2017

CARBON NEUTRAL ACTION REPORT

"Working Together for Student Success"

SD67
Okanagan Skaha

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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 year one; water in year two; and waste avoidance in year three.

Overview

This is the 2017 Carbon Neutral Action Report (CNAR) for School District No. 67. This report contains our 2017 emissions profile, offsets purchased, the actions we have taken in 2017 to reduce our GHG emissions and our plans to continue reducing emissions in 2018 and beyond. A new addition to our report is a section where we celebrate the successes of our past projects and highlight our reduction history.

By June 30, 2018, School District No. 67's final CNAR will be posted to our website at www.sd67.bc.ca.

2017 Greenhouse Gas Emissions

In 2017, operations in School District No. 67 (Okanagan Skaha) produced a total of 1881 carbon dioxide equivalent tonnes (CO_2e) of emissions. The school bus fleet produced 101 tonnes of CO_2e; however, those emissions do not require offset, leaving a total of 1780 tonnes of CO_2e requiring purchase of offsets. The majority, 1557 tonnes of CO_2e, were derived from heating and lights for school buildings. The remaining balance was derived from vehicle fleet fuel (257 tonnes of CO_2e) and paper supplies (67 tonnes of CO_2e).

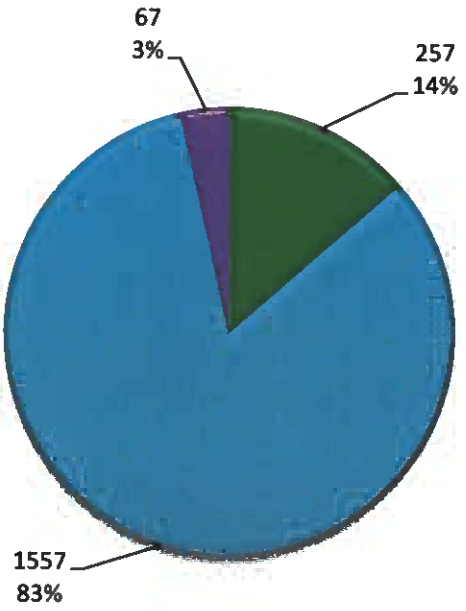
It was estimated that fugitive emissions from stationary cooling comprise less than 0.01% of School District No. 67 (Okanagan Skaha) total emissions. The ongoing effort to collect or estimate emissions from this source annually is disproportionately onerous, thus, for this reason, emissions from this 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 2017

In order to become carbon neutral in 2017, School District No. 67 (Okanagan Skaha) was required to purchase a total of 1780 tonnes of CO_2e at a cost of $25 per tonne of CO_2e. The total cost for purchase of these carbon offsets for 2017 was $44,500.00 for School District No. 67 (Okanagan Skaha).

As required by section 5 of the Carbon Neutral Government Regulation, 101 tonnes of CO_2e emissions resulted from the operation of school buses and were reported as part of our greenhouse gas emissions profile in 2017. 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.

2017 Emissions Source Report (tCO_2e)



Total Emissions: 1,881

- Mobile Fuel Combustion (Fleet and Other Mobile Equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies

Offsets Applied to Become Carbon Neutral in 2017

Total offsets required: **1,780**. Total offset investment: **$44,500**. Emissions which do not require offsets: **101****

*Tonnes of carbon dioxide equivalent (tCO_2e) 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.

Emissions and Offsets Summary

School District 67 GHG Emissions and Offsets for 2017 (tCO_2e)	
GHG Emissions created in calendar year	
Total Emissions	*1881*
Total Emissions for Offsets	*1780*
Adjustments to GHG Emissions Reported in Previous Years	
Total Emissions	*1580*
Total Emissions for Offsets	*1490*
Credit owing from PCT at end of 2016 reporting year (if applicable – from May 15 Invoice):	
Credit Owing	*$1,050.00*
Total Emissions for Offsets for the 2017 Reporting Year:	*$45,550.00*

Actions Taken to Reduce Greenhouse Gas Emissions in 2017

In 2017, we completed the installation of our first solar photo voltaic system. The system generated 95 MWh of electricity, offsetting our electrical bill by approximately $11,000.00 over the final nine months of the year. A second smaller system was installed at our maintenance facility and generated an additional 8.75 MWh, further reducing our electrical bills by approximately $1,000.00. Student and staff excitement grew throughout the year as the installation progressed, culminating with a tour of the installation by the science 9 classes as they were completing their module on electrical power and distribution. A third installation is planned for Skaha Lake Middle School early in the 2018 calendar year.

Mechanical upgrades at two Elementary schools were completed this year, and we are expecting substantially lower carbon consumption at both buildings in the coming years. Of particular note was the completion of the mechanical upgrade at Columbia Elementary school. The mechanical cooling unit failed early in the year and was replaced with a new heat pump. A heat pump has the ability to not only to expel heat from the building, but also draw heat in from the outside air, even when the outdoor temperatures are as low as -20°C. The existing cooling infrastructure is now used as an extremely efficient first stage of heating. The early returns show almost a 90% reduction in carbon if extrapolated out over the full year.

The District also invested heavily in new LED technology lighting over the past year by replacing over 1,000 T-8 tubes with new LED tubes. The update not only reduces power consumption, but also adds to the learning environment by creating consistent lighting levels throughout the educational space.

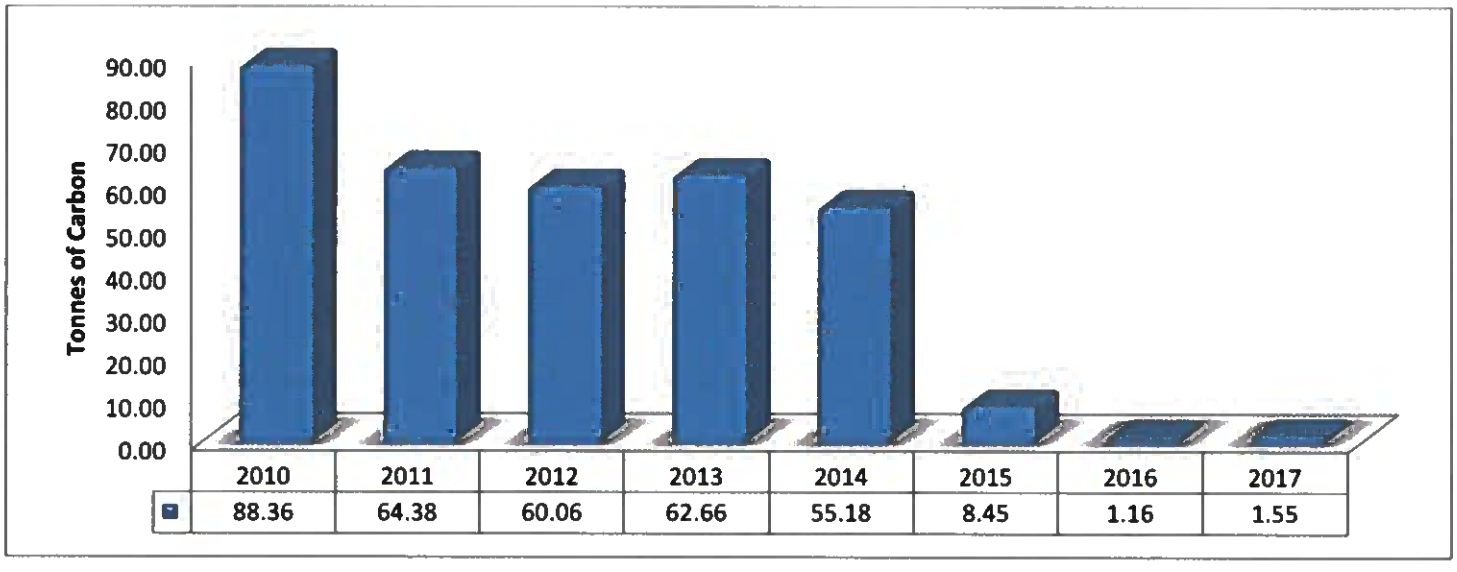
Plan to Continue Reducing Emissions

2018 is shaping up to be a milestone year for School District No. 67. Funding from the School Enhancement Program (SEP), as well as our Annual Facilities Grant (AFG), have enabled us to engineer and tender a geo-exchange/mechanical upgrade for our largest producer of carbon emissions. The Summerland Secondary upgrade is projected to create the largest single carbon emissions reduction project that the District has undertaken. Once the project is complete, the District is projected to be very close to the reduction target as set by the provincial government for the 2020 reporting year.

The District is also continuing to invest in solar photovoltaic with a new array being installed at Skaha Lake Middle School. The 125 kWh array will double the existing generation capacity of the school District to reduce operating budgets and carbon creation, as well as provide additional educational opportunities to students.

Sharing our Success

In 2014, the mechanical heating and cooling systems were failing at Wiltse Elementary School. The constant failures and breakdowns were causing a low quality learning environment and draining the resources of the facilities department. A new mechanical system with geo-exchange was designed and installed. Prior to the upgrades we were offsetting an average of 66 tonnes of CO_2e per year.



The upgrade had an immediate impact on the carbon production at the school: the first year with the new system the emissions reduced to less than nine tonnes CO_2e, and after the final commissioning, we have a two year average of less than two tonnes per year. The final impact results in lower operating costs, a far superior learning environment, and points to the environmental stewardship of School District No. 67 (Okanagan Skaha).

The District looks forward to continuing to build on the successes of the past to create a greener future for all British Columbians.

Bonnie Roller-Routley
Secretary-Treasurer

Wendy Hyer
Superintendent of Schools

Part 1: CNAR Survey

1. General Information

Name: Doug Gorcak

Contact Email: DGORCAK@SUMMER.COM

Organization Name: School District # 67 (Okanagan Skaha)

Sector: School District

2. Stationary Sources (eg. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

During 2017, did your organization take any of the following actions to support emissions reductions from buildings? (please select all that apply)

Performed energy retrofits of the organization's building(s)

2. Stationary Sources - Other? Please specify:: Installed LED lighting

If you selected "*Performed energy retrofits of the organization's building(s)*":

How many buildings were retrofitted?:

If you selected "*Built, or are building new LEED Gold or other "Green" buildings*":

How many new "Green" buildings?:

Did your Organization perform any retrofits during 2017? Please describe briefly:

Two retrofits of HVAC systems were completed in 2017. At Uplands and Columbia Elementary we installed high efficiency boilers as well as a air source heat pump to reduce energy consumption, greenhouse gas production and increase occupant comfort. At Columbia Elementary the heat pump replaced an existing cooling only unit, we now use the heat pump to put heating through the cooling pipes to create an efficient heating system.

2a. Stationary Sources (eg. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

Please briefly describe your organization's plans to continue reducing emmissions from its stationary sources:

a) Over the next 1-5 years

We plan to continue to address our largest emitters of carbon through upgrading boilers and HVAC systems.

b) Over the following 6-10 years

Once most of the larger projects are completed we will practice sustainable operations to try to keep our emissions low.

3. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:

During 2017, did your organization take any of the following actions to support emission reductions from its mobile sources? (please select all that apply)

None of the above

If you selected "*Replaced existing vehicles with more fuel efficient vehicles (gas/diesel)*":

How many vehicles?:

If you selected "*Replaced existing vehicles with hybrid or electric vehicles*":

How many vehicles?:

3a. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:

Please briefly describe your organization's plans to continue reducing emissions from its mobile sources:

a) Over the next 1-5 years

We would like to replace some of our smaller service vehicles with electric ones. As well we want to continue to minimize travel to reduce emissions.

b) Over the following 6-10 years

We would like to replace some of our smaller service vehicles with electric ones. As well we want to continue to minimize travel to reduce emissions.

4. Supplies (Paper): Indicate which actions your PSO took in 2017:

During 2017, did your organization take any of the following actions to support emissions reductions from paper supplies? (please select all the apply)

None of the above

If you selected "*Had a policy requiring the purchase of recycled content paper*":

State the required recycled content here (30%, 50%, 100%):

If you selected "*Had a policy requiring the purchase of alternate source paper (bamboo, hemp, wheat, etc)*", which type of alternate source paper did you use?

Please briefly describe your organization's plans to continue reducing emissions associated with its office paper use in future years.

The district entered into a new copier/printer contract and reduces the numbers of Multifunction devises in the schools in an effort to reduce paper consumption.

5. Other Sustainability Actions

a) Business Travel

During 2017, did your organization take any of the following actions to support emissions reductions from business travel? (please select all that apply)

None of the above

b) Education/Awareness

During 2017, did your organization have any of the following programs or initiatives to support sustainability education and awareness? (please select all that apply)

None of the above

c) Other Sustainability Actions

During 2017, did your organization have any of the following programs or initiatives to support sustainability? (please select all that apply)

None of the above