



2019 CARBON NEUTRAL ACTION REPORT

MAPLE RIDGE - PITT MEADOWS SCHOOL DISTRICT NO.42

EXECUTIVE SUMMARY



This Carbon Neutral Action Report for the period January 1, 2019 to December 31, 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, the final Carbon Neutral Action Report for Maple Ridge - Pitt Meadows School District No. 42 will be posted to the district website at www.sd42.ca/sustainability.

On March 25, 2015, the Maple Ridge - Pitt Meadows Board of Education approved the *Energy Management Plan*. This plan includes the implementation of lighting as well as heating, ventilation and air-conditioning (HVAC) upgrade opportunities in all 34 school district facilities. The associated greenhouse gas emission reduction resulting from this plan are 758 tonnes of CO₂ emissions.

Through implementing these projects, establishing supporting administrative regulations and creating behaviour change initiatives through outreach and education, this plan will continue to serve as a framework for achieving ongoing improvement of energy performance in support of long-term energy and cost reduction goals.

A handwritten signature in blue ink that reads 'Sylvia Russell'.

Sylvia Russell, Superintendent of Schools
May 13, 2020



2019 GREENHOUSE GAS EMISSIONS

In an effort to support organizations through the COVID-19 pandemic, the Ministry of Environment issued a Directive on March 31, 2020, that enabled each public sector organization (PSO) to use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 Carbon Neutral Report.

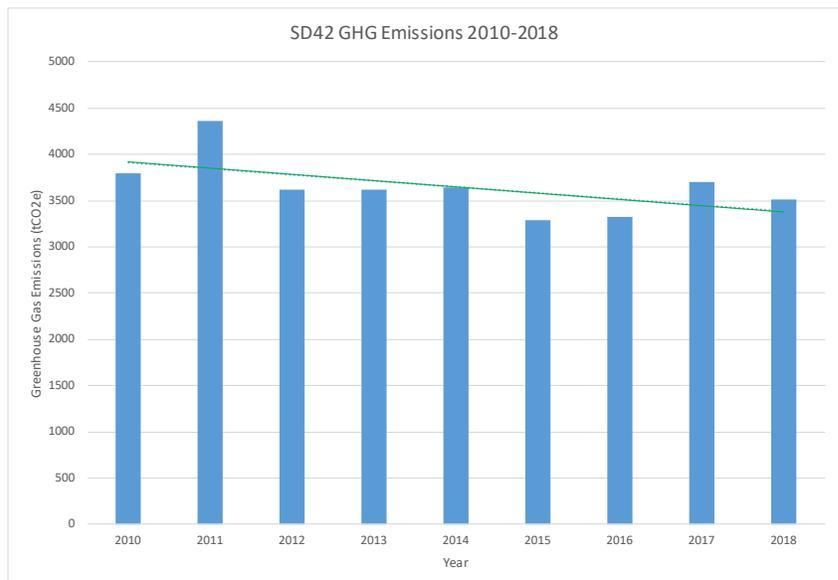
SCHOOL DISTRICT NO. 42 GHG EMISSIONS AND OFFSETS FOR 2018 (TCO2E)	
GHG Emissions Created in Calendar Year 2018	
TOTAL EMISSIONS	3,374.2
TOTAL BICO ₂	5.57
TOTAL OFFSETS	3,379.77
Offset Investment (\$25 per tCO ₂ e)	
TOTAL	\$84,494.25

RETIREMENT OF OFFSETS:

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Maple Ridge - Pitt Meadows School District (SD42) (the Organization) 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 (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (the Ministry) 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.

EMISSIONS TRENDS

Since 2010, the Maple Ridge - Pitt Meadows School District has seen a 8% reduction in emissions. 2019 actual emissions will be released in September 2020.





ENERGY CHALLENGE: ACTION ON SUSTAINABILITY

SD42's fourth annual Energy Challenge inspired and empowered teachers and students to think about sustainability and energy savings in their schools. In 2019, 15 schools signed up for the challenge and 10 schools participated by completing over 424 energy-saving activities in the month of February. Schools shared their activities via social media with over 82 posts. SD42 saved 43,624 kWh of electricity & 169 GJ of natural gas in the month of February.

The winner of the 2019 Energy Challenge is Alexander Robinson Elementary. Energy Challenge 2019 highlights include: beautiful sustainability pledge trees, art projects using upcycled materials, Glove Your Neighbourhood recycle clothing drive, Instagram photo contests, Energy Tip video series featuring Imperial Galactic Stormtrooper called TC-1588, garden reclamation projects, lights out lunches, building a piezoelectric floor and even a dramatic re-enactment of the Exxon Valdez spill.

Adam Stanley, Principal, Alexander Robinson Elementary said about the 2019 Challenge: "We want the Energy Challenge to exist not as an event in February, but rather as a catalyst for a discussion and mindset that will last all year."



IN THE NEWS

MAY 7, 2019

ENERGY CHALLENGE EDUCATES AND EMPOWERS STUDENTS

Maple Ridge – Pitt Meadows School District No. 42 students and staff were up to the challenge. During the month of February, 10 schools participated in the fourth annual SD42 Energy Challenge and completed over 424 energy-saving activities. This year’s highlights included sustainability pledge trees, art projects using upcycled materials, recycled clothing drives, social media contests, energy tip videos, garden reclamation projects, lights out lunches, and much more.



APRIL 25, 2019

GSS CELEBRATES EARTH DAY

Garibaldi secondary students participated in fun, environmentally focused activities last week to celebrate Earth Day. The Garibaldi Green Group organized the April 16 event, which included rock painting, planting seeds, a plant sale, face-painting and temporary tattoos, snacks, board games and screening of the enviro-themed movie *Over the Hedge*. “It was a successful event,” said teacher Moein Ferdosian, who sponsors the Green Group along with teacher Helen Carelse. “The Green Team organizes activities to educate and encourage staff and students to make greener choices.”



FEBRUARY 7, 2019

GLENWOOD ELEMENTARY WINS SD42 HOLIDAY SHUTDOWN

Before staff at Glenwood Elementary left for winter break, they made sure to switch off lights, unplug appliances and turn down the heat. In total, they turned off or shut down 285 items, which earned the school energy cost savings over the holidays.



JANUARY 31, 2019

STUDENT LEADERS READY TO TAKE ACTION ON SUSTAINABILITY

Elementary and secondary Student Voice leaders from across the Maple Ridge – Pitt Meadows School District are ready to be the change. Last week the students attended an event hosted at Westview Secondary that included a keynote presentation by Maureen Jack-LaCroix of Be the Change Earth Alliance.





Pictured above from left to right: Tammy Lumbis, Jennifer Fitzpatrick and Jennifer Beveridge.

HOLIDAY SHUTDOWN: TEACHERS AND STUDENTS SAVE ENERGY OVER WINTER BREAK

With the valuable support of the Environmental Sustainability Committee, the second annual holiday shutdown campaign at SD42 was a success. Staff at eight schools, including over 4,000 students, staff and environmental champions participated. Through consulting with teachers and principals it was established that the key elements to ensuring high participation in this campaign were: ease of use, short time commitment and flexibility for reporting results.

“Glenwood staff were excited to work together to minimize our ecological footprint over the holidays,” said vice-principal Jennifer Beveridge. “End of day before the Christmas break we were all eagerly unplugging.”

Eight schools participated in the holiday shutdown and together, Maple Ridge – Pitt Meadows School District unplugged over 500 appliances.



PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS IN 2020

- Continuously improve and review our operational policies in an effort to reduce utility consumption.
- Boiler upgrades aimed at replacing end of life equipment and increasing energy efficiency.
- Heating, ventilation and air-conditioning (HVAC) upgrade opportunities in school district facilities: direct digital control (DDC) upgrades, scheduling and security integration, occupancy sensor controls, heating plant optimization and supply air pressure (SAP) reset.
- Proactively deliver regular energy intensity reports to departmental personnel for use in raising general awareness and examining variances from established targets. Prepare energy conservation initiatives to ensure students and staff have an active role in reducing our energy consumption.
- Improve communication of the energy conservation initiative to the broader organization to raise energy awareness.
- Continue meeting with and expanding the staff Environmental Sustainability Committee.



2019 CARBON NEUTRAL ACTION REPORT

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MAPLE RIDGE, BC
V2X 8N6

Confirmation number: 00C4DCA8

Submitted date: 2020-06-29 15:24:46 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 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">The final, signed version of the CNAR (or Small Emitters Form) must be submitted by email to: Carbon.Neutral@gov.bc.ca
June 30, 2020*	<ul style="list-style-type: none">Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG website and each PSO is encouraged to post the report on their website.The CNAR Survey (optional for Small Emitters) must be completed and submitted online. *Deadline extended from May 29, 2020.<u>All offset invoice payments must be submitted to CAS.</u>
Sept 30, 2020*	<ul style="list-style-type: none">Clean Government Reporting Tool (CGRT) Data Entry must be completed for the 2019 reporting year.

	*Deadline extended from April 30, 2020.
Oct 15, 2020*	<ul style="list-style-type: none"> • Self-Certification checklist must be completed, signed and submitted by email to: Carbon.Neutral@gov.bc.ca. *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](#).

Contact Name:	<i>Derek Oppedisano</i>
Contact Email:	<i>derek_oppedisano@sd42.ca</i>
Organization Name:	<i>School District 42 - Maple Ridge Pit Meadows</i>
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:	<i>Energy Manager</i>
Please select your sector:	<i>School District (SD)</i>

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

Do you have a strategy to reduce emissions from stationary sources?	<i>No</i>
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Whether you have a strategy or not, briefly describe your organization's plans to continue reducing emissions from stationary sources:

Over the medium-term term (1-5 years)	<i>Upgrade boilers to condensing boilers to improve efficiency Upgrade where possible to electric boilers/heat pumps to provide cooling and heating without the need for Natural Gas Implement Fleet improvements once fleet has reached their operational life time Continually monitor and optimize existing infrastructure to maximize operating efficiency Reduce paper consumption through monitoring and double sided printing</i>
Over the long term (6-10 years)	<i>Create long term metrics to define success in GHG reductions Define what schools need to be upgraded in order to comply with long term goals</i>

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

30%

Typically energy audits are completed in bundles and would do 10 at a time based on energy use intensities and expected potential savings

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

There are currently no specific goals related to building retrofits.

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

10%

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.)

1%

(once every 3-5 years)

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

No specific goals have been identified. The expectation is to target the worst performing schools every year with the intention of having the highest impact on GHG reduction per recommissioning.

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

15%

Do you keep records of Refrigerant gases¹ 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.

None.

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

None.

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

None.

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

No new buildings were built in 2019

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?

No

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)

Ensure new fleet vehicles have the lowest operating cost possible over the life time of the vehicles, meaning the lowest gas costs possible.

Over the long term (6-10 years)

potentially introducing electric vehicle fleets for the maintenance and facilities team.

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

32

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

Did not purchase them.

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.)

None.

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

0

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

22

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

8

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)

*Implementations of Paper-cut in order to track paper usage and encourage double sided printing
Replace existing paper with recycled paper to reduce overall emissions factors for usage*

Over the long term (6-10 years)

Replacing existing single unit printers with larger machines to encourage less paper usage and double sided printing.

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

No

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

No