

# 2015 Carbon Neutral Action Report School District No. 8 (Kootenay Lake)

May 30, 2016



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

Report Prepared by:



and SD8 Finance and Operation Carbon Neutral Action Committee

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This Document has been 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 Dehnel, Community Energy Association

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

### **Declaration Statement**

Title: "2015 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 1<sup>st</sup>, 2015 to December 31<sup>st</sup>, 2015 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2015 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2016 and beyond.

By June 30, 2016 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 2015 include commencement of a Facility Planning Process to improve student services and building efficiencies, completion of 3 boiler projects to reduce GHG emissions, 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	e) GHG Emissions and Offset for 2015 (TCO2E)
GHG Emissions created in Calendar Year	r 2015:
Total Emissions (tCO₂e)	2818
Total Offsets (tCO <sub>2</sub> e)	1907
Adjustments to GHG Emissions Reported	d in Prior Years
Total Emissions (tCO <sub>2</sub> e)	0
Total Offsets (tCO <sub>2</sub> e)	0
Grand Total Offsets for the 2015 Reportir	ng Year
Grand Total Offsets (tCO <sub>2</sub> e)	1907

#### **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 2015 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:**

1

All was a second of the second	May 31, 2016	
Signature	Date	
Jeff Jones	Superintendent	
Name	Title	

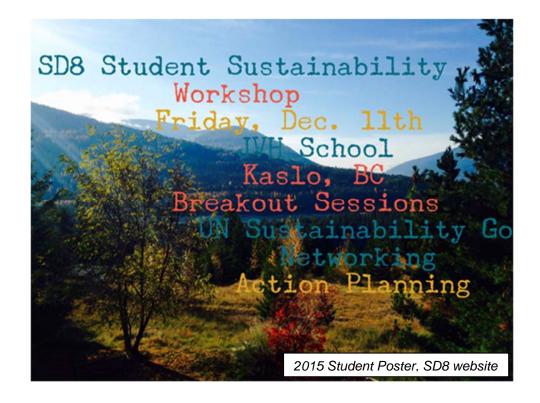
## **Executive Summary**

Kootenay Lake School District 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 though action and example. We encourage a culture of responsible stewardship and are delighted by initiative 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 becoming carbon neutral.

Jeff Jones Superintendent May 30, 2016



### 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.



#### **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.

#### 2015 Emissions and Offsets

For the 2015 calendar year, offset emissions are 1907 tonnes of CO<sub>2</sub>e. Carbon offsets are currently priced at \$25 per tonne of CO<sub>2</sub>e. The 2015 offset expenditure is \$47,675.

School District 08 - Kootenay Lake						
Data Source: SMARTTool Reports						
Calendar Year	2010	2011	2012	2013	2014	2015
Scope 1 (Direct Emissions)						
Mobile Combustion (Fleet) - measured in litres	313,383	377,308	392,901	389,326	330,099	387,163
Mobile Combustion (Fleet) tonnes CO2e	835	1,001	1,043	1,032	881	1,036
Stationary Combustion, Reported measured in GJ	32,103	38,581	32,880	36,521	37,349	32,372
Stationary Combustion Reported, tonnes CO2e	1,641	1,957	1,670	1,868	1,907	1,659
Scope 2 (Indirect Emissions)						
Purchased Energy, Reported measured in GJ	21,161	12,418	19,774	20,138	20,568	19,347
Purchased Energy, Reported tonnes CO2e	95	27	136	81	58	54
Scope 3 (Business Travel and Office Paper) Emissions						
Office Paper measured in packages	12,103	12,868	9,011	10,812	12,975	11,010
Office Paper tonnes CO2e	82	89	58	70	84	69
Total Emissions, Calendar Year (tonnes CO2e)	2,653	3,073	2,907	3,051	2,929	2,818
Carbon Neutral or Offset Exempt	747	884	907	898	765	911
Offset Adjustments	0	-1	-1	-1		
Total for Offsets	1,906	2,190	2,002	2,154	2,164	1,907
Offset Investment at \$25/tonne CO2e	\$47,570	\$48,825	\$49,150	\$53,550	\$54,100	\$47,675

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.

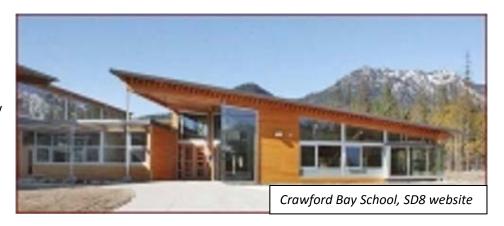
2015 School Boiler Project	projected tonnes GHG saved starting in 2016
WE Graham Community	26
Hume Elementary	36
LV Rogers Secondary	84
Total	146

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.



#### **Emissions Reductions Activities 2015**

In 2015 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.

### Actions to Reduce "Out of Scope" GHG Emissions in 2015

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 2015

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 (RDCK, 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.)



### **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 committee has 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.

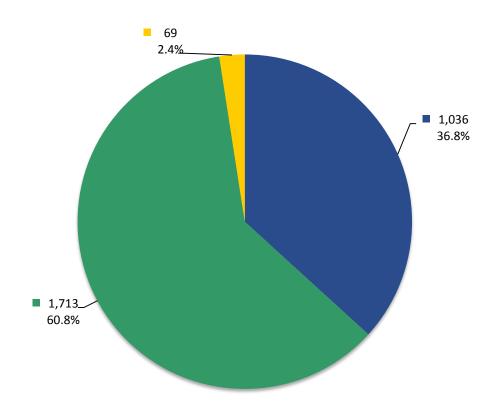
□ Review and share energy consumption data; this enables schools of similar sizes to both
compare with each other and monitor past energy performance; encourage healthy
competition among schools.
□ Note achievements in energy reductions based on monthly utility bills.
□ Track annual energy consumption per building to see where efficiencies can be made
and to note anomalies.

	□ 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
Act/Plan	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).
	□ 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
Lead	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.
	□ Familiarize our District with the Carbon Neutral Government Regulations and
	Greenhouse Reduction Targets Act.
Promote	□ 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.
	□ 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.
Staff	□ 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.
	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.
School Community	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 Café
	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.
	Complete sustainability audits on facilities to assess and understand building
	performance.
	Continue to improve our buildings through maintenance and upgrades to be more
Facilities	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 b	oreaks).
	Upgrade	e DDC (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.
	Conside	er the benefits of biomass heating to reduce use of propane.
	Continu	e to plan for water conservation and replace fixtures with low water use models;
Water	i.e., tap	aerators, low flush toilets, automatic turn off fixtures.
vvator	As hot v	vater tanks are retired, install instantaneous type heaters.
	Monitor	water consumption of the facilities that are on water meters.
	Install m	nulti-compartment trash cans (for recyclables, compost and trash).
	Impleme	ent a hazardous waste reduction and disposal strategy for electronics including
Waste	compute	er 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.
	Continu	e renewal of fleet to more efficient or low carbon/ electric vehicles.
	Conside	er the low impact of electric vehicles (EV) and support installation of EV charging
	infrastru	ucture on or near school sites.
	Review	vehicle fuel consumption data and comparisons with operators to promote
Transportation	understa	anding of fuel efficient operations
	Encoura	age 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.
	Inform th	ne district about the "history of paper usage".
	ា Monitor រុ	paper options and cost out recycled paper versus non-recycled/other
	fibres.	
	Review p	print management policies and practices and implement a reduced printing
Paper	policy.	
	Set defa	ult of all printers and copiers to double sided print.
	Initiate a	program to facilitate behavioural changes away from paper use.
	Further p	promote electronic means to circulate communication, memos and report
	cards.	

### School District 08 - Kootenay Lake Greenhouse Gas Emissions by Source for the 2015 Calendar Year (tCO<sub>2</sub>e\*)



#### **Total Emissions: 2,818**

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 2015 (Generated May 25, 2016 9:48 AM)

Total offsets required: 1,907. Total offset investment: \$47,675. Emissions which do not require offsets: 911 \*\*

<sup>\*</sup>Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) 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.

<sup>\*\*</sup> 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.

### 2015 Carbon Neutral Action Report Survey

2013 Carbon Neutral Action Report Survey
Organization Name:
Board of Education of School District No. 8 (Kootenay Lake)
Please select your sector:
School District
1) Stationary Sources (Buildings, Power Generators, Ext. Lighting) Fuel Combustion, Electricity use, Fugitive Emissions:
Please indicate which actions your PSO took in 2015:
Have developed an overall strategy/plan to reduce energy use in your organization's buildings inventory:
Yes
If Yes, please describe:
The maintenance department is engaged in facility improvements such as lighting improvements, building envelope maintenance with an on-going goal to reduce energy consumption.  We submit projects for consideration under the CNCP and other programs.
Undertook evaluations of building energy use:
Yes
Performed energy retrofits on existing buildings:
Yes
Built or are building new LEED Gold or other "Green" buildings:
Yes
Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from buildings:

Project.

Regular building maintenance. New Boilers in 3 schools. Purchase of 10 solar panels in the City of Nelson Community Solar Garden

Default to double-sided printing

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2) Mobile Sources (Fleet, Off-road/Portable Equipment) Fuel Combustion:
Indicate which actions your PSO took in 2015:
Have put in place an operations policy/program to support systematic reductions in fleet related emissions:
(e.g., program to convert fleet to renewable fuels)
Yes
If Yes, please describe:
Participates in NRCan driver training course for reducing fuel consumption. Reduction of vehicle idling.
Replaced existing vehicles with more fuel efficient vehicles (gas/diesel):
Yes
Replaced existing vehicles with hybrid or electric vehicles:
Took steps to drive less than previous years:
Yes
Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from fleet combustion:
Two bus routes were eliminated in 2015. Investigate an idea to allow staff to ride school buses in an effort to reduce employee commuting.
3) Supplies (Paper):
Indicate which actions your PSO took in 2015:
Have put in place an operations policy/program to facilitate a systematic reduction in paper-related emissions:
(e.g., policy to purchase 100% Recycled Content; default to double-sided printing)
Yes
If yes please describe:

Have put in place an operations policy/program to facilitate behavioural changes from paper use:
(e.g. awareness campaign to reduce paper use):
Yes
If yes, please describe:
School communications are now using electronic format such as electronic newsletters.
Used only 100% recycled paper: No
Used some recycled paper:
Yes
Used alternate source paper:
(e.g., bamboo, hemp, wheat etc.)
No

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from paper supplies:

Attempt to have paperless meetings and use technology to host remote meetings.

Use electronic dispersal of memos, report cards, etc to reduce printing.

Have investigated the use of 100% recycled paper, but at this point it is cost prohibitive.

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4) Other Sustainability Actions:
Please note that this section is optional
Business Travel
Created a low-carbon travel policy or travel reduction goal:
(low-carbon = lowest emission of greenhouse gas per kilometer per passenger)
No
Encouraged alternative travel for business:
(e.g. bicycles, public transit, walking)
Yes
Encouraged or allow telework/working from home:
Yes
Other:
SD8 now has a formal policy in place concerning telework. SD8 has a policy to carpool to board meetings and other staff meetings. We continue to encourage carpooling and promote awarenes. Electronic equipment is used for remote meetings and to reduce travel. A policy to allow staff to ride school buses is under review.
Education Awareness
Have a Green/Sustainability/Climate Action Team:
Yes
Supported green professional development:

Yes

Yes

(e.g. workshops, conferences, training)

Supported or provided education to staff about the science of climate change, conservation of water, energy and/or raw materials:

Participation in Local Governments Strategic Community Energy and Emissions Planning workshops in school communities. Developing strategies to work with the regional partners to reduce overall community energy and emissions. Participation at "Nelson Solutions Table" for guiding provincial policy on energy and emissions. Secondary students have organized green conferences and participate in sustainability practices and World Cafe open meetings. Adaptation Planning for Climate Risks Have assessed whether increased frequency of extreme weather events and/or long term changes in climate will affect your organization's infrastructure, its employees and/or its clients: No Have incorporated these anticipated changes in climate into your organization's planning and decision making: No Other: Future activities to promote sustainability in our school district may include examples such as: student ambassadors for anti-idling programs, promote active transportation in partnership with Interior Health and develop a sustainable education program in partnership with Fortis BC. Other Sustainability Actions Established a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models: Have put in place an operations policy/program to facilitate the reduction and diversion of building occupant waste stream from landfills or incineration facilities: (e.g., composting, collection of plastics, batteries) Yes Established green standards for goods that are replaced infrequently and/or may require capital funds to purchase:

(e.g., office furniture, carpeting, etc.)

No

Incorporated lifecycle costing into new construction or renovations:

Yes

Please list any other sustainability actions your organization has taken not listed above:

Many of the school sites have compost, worm composting and recycling stations. Compost is used in school community gardens.