

## CARBON NEUTRAL ACTION REPORT

### Sea to Sky School District #48

#### Declaration

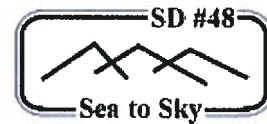
This Carbon Neutral Action Report for the period January 1<sup>st</sup>, 2018 to December 31<sup>st</sup>, 2018 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2018 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2019 and beyond.

By June 30, 2018 Sea to Sky School District #48's final Carbon Neutral Action Report will be posted to our website at <http://www.sd48.org/>.

#### 2018 Actions

In 2018, School District 48 took action to reduce GHG emissions through the following initiatives:

Location	Project
Garibaldi Highlands	<b>Full Mechanical Retrofit:</b> Replace current stand-alone furnaces with centralized heat.
Howe Sound Senior Secondary Squamish Elementary	<b>Biomass District Energy Plant:</b> The new district heating plant will use local carbon zero wood chips as fuel while providing 80% of full heating load to both facilities. Construction was completed in the fall of 2017, with commissioning ongoing. Due to the magnitude of the project, funding was awarded over two phases including contributions from Carbon Neutral Capital Planning (CNCP) and the School Enhancement Project (SEP). This project is our first "District Energy" system and is expected to reduce the <b>District's carbon by 18% or 200 tCO<sub>2</sub>e.</b>
Howe Sound Senior Secondary	<b>Boiler Replacement:</b> Replacement of end of life natural gas hot water boilers with condensing units.
Squamish Elementary	<b>Boiler Replacement:</b> Replacement of end of life natural gas hot water boilers with condensing units.
Pemberton Senior Secondary	<b>HVAC:</b> Enable variable flow of primary and secondary heat loop.
Whistler Senior Secondary	<b>HVAC:</b> Enable variable flow of primary and secondary heat loop.
Pemberton Senior Secondary and Don Ross Middle School	<b>LED Lighting Upgrade:</b> An LED lighting upgrade was performed at the two gymnasiums. The retrofit eliminated end of life fluorescent tubes with LED high bays controlled by occupancy. Additional dimming capabilities are also present to increase occupancy comfort by adjusting light levels to the desired setting.
Myrtle Philip Community School	<b>LED Lighting Upgrade:</b> Existing outdoor and gymnasium lighting was replaced with energy saving LED products.

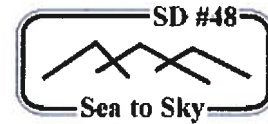


## 2019 Planning

School District 48 has an ongoing contract for energy management services with Rede Energy Solutions. Rede is an integral part of the school district's facilities and operations team. Responsible for establishing and implementing the overall energy management strategy for the school district, Rede works with facilities leadership and staff to set energy and GHG emissions reduction targets, identify improvement opportunities, conduct building energy studies, secure grants and incentive funding, and oversee the implementation of improvement projects. Energy savings and GHG emissions reductions are evaluated annually and new targets are set annually.

The following projects are approved/considered for 2019 and beyond:

Location	Project
Don Ross Middle School - <b>APPROVED</b>	<b>Bio Mass Fuel Switching:</b> Phase I of the addition of a bio-mass heating plant. Total savings estimated at <b>113 tCO<sub>2</sub>e</b> .
Don Ross Middle School – <b>APPROVED</b>	<b>Boiler Replacement:</b> End of life natural gas boiler replacement.
Pemberton Senior Secondary	<b>GeoExchange Fuel Switching:</b> Full mechanical retrofit including ground source GeoExchange. Reduce GHG by <b>119 tCO<sub>2</sub>e</b> .
Signal Hill Elementary	<b>Boiler Replacement:</b> Replacement of end of life propane hot water boilers with condensing units. Re-piping of current configuration to increase use of existing GeoExchange ground source system. Reduce GHG by <b>40 tCO<sub>2</sub>e</b> .
Valleycliffe Elementary	<b>Envelope Upgrade:</b> Window Replacement
Squamish Elementary	<b>Envelope Upgrade:</b> Window Replacement



## Emissions and Offset Summary


GHG Emissions and Offsets for 2018 (tCO2e)	
GHG Emissions created in Calendar Year 2018:	
Total Emissions (tCO2e)	1,908
Total Offsets (tCO2e)	1,493
Adjustments to GHG Emissions Reported in Prior Year (2017):	
Total Emissions (tCO2e)	453
Total Offsets (tCO2e)	446
Grand Total Offsets for the 2018 Reporting Year:	
<b>Total Offsets (tCO2e)</b>	<b>1,939</b>

### Retirement of Offsets

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, **Sea to Sky School District #48** 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 within 30 days, the associated invoice to be issued by the Ministry in an amount equal to \$35 per tonne of offsets retired on its behalf plus GST.

### Executive Sign-off

Signature

  
Lisa McCullough  
Name (Please print)

Date

May 31, 2019  
Superintendent of Schools  
Title

# Part 1: CNAR Survey

## 1. General Information

**Name:** Ian Currie

**Contact Email:** icurrie@sd48.bc.ca

**Organization Name:** School District 48 (Sea to Sky)

**Sector:** School District

**Role** - Please select your role(s) below.

*If more than one individual completed the survey, multiple categories may be selected:*

Energy Manager: No

Sustainability Coordinator: No

Administrative Assistant: No

Facilities/Operations Manager/Coordinator: Yes

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

### A. Stationary Sources (e.g. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

#### 1. Actions taken by your organization in 2018 to support emissions reductions from buildings.

##### a) Do you have a strategy to reduce emissions from stationary sources?

Yes

If yes above, what are the main goals?: Our main goals are to reduce fuel consumption while sustaining occupancy comfort.

##### b) Whether you have a strategy or not (1.a), briefly describe your organization's plans to continue reducing emissions from stationary sources:

###### I. Over the medium-term term (1-5 years)

The big picture plan, originating in 2010, was based on fuel switching of our biggest facilities/emitters. One district energy biomass system has been completed in the winter of 2018/2019 and the second project is to start construction this summer. The completion of these two projects will reduce our district stationary emissions by 30%.

Alongside the two large capital projects we are in the process of retrofitting aging equipment and optimizing the performance of existing systems.

**II. Over the long term (6-10 years)**

Continue to upgrade our facilities and take into account fuel switching potential. Our current climate has opened up the potential to ground source GeoExchange which would further reduce our carbon emissions alongside increasing occupancy comfort with mechanical cooling.

Studies for potential facilities meeting the above criteria have been completed and are submitted to potential funding agencies on an annual basis.

**c) Please describe your strategy's goals (if any) related to [energy audits](#).**

Having worked with an energy manager for numerous years has enabled to sustain an ongoing project list based on some site/district wide audits. Inventories of boilers/lighting/BAS are continually updated. The goal is to complete these identified projects.

I. What % on average of your building portfolio has an energy audit completed each year (if any)? : 20

**d) Please describe your strategy's goals (if any) related to building retrofits.**

Building retrofits spearhead our energy conservation strategy. Annual budget allocation to specific project categories of minor/major retrofits, such as lighting and BAS, enables projects to be completed on an annual basis. Deep retrofits are scoped and reports received to enable the application to external funding.

I. What % on average of your building portfolio is retrofitted each year in the following categories (if any) - click [here](#) for further information:

Minor retrofits (e.g., low cost, easy to implement measures including caulking, lighting, adding roof insulation, etc.) (%): 25

Major retrofits (e.g., replacing windows and doors, equipment replacement such as boilers, etc.) (%): 10

Deep retrofits (e.g., replacing roof, replacing the heating, ventilation and air-conditioning system with a renewable technology like a ground-source heat pump, etc.) (%): 10

**e) Please describe your strategy's [re/retro-commissioning](#) goals (if any)?**

All of our facilities are equipped with above average building automation. Our four largest facilities had undergone BC Hydro sponsored recommissioning projects in the past few years.

Our staff alongside our BAS provider and energy manager are continually improving system performance.

I. What % on average of your building portfolio do you recommission each year? : 20

**f) Do you keep records of Refrigerant gases category and refilling volumes?**

No

**g) How many newly constructed buildings received at least LEED Gold certification in 2018 : 0**

I. How many newly constructed buildings did not receive LEED Gold certification? : 0

**B. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:****3. Actions taken by your organization in 2018 to support emissions reductions from mobile sources.****a) Do you have a strategy to reduce emissions from mobile sources?**

Yes

I. If yes, what are its goals?

Replace existing vehicles and equipment with more fuel efficient vehicles and equipment. (gas & diesel)

**b) Whether you have a strategy or not (3.a), briefly describe your organization's plans to continue reducing emissions from mobile sources:**

I. Over the medium-term term (1-5 years)

Purchase more fuel efficient replacement vehicles and equipment  
Encourage less driving/limit unnecessary trips  
Enforce Anti-idling Policy  
Continue to provide driver training for bus drivers to reduce fuel use  
Purchase electric and alternate fuel vehicles  
Continue our fleet preventative maintenance program to improve fuel efficiency

II. Over the long term (6-10 years)

As above

**c) How many fleet vehicles did you purchase from the following categories:**

Gas/diesel vehicle: 1

I. If you purchased new gas/diesel vehicles, can you briefly explain why vehicles from the other categories were not chosen?

Enclosed riding commercial mower/snow blower not readily available and limited budget.

**d) How many existing EV charging stations does your organization have in each category:**

level 2: 0

level 3: 0

How many level 2 stations (if any) are specifically for your fleet vehicles: 0

How many level 3 stations (if any) are specifically for your fleet vehicles: 0

**e) How many EV charging station(s) did you install in 2018 in each category:**

level 2: 0

level 3: 0

How many level 2 stations (if any) were installed specifically for your fleet vehicles: 0

How many level 3 stations (if any) were installed specifically for your fleet vehicles: 0

**f) Other actions, please describe briefly (e.g. charging station feasibility studies, electrical panel upgrades, etc.)**

None

**4. Please indicate the number of the vehicles in the following vehicle classes that are in your current fleet (including any purchased in 2018):**

Definitions:

- Light duty vehicles (LDVs) are designated primarily for transport of passengers <13 and GVWR<3900kg
- Light duty trucks (LDTs) are designated primarily for transport of light-weight cargo or that are equipped with special features such as four-wheel drive for off-road operation (include SUVs, vans, trucks with a GVWR<3,900kg )
- Heavy duty vehicles (HDV) includes vehicles with a GVWR>3,900 kg (e.g. ¾ tonne pick-up truck, transport trucks)

**a) Light duty vehicles (LDVs)**

Electric Vehicles – EV - (e.g., Nissan Leaf, Chevy Bolt): 0

“Plug In” Electric Vehicle – PHEV -- (e.g., plug-in Prius, Chevy Volt) : 0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Toyota Prius, Toyota Camry hybrid): 0

Hydrogen fuel cell vehicles: 0

Natural gas/propane: 0

Gas/diesel: 1

**b) Light duty trucks (LDTs)**

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV: 0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Ford Escape Hybrid, older Chevrolet Silverado pickup hybrid etc): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 0

Gas/diesel: 17

**c) Heavy duty vehicles (HDV)**

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV : 0

Hybrid vehicles – HEV – (e.g., non “Plug In”): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 0

Gas/diesel: 33

**5. Please indicate the number of the vehicles you plan to replace in your fleet:**

How much do you budget per LDV?: 30000

How many LDVs do you plan to procure annually over the next 5 years?: 1

How much do you budget per LDT?: 80000

How many LDTs do you plan to replace annually over the next 5 years?: 2

How much do you plan to spend per HDV?: 145000

How many HDVs do you plan to replace annually over the next 5 years?: 2

## C. Office Paper: Indicate which actions your PSO took in 2018:

### 6. Actions taken by your organization in 2018 to support emissions reductions from paper supplies.

#### a) Do you have an Office Paper strategy?

Yes

##### I. If yes, what are its goals?

Have an awareness campaign focused on reducing office paper use

#### b) Whether you have a strategy or not (6.a), briefly describe your organization's plans to continue reducing emissions from paper use:

##### I. Over the medium-term (1-5 years)

continue to encourage paperless meetings and presentations  
continue to expand the use of collaborative software (eg. Google Docs)  
continue to encourage double sided printing when printing can't be avoided  
discourage colour printing

##### II. Over the long term (6-10 years)

as above

#### c) Have an awareness campaign focused on reducing office paper use

Yes

#### d) Purchased alternate source paper (bamboo, hemp, wheat, etc.)

No

#### e) Other actions, please specify.

none