

2018 Carbon Neutral Action Report

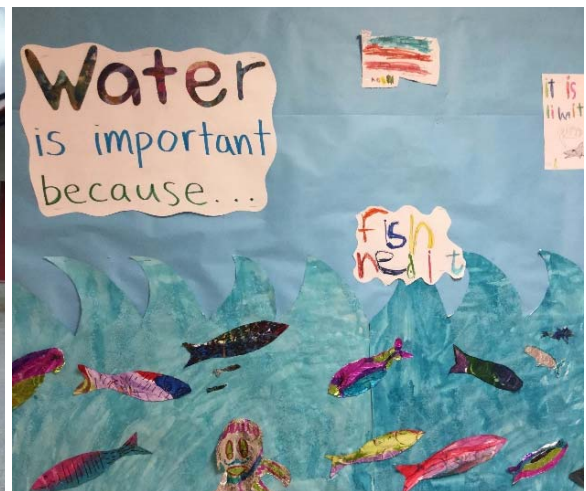
School District No. 8 (Kootenay Lake)

Prepared: June 26, 2019

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

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Bikes at School, WE Graham Community School. Art prepared by Gr. 2 students, Winlaw Elementary.

This Document is based in great part on the 2015 report prepared by the Carbon Neutral Action Committee Members. Thank you to: Curtis Bendig (Teacher and former Trustee), Michelle Bennett (CUPE), Bob Reimer (CUPE), Lori Thompson (DPAC), Patricia Dehne/(Community Energy Association).

Declaration Statement

Title: "2018 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, 2018 to December 31st, 2018 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2018 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2019 and beyond.

By June 30, 2019 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 taken 2018 include the continuation of a Facility Planning Process to improve student services and building efficiencies, completion of mechanical assessments at 8 sites to help prioritize and identify projects to reduce GHG emissions, complete window replacement/upgrade project at one site, upgraded Direct Digital Control (DDC) systems at four sites and completed DDC audits at all remaining sites, as well as continued participating in the City of Nelson Community Solar Garden Project.

Emissions and Offset Summary Table

School District No. 8 - Kootenay Lake GHG Emissions and Offset for 2018 (tCO ₂ e)	
GHG Emissions created in Calendar Year 2018	
Total Emissions (tCO ₂ e)	3,261
Total BioCO ₂	37.6
Total Offsets (tCO ₂ e)	2,348
Adjustments to GHG Emissions Reported in Prior Years+	
Total Emissions (tCO ₂ e)	-
Total Offsets (tCO ₂ e)	255
Grand Total Offsets for the 2018 Reporting Year	
Grand Total Offsets (tCO ₂ e)	2,603

Retirement of Offsets: In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, *School District No. 8 (Kootenay Lake)* (the Organization) is responsible for arranging for the retirement of the offsets obligation reported above for the 2018 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

June 26, 2019

Date

Dr. Christine Perkins
Name

Superintendent & Chief Executive Officer
Title

Executive Summary

School District No. 8 (Kootenay Lake) maintains our commitment to promoting sustainability by 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 believe 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

Introduction

Since 2008, School District No. 8 (Kootenay Lake), 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.

School District No. 8 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 No. 8 (Kootenay Lake) will achieve both greenhouse gas emission reductions and energy cost savings.

School District No. 8 (Kootenay Lake) 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 No. 8 (Kootenay Lake) 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.

2018 Emissions and Offsets

For the 2018 calendar year, offset emissions are 2,603 tonnes of CO₂e. Carbon offsets are currently priced at \$25 per tonne of CO₂e. The 2018 offset expenditure is \$65,075 plus GST.

School District No. 8 (Kootenay Lake)

Data Source: SMARTTool Reports

Calendar Year	2012	2013	2014	2015	2016	2017	2018
Scope 1 (Direct Emissions)							
Mobile Combustion (Fleet) measured in litres	392,901	389,326	330,099	398,163	431,201	414,318	394,430
Mobile Combustion (Fleet) tonnes CO ₂ e	1,043	1,032	881	1,036	1,156	1,115	1,059
Stationary Combustion, Reported measured in GJ	32,880	36,521	37,349	32,372	31,476	29,500	40,394
Stationary Combustion, Reported tonnes CO ₂ e	1,670	1,868	1,907	1,659	1,610	1,465	2,075
Scope 2 (Indirect Emissions)							
Purchased Energy, Reported measured in GJ	19,774	20,138	20,568	19,347	19,193	47,981	19,342
Purchased Energy, Reported tonnes CO ₂ e	136	81	58	54	58	144	58
Scope 3 (Business Travel and Office Paper) Emissions							
Office Paper measured in packages	9,011	10,812	12,975	11,010	13,645	13,835	10,638
Office Paper measured tonnes CO ₂ e	58	70	84	69	87	89	68
Total Emissions, Calendar Year (tonnes CO ₂ e)	2,907	3,051	2,929	2,818	2,911	2,822	3,261
Carbon Neutral or Offset Exempt	907	898	765	911	999	984	913
Offset Adjustments	-1	-1	0	0	39	26	255
Total for Offsets	2,002	2,154	2,164	1,907	1,949	1,838	2,603
Offset Investment at \$25/tonne CO ₂ e	\$49,150	\$53,550	\$54,100	\$47,675	\$48,725	\$45,950	\$65,075

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 several years is beginning to pay off. Further, we note that the numerous systems upgrades over the past five years will show yet 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.)



Crawford Bay School (SD8 website)

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.

Emissions Reductions Activities 2018

In 2018 our School District implemented energy conservation activities and completed some facility retrofits and improved energy efficiencies, including:

- On-going facilities improvements: lighting upgrades, building envelope maintenance and 1 full site window replacement project;
- Direct Digital Control (DDC) systems upgraded at four sites;
- 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;

Actions to Enhance Overall Sustainability in 2018

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

- Student organized sustainability events;
- Students at Blewett Elementary underwent Cool It! Climate Leadership Training;
- Encourage cycling to school and work;
- 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); and
- Review our facilities and their impact on our carbon footprint, attempting to ensure that facilities are sustainable and that all new development/renovations are built with sustainability, energy efficiency and life cycle costing considered.

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.

<ul style="list-style-type: none"> ▪ 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". ▪ Review BC Hydro Workplace Conservation Awareness program; i.e., stickers to remind to turn off, employee engagement poll.
<p>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>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. ▪ Ensure HVAC equipment on night settings when unoccupied time is scheduled (i.e., school breaks). ▪ Upgrade DOC (direct digital control) systems. ▪ Ensure timers are used and in effect in the facilities where they have been established. ▪ Educate building staff and operators on building systems, how to control individual heating controls and review on demand charges. ▪ Consider the benefits of biomass heating to reduce use of propane.
<p>Water</p>
<ul style="list-style-type: none"> ▪ Continue to plan for water conservation and replace fixtures with low water use models i.e., tap aerators, low flush toilets, automatic turn off fixtures. ▪ As hot water tanks are retired, install instantaneous type heaters.

<ul style="list-style-type: none"> ▪ 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. ▪ New print management policies and practices and a reduced printing policy. ▪ New program to facilitate behavioural changes away from paper use. ▪ Further promote electronic means to circulate communication, memos and report cards.