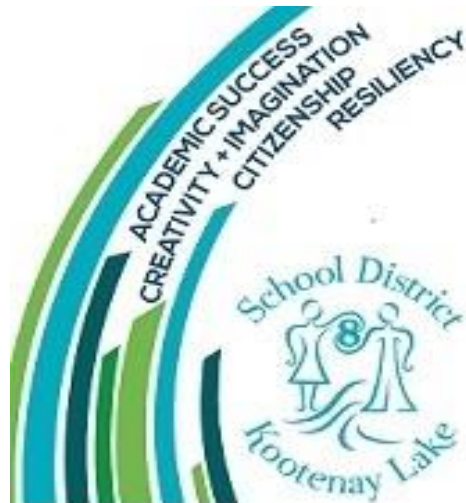


2017 Carbon Neutral Action Report School District No.8 (Kootenay Lake)

May 18, 2018



Our Mission: "We focus on excellence for all learners in a nurturing environment."

Contents

| | |
|--|---|
| Declaration Statement | 3 |
| Executive Summary | 4 |
| Introduction | 5 |
| Provincial Policy..... | 5 |
| SD8 Policy and Action on Sustainability..... | 5 |
| Greenhouse Gas Emissions | 5 |
| Emissions Sources | 5 |
| 2017 Emissions and Offsets | 6 |
| Emissions Reductions Activities 2017..... | 7 |
| Actions to Reduce "Out of Scope" (non SD8) GHG Emissions in 2017 | 7 |
| Actions to Enhance Overall Sustainability in 2017 | 8 |
| Future Activities | 8 |
| Carbon Neutral Action Table | 8 |



Bikes at School, WE Graham Community School

This Document is based in great part on the 2015 report prepared by the Carbon Neutral Action Committee Members. Thank you to:

- *Curtis Bendig, School Trustee, Nelson*
- *Larry Brown, Director of Operations*
- *Michelle Bennett, CUPE*
- *Bob Reimer CUPE*
- *Lori Thompson, DPAC*
- *Patricia Dehne/, Community Energy Association*

Art on the Report Cover prepared by Ms. Solomon's Grade 2 students Winlaw Elementary: Water conservation.

Declaration Statement

Title: "2017 Carbon Neutral Action Report"

Organization name: Board of Education of School District No. 8 (Kootenay Lake)

Declaration statement: This Carbon Neutral Action Report for the period January 1st, 2017 to December 31st, 2017 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2017 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2017 and beyond.

By June 30, 2018 School District No. 8 Kootenay Lake's final *Carbon Neutral Action Report* will be posted to our website at www.sd8.bc.ca.

Overview: *Actions for 2017 include the continuation of a Facility Planning Process to improve student services and building efficiencies, completion of 3 boiler projects to reduce GHG emissions, complete window replacement/upgrade at 1 site and upgrade of DDC at 4 sites, and participation in the City of Nelson Community Solar Garden Project. We have established our GHG reduction target and developed an Action Table.*

Emissions and Offset Summary Table:

| School District 8 (Kootenay Lake) GHG Emissions and Offset for 2017 (TC02E) | |
|--|-------|
| GHG Emissions created in Calendar Year 2017: | |
| Total Emissions (tC02e) | 2,822 |
| Total Offsets (tC02e) | 1,838 |
| Adjustments to GHG Emissions Reported in Prior Years+ | |
| Total Emissions (tC02e) | 26 |
| Total Offsets (tC02e) | 26 |
| Grand Total Offsets for the 2016 Reporting Year | |
| Grand Total Offsets (tC02e) | 1864 |

Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, School District No. 8 (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2017 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that, in exchange for the Ministry of Environment ensuring that these offsets are retired on the Organization's behalf, the Organization will pay the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.

Executive sign-off:

Signature Christine Perkins Date May 18, 2018
 Name (please print) Dr. Christine Perkins Title Superintendent/CEO

Executive Summary

Kootenay Lake School District No. 8 maintains our commitment to promoting sustainability and fostering policies, practices and educational programs to protect and preserve our environment. We focus on excellence for all learners in a nurturing environment and work on doing the right things in terms of reducing energy use and GHG emission reductions. We continue to build on past efforts and work to incorporate sustainability into all aspects of our operations and school based community.

We feel that leadership, in attempting to reduce our carbon footprint, is best demonstrated through action and example. We encourage a culture of responsible stewardship and are delighted by initiatives from our students and staff including annual Earth Day events and sustainability conferences. Our students practice conservation activities in our buildings daily and we are proud of the passion and commitment of our students, staff, parents and education/community partners who work together to create a more sustainable local and global community. These efforts align with our District focus on the UN Sustainability Goals and provide excellent access points for deep inquiry and action by our students.

We are pleased to present this Carbon Neutral Action Report as a tool to celebrate our successes and identify our future projects as we work on our common goal to reduce our carbon footprint and become carbon neutral.



Dr. Christine Perkins
Superintendent/Chief Executive Officer
May 18, 2018

Introduction

Since 2008, School District 8, as with all School Districts in BC, has prepared a Carbon Neutral Action Report. The report outlines annual projects and actions that our school community, staff, students and volunteers undertake to decrease our carbon footprint and improve our operating practices. Teachers and students in our District are working in their classrooms to incorporate sustainability into the many components of school and community life. We are committed to meeting our GHG emissions reduction target and continue to seek out creative and cost-effective strategies to meet that commitment.



Outdoor Learning (SD8 website)

Provincial Policy

In 2007 the Province enacted the Greenhouse Gas (GHG) Reduction Targets Act (GGRTA), known as Bill 44 (2007), requiring that public sector organization (PSOs) be carbon neutral beginning in 2010, this includes School Districts.

Being carbon neutral requires that an organization

- Measure: Measure and report carbon emissions, known as the 'Carbon Footprint'
- Act: Take action to reduce GHG emissions
- Lead: Purchase carbon offsets for any remaining emissions in order to effectively 'neutralize' the environmental impact of these emissions.

For the purpose of reducing greenhouse gas emissions in BC, Bill 44 established the target that by 2020, GHG emissions in BC will be at least 33% less than the level of emissions in 2007.

SD8 Policy and Action on Sustainability

Our School District "Action on Sustainability" considers resource conservation, reducing our carbon footprint and connecting our sustainability efforts to education. By becoming active in energy management and considering energy efficiency in operations, School District 8 will achieve both greenhouse gas emission reductions and energy cost savings.

School District 8 adopts the provincially established GHG emissions reduction target of 33% below the 2007 levels by 2020.

Greenhouse Gas Emissions

Our District uses SMARTTool to track and report emissions as required by the Greenhouse Gas Reductions Targets ACT (GGRTA, 2007) for all public sector entities in BC.

Emissions Sources

Reportable sources of GHG emissions within School District 8 are:

- Natural Gas consumed within facilities to run heating and hot water systems
- Propane used in facilities or operations.
- Electricity consumptions within facilities.
- Vehicle fuel consumption of the District owned fleet vehicles, known as the white fleet (excluding school buses).
- Paper consumption.

2017 Emissions and Offsets

For the 2017 calendar year, offset emissions are 1838 tonnes of CO₂e. Carbon offset are currently priced at \$25 per tonne of CO₂e. The 2016 offset expenditure is \$45,950

School District 08

Data Source: SMARTTool Reports

| Calendar Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|----------|----------|----------|----------|----------|----------|----------|
| Scope 1 (Direct Emissions) | | | | | | | |
| Mobile Combustion (Fleet) -measured in litres | 377308 | 392901 | 389326 | 330099 | 398163 | 431201 | 414318 |
| Mobile Combustion (Fleet) tonnes CO ₂ e | 1001 | 1043 | 1032 | 881 | 1036 | 1156 | 1115 |
| Stationary Combustion, Reported measured in GJ | 35581 | 32880 | 36521 | 37349 | 32372 | 31476 | 29500 |
| Stationary Combustion, Reported tonnes CO ₂ e | 1957 | 1670 | 1868 | 1907 | 1659 | 1610 | 1465 |
| Scope 2 (Indirect Emissions) | | | | | | | |
| Purchased Energy, Reported measured in GJ | 12418 | 19774 | 20138 | 20568 | 19347 | 19193 | 47981 |
| Purchased Energy, Reported tonnes CO ₂ e | 27 | 136 | 81 | 58 | 54 | 58 | 144 |
| Scope 3 (Business Travel and Office Paper) Emissions | | | | | | | |
| Office Paper measured in packages | 12868 | 9011 | 10812 | 12975 | 11010 | 13645 | 13835 |
| Office Paper measured tonnes CO ₂ e | 89 | 58 | 70 | 84 | 69 | 87 | 89 |
| Total Emissions, Calendar Year (tonnes CO ₂ e) | 3073 | 2907 | 3051 | 2929 | 2818 | 2911 | 2822 |
| Carbon Neutral or Offset Exempt | 884 | 907 | 898 | 765 | 911 | 999 | 984 |
| Offset Adjustments | -1 | -1 | -1 | 0 | 0 | 39 | 26 |
| Total for Offsets | 2190 | 2002 | 2154 | 2164 | 1907 | 1949 | 1838 |
| Offset Investment at \$25/tonne CO ₂ e | \$48,825 | \$49,150 | \$53,550 | \$54,100 | \$47,675 | \$48,725 | \$45,950 |

Our School District is pleased to note that emissions have begun a downward trend. Not only are we saving money on energy expenditures, we are reducing our offset purchase amount and creating more comfortable workplaces and learning environments. The work that has been put in place by staff, students and community volunteers in the past five years is beginning to pay off. Further, we note that the 3 boiler project updates of 2015, which went fully online in early 2016 will show further GHG reductions in future years.

| 2015 School Boiler Project | projected tonnes GHG saved starting in 2016 |
|----------------------------|---|
| WE Graham Community | 26 |
| Hume Elementary | 36 |
| LV Rogers Secondary | 84 |
| Total | 146 |

Some factors to note when reviewing emission trends:

- **Propane** is expensive and high in greenhouse emissions.
- **Natural gas** has moderate GHG emissions factor, and is not available at our rural facilities.
- Years where **job action** was experienced may show a reduced amount of energy use
- **Weather** has an impact emissions and energy costs. Colder and heavier snow winters have higher energy use.

- Timing of tank refueling may impact emissions as the data is recorded at time of purchase. Our fleet vehicle fuel tank stores 24,000 litres.
- School District buses are "out-of-scope" and contribute to the greater community by reducing school related car traffic.
- Energy efficient projects do eventually pay off (i.e., the boiler replacements require a year of operation before the GHG reductions show up in the data.)

Careful monitoring of the energy consumption of the facilities and tweaking by operations staff create efficiently operated buildings. Recording energy data per facility helps staff quickly note anomalies in energy use and potential mechanical problems.



Crawford Bay School (SD8 website)

Emissions Reductions Activities 2017

In 2017 our School District implemented energy conservation activities and completed some facility retrofits and improved energy efficiencies, including:

- Planning for and replacement of boilers at three schools.
- On-going facilities improvements: lighting, building envelope maintenance
- Light fixtures in some hallways de-lamped.
- Accurate energy consumption, costs and greenhouse gas emissions record keeping to support future project business cases.
- Continue HVAC improvements: controls upgrades, roof top AC upgrades, and heat recovery ventilation units.
- Natural Resources Canada Smart Driver training courses to reduce fuel consumption and reduce vehicle idling.
- School bus route efficiencies.
- Paper consumption reductions through electronic distribution of memos/report cards and default printing to double sided.
- Working with energy manager to identify energy projects and initiatives.

Actions to Reduce "Out of Scope" GHG Emissions in 2017

Our School District participates in activities that contribute to GHG emissions reductions in our community. Although these are not specifically "in scope" for our carbon neutral reporting requirements they contribute to the overall community wide aspect of reducing GHGs in our world.

- Participate in Strategic Community Energy and Emissions Planning workshops and implementation of policy and action at the local municipality and Regional District level.
- Participate in BC Mayor's Climate Leadership workshop "Nelson Solutions Table" and submission to inform the Provincial Climate Leadership Plan.

Actions to Enhance Overall Sustainability in 2017

Our School District has taken actions that improve the overall sustainability of our District and the greater community. These include:

- Student organized sustainability events.
- Ten solar panels purchased in the City of Nelson Community Solar Garden Project.
- Review and development of a policy to allow employees to use school buses for commuting. (Students remain service priority, but staff on school buses is "win-win" to provide a transportation alternative for workers to access remote schools and reduce their work-related commuting emissions).
- Encourage cycling to school.
- Support healthy active transportation initiatives (walking school bus, walking/cycling paths, safety education) in conjunction with community partners (ROCK, MOTI, Interior Health)
- Enhance shared facility and infrastructure initiatives with community partners (community gyms, community centres, community gardens, playing fields and playgrounds).
- Review our facilities and their impact on our carbon footprint. (Ensure that facilities are sustainable and that all new development/renovation built with sustainability, energy efficiency and life cycle costing considered).



Salmo School Garden (SD8 website)

Future Activities

Carbon Neutral Action Table

The Carbon Neutral Action Committee presents this Carbon Neutral Action Table: "Measure Act Lead". Without measuring our emissions, we do not have the basis to act. Acting on emissions reductions shows leadership in our organization, with our students and to our community. We believe that a Carbon Neutral Action Plan works to provide a comfortable and sustainable workplace that enhances our District mission: "We focus on excellence for all learners in a nurturing environment." The 2015 committee reviewed the public service organization "self-certification checklist" and suggests the following actions that could be successful given the geography, organizational and operational boundaries of our school district.

| | |
|---------|--|
| Measure | <ul style="list-style-type: none"> ○ Review and share energy consumption data; this enables schools of similar sizes to both compare with each other and monitor past energy performance; encourage healthy competition among schools. ○ Note achievements in energy reductions based on monthly utility bills. ○ Track annual energy consumption per building to see where efficiencies can be made and to note anomalies. |
|---------|--|

| | |
|----------|--|
| Act/Plan | <ul style="list-style-type: none"> ○ Develop a concise sustainability plan that involves everyone in the district to achieve the goals of greenhouse gas reductions and supports volunteer involvement. ○ Establish green standards purchasing policy for capital purchases and goods that are replaced infrequently (furniture, carpets, etc.). ○ Plan for extreme weather events and evaluate weather event infrastructure. ○ Consider not changing with daylight savings time (i.e., one district one time, shift school start times). |
| Lead | <ul style="list-style-type: none"> ○ Celebrate our success. ○ Develop sustainability grants within schools to challenge students to create innovative projects that advance sustainability in their school and wider community. ○ Follow Vancouver School District's vision to be the greenest, most sustainable school district in North America and strive to match in our district. ○ Solicit our district community for ideas and suggestions; ask for solutions when weaknesses are found. ○ Include student voice for input and involvement. ○ Apply for provincial energy and climate action awards to showcase our innovation. ○ Work with our neighbouring local governments on partnerships and innovation; i.e., Crawford Bay Community School geothermal heating. ○ Monitor and share the experience of the Nelson Community Solar Garden Project and the 10 District purchased school solar panels. |
| Promote | <ul style="list-style-type: none"> ○ Familiarize our District with the Carbon Neutral Government Regulations and Greenhouse Reduction Targets Act. ○ Promote energy efficient upgrades and their benefits; i.e., comfort, cost savings. ○ Publicise our GHG reduction target. ○ Increase awareness of energy and water consumption and ways to conserve. |
| Staff | <ul style="list-style-type: none"> ○ Establish an on-going green/sustainability climate action team. ○ Investigate office set up and adjustable workstations for health, wellness and comfort. ○ Greenhouse gas measurement and carbon neutral reporting training to establish understanding. ○ Driver training NRCAN fuel efficient driver course. ○ Custodial workshop on energy efficiency. ○ On-going green professional development. ○ Support staff education about the science of climate change, conservation of water, energy and/or raw materials. ○ Custodian staff to participate in school challenges and energy saving practice: i.e., turn off computers/lights at night, reward "success". |

| | |
|---|---|
| | <ul style="list-style-type: none"> ○ Review BC Hydro Workplace Conservation Awareness program; i.e., stickers to remind to turn off, employee engagement poll. |
| <p style="text-align: center;">School Community</p> | <ul style="list-style-type: none"> ○ Within our schools develop a culture of sustainable thinkers: i.e., turn off lights, reduce paper use. ○ Establish student ambassadors to remind school community on programs: i.e., anti-idling; recycling; wear a sweater; active transportation; reduce consumption. ○ Introduce energy conservation curriculum: i.e., secondary independent directed studies course; pilot Fortis BC developed secondary and primary curriculum. ○ Develop contests or school/classroom challenges (per capita basis): i.e., engage community in energy savings activities like sweater day, hour no power, lights out when not required, measure energy in classrooms, eliminate paper cups, poster contest, bike to school week. ○ Reduce use of high energy consuming items (i.e., heaters, coffee pots) and review alternatives to these items such as timers, use of power bars or elimination ○ Host annual student organized conferences and committees: i.e., District Wide Sustainability Conference; Green and Healthy School committees; World Cafe meetings; Symposium on Climate Change. ○ School newsletters/websites "green tips": i.e., water, energy and raw materials conservation. ○ Register for energy challenges and contests: i.e., Blue Dot program, David Suzuki ○ 30x30 challenge. ○ Establish community gardens and organics diversion/composting at schools to support regional organics ban from landfills. |
| <p style="text-align: center;">Facilities</p> | <ul style="list-style-type: none"> ○ Complete sustainability audits on facilities to assess and understand building performance. ○ Continue to improve our buildings through maintenance and upgrades to be more energy efficient and comfortable learning spaces. ○ Continue efforts with new sustainable facility design to ensure low carbon, low cost and low energy facilities become our district standard and that new buildings are developed with a sustainability lens. ○ Commit to building better buildings with green construction and reduction of foot print. ○ Right-size facilities to efficiently match floor space to student enrollment. ○ Develop innovative and flexible classroom space including outdoor classrooms per student symposium wish list. ○ Keep informed of Fortis BC/ BC Hydro conservation and incentive programs. ○ Conduct a lighting audit: add lighting sensors to classrooms and reduce overall lighting use at a given time; evaluate the opportunity for LED exterior lighting projects. |

| | |
|----------------|---|
| | <ul style="list-style-type: none"> ○ Ensure HVAC equipment on night settings when unoccupied time is scheduled (i.e., school breaks). ○ D Upgrade DOC (direct digital control) systems. ○ D Ensure timers are used and in effect in the facilities where they have been established. ○ D Educate building staff and operators on building systems, how to control individual heating controls and review on demand charges. ○ D Consider the benefits of biomass heating to reduce use of propane. |
| Water | <ul style="list-style-type: none"> ○ Continue to plan for water conservation and replace fixtures with low water use models; <ul style="list-style-type: none"> ○ i.e., tap aerators, low flush toilets, automatic turn off fixtures. ○ As hot water tanks are retired, install instantaneous type heaters. ○ Monitor water consumption of the facilities that are on water meters. |
| Waste | <ul style="list-style-type: none"> ○ Install multi-compartment trash cans (for recyclables, compost and trash). ○ Implement a hazardous waste reduction and disposal strategy for electronics including computer parts and monitors, batteries, paints, fluorescent bulbs, etc. ○ Develop innovative uses for waste materials: i.e., old tires to fences or planters. ○ Support composting efforts at schools. |
| Transportation | <ul style="list-style-type: none"> ○ Continue renewal of fleet to more efficient or low carbon/ electric vehicles. ○ Consider the low impact of electric vehicles (EV) and support installation of EV charging infrastructure on or near school sites. ○ Review vehicle fuel consumption data and comparisons with operators to promote understanding of fuel efficient operations ○ Encourage alternate travel for business; i.e., carpool, bike, walk, transit, staff on school buses. ○ Develop an active transportation plan for students and staff to reduce driving. ○ Support bike to school week. |
| Paper | <ul style="list-style-type: none"> ○ Inform the district about the "history of paper usage". ○ Monitor paper options and cost out recycled paper versus non-recycled/other fibers. ○ Review print management policies and practices and implement a reduced printing policy. ○ Set default of all printers and copiers to double sided print. ○ Initiate a program to facilitate behavioural changes away from paper use. ○ Further promote electronic means to circulate communication, memos and report cards. |

Part 1: CNAR Survey

1. General Information

Name: Bruce MacLean

Contact Email: bmaclean@sd8.bc.ca

Organization Name: School District #8

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)

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

How many buildings were retrofitted?: 12

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:

Upgrade to LED lighting inside and out - 12 sites complete

Upgrade of DDC systems at 4 sites

Window upgrade at large elementary school

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

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

a) Over the next 1-5 years

continue building envelop upgrades - windows, roofing
upgrade boiler and controls
lighting controls

b) Over the following 6-10 years

design and installation of geothermal systems

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)

Replaced existing vehicles with more fuel efficient vehicles (gas/diesel)

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

How many vehicles?: 2

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

continue to upgrade both service vehicles and bus fleet

b) Over the following 6-10 years

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)

Had an awareness campaign focused on reducing office paper use

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.

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)

Support for professional development on sustainability (e.g. workshops, conferences, training)

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)

An operations policy or program to facilitate the reduction and diversion of building occupant waste (e.g., composting, collection of plastics, batteries) from landfills or incineration facilities