods	Ongoing/In Progress	Bulk order of supplies shipped direct	Ongoing process	2008	No End Date (Continuous)
Encouraged re-use of furniture and equipment	Ongoing/In Progress	Centralized purchasing and inventory allows for reuse of equipment, furniture, computers, etc.	Ongoing process	2008	No End Date (Continuous)
Page monitor program	Ongoing/In Progress	Purchased electronic periodical subscriptions; purchasing electronic textbooks for math programs	Ongoing process	2008	No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	All paper purchased contains 30% recycled content	Continue to purchase	2008	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	New photocopiers purchased to reduce paper and energy consumption	Continue to replace	2008	No End Date (Continuous)

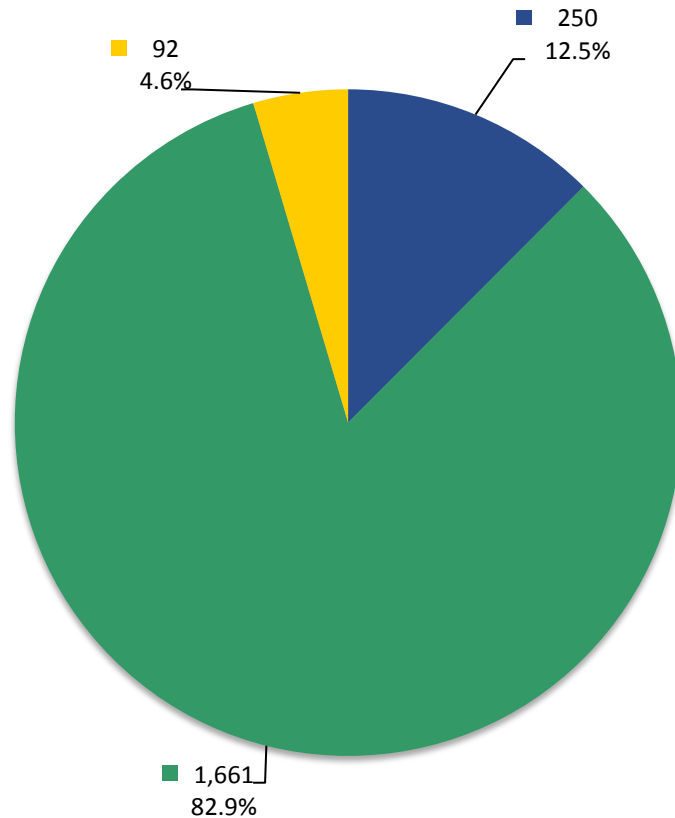
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Actions to Reduce Provincial Emissions and Improve Sustainability					
The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector					
Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Business Travel					
Behaviour change program					
Train staff in web-conferencing	In Development	Minimal training required, all staff have access for own use	Develop in-service training programs	2012	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress	All staff encouraged to attend meetings via web conference where practicable	Continue to remind staff to reduce travel	2011	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress	Continue to encourage carpooling	Continue to implement	2010	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Encourage walking when possible	Continue to implement	2010	No End Date (Continuous)
Policy and budgeting					
Create a low-carbon travel policy or travel reduction goal	Ongoing/In Progress	Encouraging car pooling whenever possible	Continue to encourage	2008	No End Date (Continuous)
Virtual meeting technology					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	Reviewed equipment	Continue to implement	2010	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress	Reviewed equipment	Continue to implement	2010	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	Two video-conferencing rooms have been built, one in each major community	Begin infastruction for meeting room web conferencing	2011	No End Date (Continuous)
Education, Awareness, and Engagement					
Staff Professional Development					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	Completed Destination Conservation program for schools	Continue to implement	2008	No End Date (Continuous)
Staff awareness/education					
Provide education to staff about the science of climate change	Ongoing/In Progress	Staff and students received education associated with Destination Conservation programs	Continue to provide education associated with Destination Conservation good practices	2008	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	Staff and students received education with Destination Conservation programs	Continue to provide education associated with Destination Conservation good practices	2008	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	Tips added to the Six-Seven news letter	Continue to practice	2011	No End Date (Continuous)
Team-building					
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Completed (in Previous Year)				No End Date (Continuous)
Other Sustainability Actions					
Building construction, renovation					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress	When capital projects are designed to sustainable standards equivalent to LEEDS	Continue to apply LEEDS equivalents standards to capital projects	2008	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	Value management and lifecycle costing performed for all new capital projects	Value management and lifecycle costing performed for all new capital projects	2008	No End Date (Continuous)
Procurement (non-paper supplies)					
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture,	Ongoing/In Progress	Re-use office equipment and furniture whenever possible	Continue to re-use office equipment and furniture whenever possible	2008	No End Date (Continuous)

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Actions to Reduce Provincial Emissions and Improve Sustainability					
The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector					
Action	Status	Steps Taken	Steps Planned	Start Year	End Year
carpeting, etc.)					
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress	Continue to purchase green cleaning products	Continue to purchase green cleaning products	2008	No End Date (Continuous)
Waste reduction/diversion					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	All schools and offices have bins to store recyclables for weekly pick up	Continue waste and recycle contract	2009	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress	Hazardous material storage facility cleaned out annually for removal to acceptable facility	Continue to remove hazardous materials from schools, store in district approved storage facilities for annual removal	2008	No End Date (Continuous)

School District 67 - Okanagan Skaha (Penticton)
Greenhouse Gas Emissions by Source
for the 2012 Calendar Year (tCO₂e*)



Total Emissions: 2,003

- 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 31, 2013 10:19 AM)

Total offsets required: **1,900**. Total offset investment: **\$47,500**. Emissions which do not require offsets: **103** **

*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.