



# **2016 CARBON NEUTRAL ACTION REPORT**

## **SCHOOL DISTRICT NO. 51 (BOUNDARY)**



## **Executive Summary**

This Carbon Neutral Action Report for the period January 1<sup>st</sup>, 2016 to December 31<sup>st</sup>, 2016 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2016 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2017 and beyond.

By June 30, 2017 School District 51's final *Carbon Neutral Action Report* will be posted to our website at [www.sd51.bc.ca](http://www.sd51.bc.ca).

School District No. 51 (Boundary) Board of Education believes that we should all be lifelong learners, and as a District we try to cultivate as well as teach a respect for our environment that will follow our students into adulthood. We believe that the District and its schools have a unique opportunity to reinforce positive environmental concepts, that will enhance the relationship between living things and their natural and built surroundings.

### **Following are some of the projects that we took part of in 2016:**

- ◆ Retrofitted boilers and decoupled domestic hot water with the installation of an on demand water heater at Boundary Central Secondary School
- ◆ Replaced 2 rooftop heat cool units with hybrid heat pump units at Christina Lake Elementary
- ◆ Added a new HRV at Christina Lake Elementary School
- ◆ Completed the dust collection systems at Boundary Central and Grand Forks Secondary Schools. This improves energy efficiency by using less energy to run and by recirculating the already warmed air back into the shops.
- ◆ Continued to run successful school recycling programs
- ◆ Put out our first Environmental Education Newsletter in October 2016

### **Goals for 2017**

In 2017, School District 51 plans to continue moving forward with energy saving upgrades with several school enhancement projects:

- replace roof top units at Boundary Central Secondary, Grand Forks Secondary, Perley Elementary and Christina Lake Elementary Schools.
- upgrade the chiller at Grand Forks Secondary
- lighting upgrades at Grand Forks Secondary
- West Boundary Elementary building envelope
- Continue doing HVAC equipment upgrades; lighting retrofits and replacements.
- insulation of windows and doors at J.A. Hutton and West Boundary Elementary
- replacement (1) of a 78 passenger diesel with a 28 passenger gasoline bus



As we are committed to being responsible environmentally, the District will continue to look for opportunities through a continuous improvement approach to energy management. Collectively these changes will continue to support us as we strive to reduce our carbon footprint in 2017.



## SUCCESS STORIES

In 2016, a District team of Educators worked together with the mission of encouraging and supporting teachers to create opportunities for outdoor, place-based learning opportunities for all students. The team grew to include representation from almost all schools across the District.

Membership includes Doug Lacey (District Leadership), Brian Foy (Four Schools), Sarah Bond (Four Schools), Jamie Stewart (Hutton), Lisa Baia (BCSS), Matt Grey (GFSS), Amanda Sjoden (WDC), Shannon Wolf (GFSS), Wanda Hecht (Aboriginal Education).



Following are some of their success stories as shared in their Environmental Education & Place-Based Learning Newsletter, published October 31, 2016, as well as a copy of their Inquiry Team—Spiral of Inquiry.

### West Boundary Elementary School “Take Me OUTSIDE Day”

Students from Kindergarten to Grade 7 spend the day exploring the Kettle River Recreation Area

The staff and students of West Boundary Elementary have spent more than the last year deeply reflecting about their connection to the land and nature in their West Boundary home. This became a major initiative after the devastating effects of the Wildfires of August 2015.

During the last school year, all students were involved in a project to explore many different visual and tactile art mediums and were taken through a number of reflective learning sequences about their connections to nature; the river, the fields, the mountains, the forests and lakes.

The culmination of this work occurred last June when they held their own art show displaying powerful student reflection and a final piece of art that represented his/her appreciative connection the land and nature.

This Fall has started with the whole school travelled out the the Kettle River Recreational Area (between Rock Creek and Westbridge) to participate in varied experiential activities to make connections of how nature can support our physical and mental well-being. Community nature enthusiasts and students of the West Kootenay Teacher Education Program from Nelson shared in with this experience.



When you turn off Highway 33 at the start of the Kettle River Campground, you are surrounded by the scorched trees of the wildfires, however as you head toward the river you cannot help but be amazed how the campground and recreation site and the surrounding forest was saved. It is in this environment, the West Boundary Elementary Community immersed itself in nature.

Submitted: Doug Lacey

## Perley Elementary Grade 6/7 Social Studies

In Social Studies, our classes have been learning about early people and archaeology. The students learned that places where people camped or where they threw out their garbage were rich sources of information about their lives. We visited 'Hobo's Triangle', an area of

Grand Forks where itinerant men camped during the Great Depression.

Close by was an area where local people threw out their garbage in the late 1960's. The students dug in various places and found a wide variety of things such as bottles, plates, railroad spikes, evidence of fires, pre-plastic era containers and cans. They had to make a hypothesis and use the internet to investigate their findings and their detective skills were impressive.

Submitted: Darren Nordman & Josh Mace



## Perley Students Spend the Day at NK'Mip

The grade four/five students at Perley had the opportunity to go to the NK'Mip Centre in Osoyoos. Students began their day with a guided, interpretive walk. The guide was very informative, and pointed out native plants and their traditional Aboriginal use. Protecting habitats and the desert environment were also discussed. On site was a replica of an Aboriginal village that students explored. Students returned to the Centre to watch a short movie in the auditorium on embracing your culture and Aboriginal beliefs.

The highlight of the day was the snake show. Information on snake habitat, safety, and protection was shared, with live snakes being brought out for students to see. We all appreciated a wonderful day of active, engaging learning.

Submitted: Wanda Garrison





## Hutton Elementary Students Visit a Sinixt Village Site in Lemon Creek

On Wednesday, October, 12<sup>th</sup> Mr. Stewart's 5/6 class was given the opportunity to visit two ancient Sinixt village sites in the Slocan Valley.

Sinixt elder Marilyn James was our host and shared some history and stories of her people.

At the first site near Lemon Creek we learned that one of the pit house sites was estimated to be about 10 000 years old. At the second site near Vallican we were invited into an actual (and very smoky) pithouse for lunch. We also observed ancient burial sites and middens.



As we hiked back to the bus we had a beautiful view of Frog Mountain which is sacred to the Sinixt people..

Submitted: Jamie Stewart

## Kids on Bikes Program at Greenwood Elementary

Kids these days are known to get an average of 8 hours of screen time per day. With the beautiful Trans Canada Trail in our backyard, we were surprised to discover that many of our students from GES had never even ridden on it with their bicycles. So began our Kids on Bikes Program.



Students, parents and members of the community have brought in their bikes and helmets to use and lend out so that we can enjoy the trail. We have been trying to make a commitment to get out at least once a week and have also incorporated our cycling into field trips such as our tour of the Greenwood Museum and courthouse. We hope to continue with the program in the Spring!!



Submitted: Dustin Stolen

# Boundary Environmental Education Inquiry Team Spiral of Inquiry



## Boundary District Environmental Education Inquiry Team

### 1. Scanning:

- Students disengaged from their natural environments
- High school policy to not have teachers take classes outside
- Rising issues of mental health concerns in all grades of our District
- Many students have not got the desire for free play in the outdoors
- District has "pockets of deeper learning experiences for students across the District
- Easy access to natural environments outside all of our schools –forests, streams, bogs, mountains, lakes, rivers, fields
- Intention place-based outside experiences are the great exception, not the norm – it is an event
- There are many individuals and organizations in the Boundary who are committed to environmental issues and sustainability

### Checking:

- Every school has a representative on the (an) environmental inquiry team (s)
- Members of the Inquiry team (s) feel comfortable using experiential place-based learning and assessment of student development in the Core Competencies connected to environmental sustainability

### 2. Focusing:

With intention, if we expose our students (at all ages) to the natural environment in meaningful ways, Will that increase the consciousness and connection to nature?

**How can we cultivate a personal and social consciousness of the environment to empower students through thoughtful action to affect positive sustainable change?**



### Taking Action:

1. Collaborating to create some driving questions based on Core-Competencies/Big Ideas/Curricular Competencies and their connection to appreciation and advocacy for the natural world.
2. Building a directory of local "enthusiasts"
3. Engage the School District 51 Trustees, senior management, school administration, and school staffs in this inquiry to support bringing it to life in all of our schools.
4. Invite enthusiasts into this inquiry process and help them understand the processes of open-ended inquiry learning
5. Build a Personal Inquiry Tool for individuals in regard to environmental sustainability

### 3. Developing a hunch:

If students(all ages) build a positive and connected relationship with their local natural environment, it is going ignite a sense of personal responsibility for environmental sustainability practices.

### 4. Learning:

1. Place-based strategies for intentional learning in the outdoors
2. Finding out who all of our local community resources are
3. Finding out where in the curriculum are the threads of environmental education
4. Developing understanding of appropriate experiences for developmental stages for students in deeper learning: Play-based to place-based to project-based to inquiry-based to learning culminating in environmental stewardship and advocacy



## ***School District No. 51 (Boundary)***

### **GHG Emissions and Offset for 2016 (tCO<sub>2</sub>e)**

#### **GHG Emissions created in Calendar Year 2016 (from SMARTTool Homepage):**

Total Emissions (tCO<sub>2</sub>e)

898

Total Offsets (tCO<sub>2</sub>e)

628

#### **Adjustments to GHG Emissions Reported in Prior Years (from SMARTTool Homepage):**

Total Emissions (tCO<sub>2</sub>e)

0

Total Offsets (tCO<sub>2</sub>e)

0

#### **Grand Total Offsets for the 2016 Reporting Year (from SMARTTool Homepage):**

*(This is the total of emissions that must be offset for Reporting Year 2016)*

Grand Total Offsets (tCO<sub>2</sub>e)

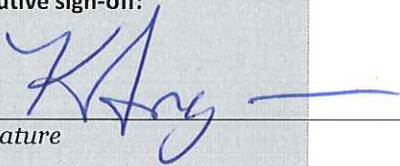
628

#### **Retirement of Offsets:**

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, *School District No. 51 (Boundary)* (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2016 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 within 30 days, 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



**Kevin Argue**

Name (please print)

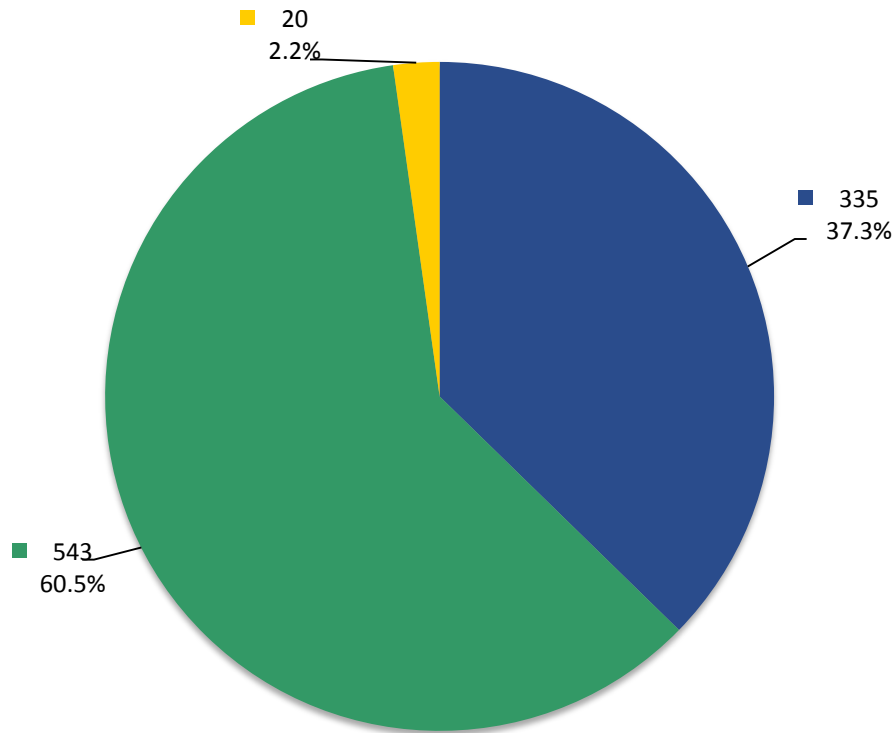
Date

May 24, 2017

**Superintendent**

Title

**School District 51 - Boundary  
Greenhouse Gas Emissions by Source  
for the 2016 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 898**

- 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 2016 (Generated May 15, 2017 4:03 PM)**

Total offsets required: **628**. Total offset investment: **\$15,700**. Emissions which do not require offsets: **270** \*\*

\*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.

\*\* 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.



# 2016 Carbon Neutral Action Report Survey

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### Part One (external)

Contact Name(s):

*Jeanette Hanlon, Secretary Treasurer; Charlene Wiebe, Executive Assistant*

Organization Name:

*School District No. 51 (Boundary)*

Please select your sector:

- School District

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

During 2016, did your organization take any of the following actions to support emissions reductions from buildings?

Select all that apply

- Performed energy retrofits of the organization's buildings.: Retrofitted Boilers and decoupled domestic hot water with the installation of an on demand water heater at Boundary Central Secondary School. We replaced 2 rooftop heat cool units with hybrid heat pump units and added an HRV at Christina Lake Elementary School.
- Other actions? Please describe briefly.: Dust collection systems completed at both high schools.

Briefly describe your organization's plans to continue reducing emissions from its stationary sources in future years.

- HVAC equipment upgrades
- Lighting retrofits and replacements.
- Insulation of windows and doors at J.A. Hutton and West Boundary Elementary
- Upgrade the chiller at Grand Forks Secondary.

During 2016, did your organization participate in utility-sponsored energy demand management program(s) (e.g. BC Hydro's Energy Management (Manager))?

*No*

If yes, please describe briefly:

*(No response)*



## 2) Mobile Sources (Vehicles, Off-road/Portable Equipment): Fuel Combustion.

During 2016, did your organization take any of the following actions to support emission reductions from its mobile sources?

Select all that apply

- 
- Replaced existing vehicles with more fuel efficient vehicles (gas/diesel).: Replaced older buses with 2 new ones.
- 

Briefly describe your organization's plans to continue reducing emissions from its mobile sources in future years.

*Will continue to replace older buses and vehicles as able.*

*Will continue to organize work orders and bus routes to be as efficient as possible.*

*We are replacing a 78 passenger diesel bus with a 28 passenger gasoline bus.*

3) Supplies (Paper):

During 2016, did your organization take any of the following actions to support emissions reductions from paper supplies?

Select all that apply

- 
- Other actions? Please describe briefly.: Reduced paper consumption
- 

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

*We will continue to monitor photocopier usage in each facility, as well as encourage schools to continue holding paperless meetings and recycling of paper sources.*

4) Other Sustainability Actions:

Business Travel:

During 2016, did your organization take any of the following actions to support emissions reductions from business travel?

Select all that apply

- 
- Encouraged alternative travel for business (e.g. bicycles, public transit, walking)
- 
- Encouraged or allowed teleworking or working from home

Education Awareness:

During 2016, did your organization have any of the following programs or initiatives to support sustainability education and awareness?

Select all that apply

- 
- Green, Sustainability or Climate Action Team
- 
- Support for professional development on sustainability (e.g. workshops, conferences, training)

Other Sustainability Actions:

During 2016, did your organization have any of the following programs or initiatives to support sustainability?

Select all that apply

*(No response)*