



2018 CARBON NEUTRAL ACTION REPORT

MAPLE RIDGE - PITT MEADOWS SCHOOL DISTRICT NO.42

EXECUTIVE SUMMARY



This Carbon Neutral Action Report for the period January 1, 2018 to December 31, 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, 2019, 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 implementation of all energy conservation opportunities will result in estimated annual utilities cost savings of \$0.60 million that will be re-invested in our schools. The associated greenhouse gas emission reduction resulting from this four-year 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 15, 2019



2018 GREENHOUSE GAS EMISSIONS

The Maple Ridge – Pitt Meadows School District (SD42) produced a total of 3,513 tonnes of greenhouse gas emissions from all sources as reported in SMARTTool.

SCHOOL DISTRICT NO. 42 GHG EMISSIONS AND OFFSETS FOR 2018 (TCO2E)	
GHG Emissions Created in Calendar Year 2018	
TOTAL EMISSIONS	3,380
TOTAL OFFSETS	3,374
Adjustments to GHG Emissions Reported in Prior Years	
TOTAL EMISSIONS	139
TOTAL OFFSETS	139
Grand Total Offsets for the 2018 Reporting Year	
TOTAL OFFSETS	3,513

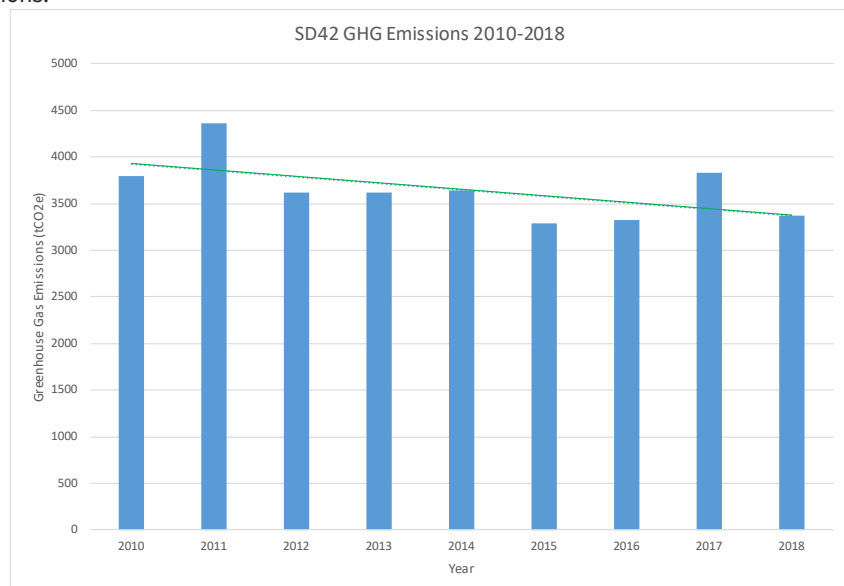
OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2018

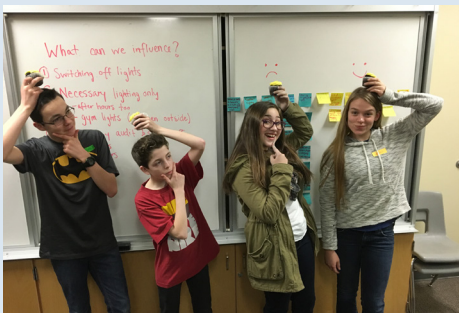
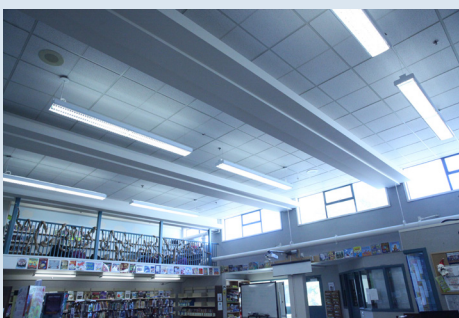
Of all the greenhouse gas emissions generated, a total of 3,513 tonnes of emissions offsets have been applied to become carbon neutral for 2018.

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, SD42 (the Organization) 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 Environmental and Climate Change Strategy 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 12% reduction in emissions.





2018 RETROFITS

In 2018 heating, ventilation and cooling (HVAC) upgrades and lighting upgrades were completed at Edith McDermott Elementary, Laity View Elementary and Pitt Meadows Elementary. Additionally, lighting upgrades were completed at Albion Elementary, Alouette Elementary, Davie Jones Elementary, Eric Langton Elementary and Maple Ridge Elementary. The reduction in greenhouse gas emissions is estimated at 51 tonnes of CO₂.

In addition to the above noted projects, the installation of 34 new rooftop heat pumps at Kanaka Creek Elementary School will result in an estimated 89% reduction in greenhouse gas emissions as compared to pre-project heating conditions; an annual reduction of 52.3 tonnes of CO₂ emissions.

SPOTLIGHT: OFFICE PAPER USE

Maple Ridge - Pitt Meadows School District No. 42 reduces its paper consumption by approximately 10,000 packages in 2018. The main reason for this significant reduction has been the introduction of new printers that have a staff scan card reader embedded. Reduced district paper use has led to other related cost savings on ink and toner, as well as storing and shredding documents. Since 2010 SD42 has saved 65 tonnes of CO₂ emissions, a 36% reduction in emissions associated with paper consumption.

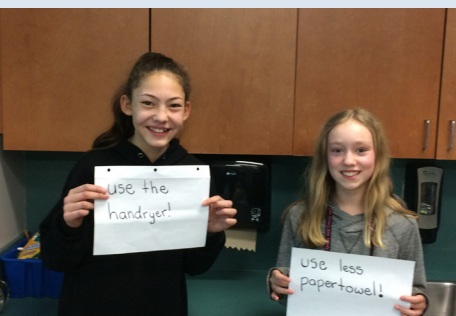
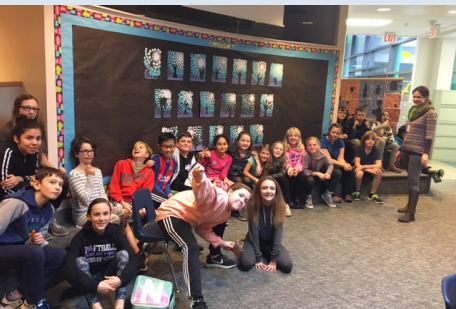
SPOTLIGHT: ENERGY CHALLENGE EMPOWERS STUDENTS

For the third year in a row, students and staff across the school district turned down the lights and turned up their energy-saving efforts while participating in the Maple Ridge - Pitt Meadows School District (SD42) Energy Challenge.

Seven elementary and secondary schools participated in the third-annual event and completed 117 different energy-saving activities - from Blanket Days to Free the Plug Fridays, and much more - during the month of February. As a result, the school district saved 11,103 kWh of electricity and 117 GJ of natural gas during the month, enough to power 3.5 residential homes for an entire year. This year's winner is Kanaka Creek Elementary, which had a student-led Green Team of more than 20 participants.

NEW WASTE COLLECTION PROGRAM

In March 2018, the Maple Ridge - Pitt Meadows School District implemented a new program that simplifies waste collection, diverts more of our waste from the landfill, and reduces the environmental footprint of our schools. The program was developed through a consultation process that included input from teachers, custodians, other district staff, union representatives and the district's Environmental Sustainability Committee. Since the program started, the school district has diverted 255,470 kg of recycling and 56,929 kg of organics, a 55% diversion rate. The goal of the program is to reach 80% diversion rate.



IN THE NEWS

MAY 31, 2018

ENERGY CHALLENGE EMPOWERS STUDENTS

For the third year in a row, students and staff across the school district turned down the lights and turned up their energy-saving efforts while participating in the Maple Ridge – Pitt Meadows School District (SD42) Energy Challenge.

FEBRUARY 21, 2018

ENERGY CHALLENGE INSPIRES STUDENTS TO THINK ABOUT SUSTAINABILITY

Ms. Holman's Grade 4 class at Albion Elementary is reducing classroom power consumption during the month of February by having lights-out lunches. Albion is one of 10 elementary and secondary schools participating in the third-annual Maple Ridge – Pitt Meadows School District (SD42) Energy Challenge.

"It means we don't have infinite energy, so we need to save power," said Albion student Callum when asked about participating in the Energy Challenge. "It means helping the environment," added classmate Jaelin.

PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS IN 2019

- Replace and retrofit existing lighting in eight school district facilities with energy efficient fixtures.
- Reduce the number of fixtures and expand the existing dark school approach where applicable.
- Prepare school-based energy conservation initiatives to ensure students 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 expanding the Environmental Sustainability Committee to represent leadership staff, managers and teachers.
- Continue to review and improve operational policies in an effort to reduce utility consumption.
- Proactively deliver regular energy intensity reports to departmental personnel for use in raising general awareness and examining variances from established targets.



2018 CARBON NEUTRAL ACTION REPORT

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MAPLE RIDGE, BC
V2X 8N6

Part 1: CNAR Survey

1. General Information

Name: Alexandra Tudose

Contact Email: alexandra_tudose@sd42.ca

Organization Name: School District 42 Maple Ridge - Pitt Meadows

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: Yes

Sustainability Coordinator: No

Administrative Assistant: No

Facilities/Operations Manager/Coordinator: No

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

Other - Please Specify: Environmental Sustainability Manager

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?: SD42's Board of Education has approved the implementation of an Energy Management Plan. As per the plan, we have and continue to conduct energy studies and continue retrofitting buildings as per the study recommendations. The goal of the Plan is to save \$500,000 in ongoing electrical costs by conducting lighting and HVAC optimization retrofits.

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)

SD42's Board of Education has approved the implementation of an Energy Management Plan. As per the plan, we have and continue to conduct energy studies and continue retrofitting buildings as per the study recommendations. The goal of the Plan is to save \$500,000 in ongoing electrical costs by conducting lighting and HVAC optimization retrofits.

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

Beyond the Energy Management Plan, SD42 is looking at energy improvements that can lead directly to healthier classrooms and improved learning environments by continuously improving the operations of our buildings. Furthermore, we are continuing to apply for funding to support major boiler upgrades. We are also looking at integrating energy conservation in the curriculum whereby major retrofit projects can serve as a learning tool.

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

As per the Energy Management Plan, we have and continue to conduct energy studies and continue retrofitting buildings as per the study recommendations.

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.

The goal of the Plan is to save \$500,000 in ongoing electrical costs by conducting lighting and HVAC optimization retrofits.

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.) (%): 15

Major retrofits (e.g., replacing windows and doors, equipment replacement such as boilers, etc.) (%): 5

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.) (%): 5

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

SD42's re-commissioning goals are to reduce operational expenses through improved building operations by:

- confirm and adjust lighting control schedule on an annual basis
- confirm and adjust air handling system schedule on an annual basis
- employ temperature setback during unoccupied hours
- verify free cooling operation
- repair missing or damaged pipe insulation

I. What % on average of your building portfolio do you recommission each year?: 50

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

No

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

Regular meetings between HVAC and electrical team, energy manager and director of maintenance.

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

II. Please explain why LEED Gold certification was not obtained.

We are in the process of building a new elementary school to LEED Gold standards however we are not pursuing certification because of the additional administration cost.

h) Other actions? Please describe briefly.

SD42 has an Environmental Sustainability Committee, all secondary schools have a green team and several elementary schools have a green team. The energy manager also created presentations to staff and students on several topics including climate change, energy conservation and waste management.

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?

No

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)

SD42 continues to replace its fleet with fuel efficient models.

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

We currently do not have a long term plan.

c) 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: 3

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

SD42's goals do not include electric vehicles or plug in electric vehicles because of the uncertainty around communal charging and the cost of the charging infrastructure. When available, hybrid vehicles were chosen however hybrid versions of the desired vehicles was not available when making our choices.

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.)

N/A

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: 0

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: 3

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: 0

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

How much do you budget per LDV?: 0

How many LDVs do you plan to procure annually over the next 5 years?: 0

How much do you budget per LDT?: 25000

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

How much do you plan to spend per HDV?: 0

How many HDVs do you plan to replace annually over the next 5 years?: 0

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?

SD42 would like to continue going paperless for all its internal operational transactions as well as continue spreading awareness about the amount of paper printed through our Paper Cut app that is installed on each electronic device.

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)

SD42 would like to go paperless for all its internal operational transactions.

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

SD42 would like to go paperless for all its internal operational transactions.

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.

SD42 has recently changed our photocopier contract to one where a scan card is needed to print. This has substantially decreased the amount of paper printed.