

## CARBON NEUTRAL ACTION REPORT

### Sea to Sky School District #48

#### Declaration

This Carbon Neutral Action Report for the period January 1<sup>st</sup>, 2019 to December 31<sup>st</sup>, 2019 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2019 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2020 and beyond.

By June 30, 2020 Sea to Sky School District #48's final Carbon Neutral Action Report will be posted to our website at <http://www.sd48.org/>.

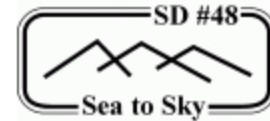
#### 2019 Actions

In 2019, School District 48 took action to reduce GHG emissions through the following initiatives:

Location	Project
Don Ross Middle School	<b>Boiler Replacement:</b> Replacement of end of life natural gas hot water boilers with condensing units. Total savings estimated at <b>20 tCO<sub>2</sub>e</b> .
Don Ross Middle School	<b>Bio Mass Fuel Switching:</b> Addition of a bio-mass heating plant. The plant is designed to provide base load and up to 80% of the facility's peak. Total savings estimated at <b>113 tCO<sub>2</sub>e</b> .
Howe Sound Senior Secondary	<b>LED Lighting Upgrade:</b> An LED lighting upgrade was performed for half of the facility's hallways. The retrofit eliminated end of life fluorescent tubes with LED panels controlled by occupancy. Additional dimming capabilities are also present to increase occupancy comfort by adjusting light levels to the desired setting.
Don Ross Middle School	<b>LED Lighting Upgrade:</b> An LED lighting upgrade was performed for half of the facility's hallways. The retrofit eliminated end of life fluorescent tubes with LED panels controlled by occupancy. Additional dimming capabilities are also present to increase occupancy comfort by adjusting light levels to the desired setting.
Garibaldi Highlands	<b>Full Envelope Upgrade:</b> Upgrade full envelope.

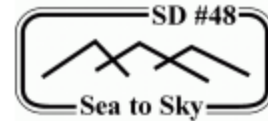
#### 2020 Planning

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 2020 and beyond:

Location	Project
Don Ross Middle School - <b>APPROVED</b>	<b>HVAC Phase I</b> – Replace nine (9) Unit Ventilators and thirteen (13) Water Source Heat Pumps with high-efficiency units including full digital control. Upgrade make up air hot water heat coils to low temperature enabling reduced hot water temperature. Reduce GHG by <b>7 tCO<sub>2</sub>e</b> .
Spring Creek Elementary – <b>APPROVED</b>	<b>Boiler Replacement:</b> End of life natural gas boiler replacement with condensing units. Reduce GHG by <b>25 tCO<sub>2</sub>e</b> .
Don Ross Middle School - <b>APPROVED</b>	<b>LED Lighting Upgrade:</b> Retrofit to eliminate all remaining fluorescent hallway fixtures with LED panels enabling dimming based on occupancy. Reduce GHG by <b>0.5 tCO<sub>2</sub>e</b>
Howe Sound Senior Secondary - <b>APPROVED</b>	<b>LED Lighting Upgrade:</b> Retrofit to eliminate all remaining fluorescent hallway fixtures with LED panels enabling dimming based on occupancy. Reduce GHG by <b>0.5 tCO<sub>2</sub>e</b>
Myrtle Phillip Elementary and Community - <b>APPROVED</b>	<b>Building Automation</b> – Enable occupancy-based control for community wing including optimizing boiler performance. Reduce GHG by <b>10 tCO<sub>2</sub>e</b> .
Don Ross Middle School	<b>HVAC Phase II</b> – Replace twenty (20) Water Source Heat Pumps with high-efficiency units. Reduce GHG by <b>5 tCO<sub>2</sub>e</b> .
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

As per directive on March 31st by Neil Dobson, Executive Director, Clean BC Implementation Climate Action Secretariat, 2018 Calendar data was used for 2019 reporting due to delays caused by the Covid-19 pandemic. 2019 REPORTING WILL BE UPDATED FALL 2020.

GHG Emissions and Offsets for 2018 (tCO <sub>2</sub> e)	
GHG Emissions created in Calendar Year 2018:	
Total Emissions (tCO <sub>2</sub> e)	1,908
Total Offsets (tCO <sub>2</sub> e)	1,493
Adjustments to GHG Emissions Reported in Prior Year (2017):	
Total Emissions (tCO <sub>2</sub> e)	453
Total Offsets (tCO <sub>2</sub> e)	446
Grand Total Offsets for the 2018 Reporting Year:	
<b>Total Offsets (tCO<sub>2</sub>e)</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 2019 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)

5/29/20

Date

Superintendent of Schools

Title

**Confirmation number:** 00C7BC23

**Submitted date:** 2020-07-15 15:55:12 Pacific Daylight Time

# Carbon Neutral Action Report Survey - 2019

Public sector organizations (PSOs) are required to complete this survey, in addition to a Carbon Neutral Action Report (CNAR) as mandated by BC's [Climate Change Accountability Act](#) and the [Carbon Neutral Government Regulation](#).

Due to the COVID-19 pandemic, the following [Directive](#) was issued on March 31, 2020. Certain deadlines were also extended for the 2019 reporting year (see below).

## **March 31, 2020 Directive:**

*Under my authority as the Director for the purposes of the Act, and under the authority delegated to me in Section 6 of the Carbon Neutral Government Regulation, I hereby direct that all ministries and Public Sector Organizations covered by the Carbon Neutral Government requirement shall use their 2018 GHG emissions as a temporary estimate for their actual 2019 GHG emissions, for the purposes of the 2019 Carbon Neutral Action Reports and 2019 Carbon Neutral Government reporting required under the Climate Change Accountability Act.*

Neil Dobson, Executive Director, Clean BC Implementation  
Climate Action Secretariat

Although 2018 emissions data will be used as a placeholder for 2019, **all other (qualitative) components of the CNAR and CNAR Survey are to be completed with information from 2019 (e.g., actions taken or planned to reduce emissions)**. The only change to the survey is that the deadline was extended by one month to June 30, 2020.

This survey is divided into two parts:

**Part 1** - Will be made public on the Climate Action Secretariat (CAS) [website](#) after June 30, 2020; however, it will not be appended directly to each individual PSO CNAR as was done in previous years. This section collects details about actions taken or planned to reduce emissions and is intended to supplement the legislative requirements in your CNAR.

**Part 2** - Will NOT be made public. Information you provide in this section is important and will be used internally to help CAS staff with planning for emissions reduction and climate change adaptation initiatives. Although not required, PSOs are highly encouraged to complete Part 2.

**Note:** Survey progress can be saved at any time by clicking the "Save and continue later" button at the bottom of each page. A new window will open and you will be asked to provide your name and email. An email will be sent to you from [Carbon.Neutral@gov.bc.ca](mailto:Carbon.Neutral@gov.bc.ca) with the subject line: "Questionnaire Link", which will include a hyperlink for the "Project: Carbon Neutral Action Report Survey – Broader Public Sector 2019". You can then continue responding at another time or email the hyperlink to a colleague to complete remaining section(s).

May 29, 2020	<ul style="list-style-type: none"><li>The final, signed version of the <b>CNAR</b> (or Small Emitters Form) must be submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a></li></ul>
June 30, 2020*	<ul style="list-style-type: none"><li>Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG <a href="#">website</a> and each PSO is encouraged to post the report on their website.</li><li>The <b>CNAR Survey</b> (optional for Small Emitters) must be completed and submitted online. *Deadline extended from May 29, 2020.</li><li><u>All offset invoice payments must be submitted to CAS.</u></li></ul>
Sept 30, 2020*	<ul style="list-style-type: none"><li><b>Clean Government Reporting Tool (CGRT) Data Entry</b> must be completed for the 2019 reporting year.</li></ul>

	*Deadline extended from April 30, 2020.
Oct 15, 2020*	<ul style="list-style-type: none"> <li>• <b>Self-Certification checklist</b> must be completed, signed and submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a>.</li> </ul> *Deadline extended from May 15, 2020.

\*See the [Carbon Neutral Government – Program Requirements website](#) for more information on program requirements, timelines and templates.

## PART 1 - Included as part of your public CNAR report.

Reminder that Part 1 will be made public on the CAS [website](#).

<b>Contact Name:</b>	<i>Ian Currie</i>
<b>Contact Email:</b>	<i>icurrie@sd48.bc.ca</i>
<b>Organization Name:</b>	<i>School District No. 48 (Sea to Sky)</i>
<b>Role – Please select the best category for your current role with your organization. If more than one individual completed the survey, multiple categories may be selected:</b>	Facilities/Operations Manager/Coordinator
<b>Please select your sector:</b>	School District (SD)

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

Actions taken by your organization in 2019 to support emissions reductions from buildings

<b>Do you have a strategy to reduce emissions from stationary sources?</b>	Yes
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Whether you have a strategy or not, briefly describe your organization's plans to continue reducing emissions from stationary sources:

<b>Over the medium-term term (1-5 years)</b>	<i>We have an updated (2020) SEMP, which we continue to follow.</i>
<b>Over the long term (6-10 years)</b>	<i>Following SEMP as described above.</i>
<b>Please describe your strategy's goals (if any) related to energy audits.</b>	<i>Please see our Districts SEMP.</i>

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

*Continuous/ongoing energy audits in real time throughout the year.*

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

*Please see attached SEMP.*

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

*Again, please see SEMP for percentage. We undertake a number of medium and major retrofits each year. Since 2015 our District has undertaken several major atmospheric boiler to condensing replacements.*

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

*HVAC Controls/Optimization is ongoing in our District. We continue with window replacement and lighting annually of about \$150,000 investment.*

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

*Please see above. SD 48 has installed two biomass boiler systems as alternate fuel systems for space heating in our schools. We've also undertake and continue to replace atmospheric boilers in our schools with condensing units.*

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.)

*Question is redundant. Please see above.*

Please describe your strategy's re/retro-commissioning goals (if any)?

*Please see SEMP.*

What % on average of your building portfolio do you recommission each year?

14%

Do you keep records of Refrigerant gases<sup>1</sup> category and refilling volumes?

[1] Fugitive emissions from stationary cooling equipment are attributed to the leakage and loss of HFC and PFC based coolants from air conditioning and commercial type refrigeration systems. Coolant loss can occur during the manufacturing, operation, and disposal of such equipment. Gases that may be reported via CGRT include HFC R-134, HFC R-134a, HFC R-404a, HFC R-407c, HFC R-410a.

No

What, if any, mitigation approaches have been considered? Please describe.

*No special refrigeration equipment in our district.*

How many newly constructed buildings received at least LEED Gold certification in 2019?

N/A

How many newly constructed buildings did not receive LEED Gold certification?

N/A

Please explain why LEED Gold certification was not obtained for those new buildings.

N/A

Other actions? Please describe briefly:

N/A

## Mobile Sources (Fleet Vehicles, Off-road/portable Equipment): Fuel Combustion:

Actions taken by your organization in 2019 to support emissions reductions from mobile sources?

Do you have a strategy to reduce emissions from mobile sources?

Yes

Whether you have a strategy or not, briefly describe your organization's plans to continue reducing emissions from mobile sources:

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

*Fuel switching from diesel to propane or electrifying our fleet.*

Over the long term (6-10 years)

*See above.*

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

Electric Vehicle – EV - (e.g., Nissan Leaf, Chevy Bolt)

0

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

0

Hybrid vehicle – HEV – non “Plug In”- (e.g., Toyota Highlander Hybrid)

0

Hydrogen fuel cell vehicle

0

Natural gas/propane

0

Gas/diesel vehicle

6

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

*We explored alternative fuel vehicles (propane and electric) and cost and capacity were issues. Propane bus alternatives didn't meet our current rider (capacity) requirements. Only 76 passenger units were available this year, but we require 84 passenger buses.*

*Electric buses require significant and expensive infrastructure (charging) system upgrades. Additionally, the cost of the electric school bus is currently over double to the cost of an available diesel bus.*

*White fleet fuel alternatives fuel vehicles we will explore more thoroughly this year.*

## Actions taken by your organization in 2019 to support emissions reductions from mobile sources? (Continued)

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?

As defined as Level 2 stations only your organization's fleet vehicles may use

0

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

As defined as Level 3 stations only your organization's fleet vehicles may use

0

How many EV charging station(s) did you install in 2019 in each category:

Level 2?

0

Level 3?

0

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

As defined in the previous section

0

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

As defined in the previous section

0

Please briefly describe any other related actions, (e.g. charging station feasibility studies, electrical panel upgrades, etc.)

*Our district will undertake an electric bus feasibility study in the next two to five years.*

Please indicate the total number of the vehicles in the following vehicle classes that are in your current fleet



**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)

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
2

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
21

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

30

Actions taken by your organization in 2019 to support emissions reductions from paper supplies.

Briefly describe your organization’s plans to continue reducing emissions from paper use:

Over the medium-term (1-5 years)

*continue to encourage paperless meetings and presentations  
continue to expand the use of collaborative software  
continue to utilise electronic document libraries  
continue to encourage double sided printing  
discourage colour printing*

Over the long term (6-10 years)

*continue to encourage paperless meetings and presentations  
continue to expand the use of collaborative software  
continue to utilise electronic document libraries  
continue to encourage double sided printing  
discourage colour printing*

Do you have an awareness campaign focused on reducing office paper use?

Yes

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

No

Other 2019 actions, please specify

*continue to encourage paperless meetings and presentations  
continue to expand the use of collaborative software  
continue to utilise electronic document libraries  
continue to encourage double sided printing  
discourage colour printing*