



**Central Okanagan  
Public Schools**  
Together We Learn

## **Central Okanagan Public Schools**

### **2019 Carbon Neutral Action Report**

As finalized, this Carbon Neutral Action Report for the period January 1st, 2019 to December 31st, 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 2019 and beyond. By June 30th, 2020, Central Okanagan Public Schools final CNAR will be posted to our website at [www.sd23.bc.ca](http://www.sd23.bc.ca)

#### **EXECUTIVE SUMMARY**

Central Okanagan Public Schools continues to grow and expand services. Due to the continued pressures of student population growth, our efforts in 2019, we focused on creating quality-learning spaces. This included building new schools, relocating portables, adding additional portable classroom spaces, and repurposing non-instructional areas within our schools to create active learning spaces.

Nonetheless, through partnerships with B.C. Hydro, Fortis, and the Ministry, we have also been able to implement a number of projects and initiatives to help further reduce our carbon footprint. One of our highlights included boiler upgrades and retrofits at South Kelowna Elementary, Anne McClymont Elementary and Chief Tomat Elementary. With these upgrade, we were able to replace an end of serviceable life boiler with high efficiency-condensing boilers that not only improved reliability and occupant comfort but also reduced emissions. Through Ministry funding and the Carbon Neutral Capital Program (CNCP) we were able to reduce 50 Tonnes of harmful Green House gasses being released into the atmosphere.

Other Mechanical upgrades included Roof Top Unit (RTU) replacement at Pearson Road Elementary and several hot water tank upgrades throughout the district. Further steps have also been taken to improve building performance through review and recommissioning of the Building Automation Systems (BAS) through continuous optimization.

Our staff, students, parents and community partners continue to develop a culture of sustainable thinkers by practicing conservation activities in our buildings daily; turning off the lights and recycling and composting at a number of school sites. This also supports our “Green Teams” of students throughout the district to continue to share their enthusiasm and knowledge with other students and staff on a variety of green projects including our district's recycling and composting programs. We are also encouraged by our district's initiative to print less paper and shift towards electronic document storage in an effort to reduce paper consumption.

While the Central Okanagan Public Schools is continually working on reducing its carbon footprint, it still generates GHG emissions. Through careful planning and strategizing, we will continue reducing our GHG emissions.



## OVERVIEWS

### ACTIONS TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS IN 2019

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#### NEW CONSTRUCTION



- Canyon Falls Middle School
  - FortisBC Energy Performance Building: 60%-300% less energy than other Middle School Buildings
  - Upgraded to 61kWhr PV Solar Panels - reducing electrical by an additional 42%

#### MECHANICAL UPGRADES

- Pearson Road Elementary
  - Roof Top Unit replacement 20% energy savings
- Boiler Upgrades
  - Anne McClymont Elementary
  - South Kelowna Elementary
  - Chief Tomat Elementary





## ELECTRICAL & SOLAR UPGRADES

- MBSS Gym Lighting Upgrade
  - Bear Gym LED lighting system at 40% in reduced energy

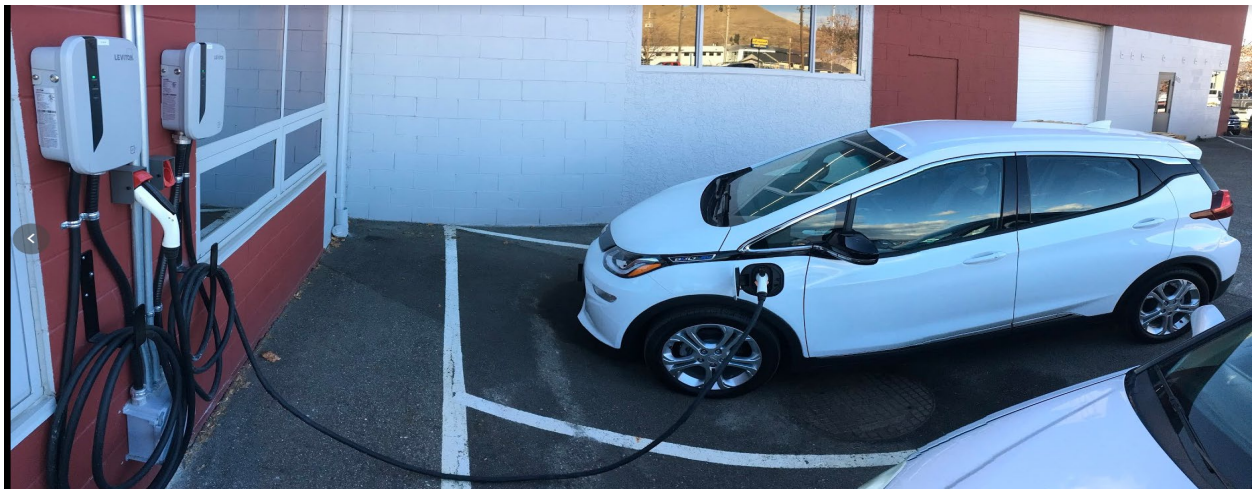


- Canyon Falls Middle School
  - PV Solar Panels – "Near Net Zero"



## TECHNOLOGY

- EV Cars
  - 3 - EV Fleet Cars







## TRANSPORTATION

- Compressed natural gas (CNG) school bus fleet expands to 22 buses.
- Ordered 3 EV Buses to arrive for the 20/21 school year.



BC's Climate Change Accountability Act  
(CCAA, formerly: Greenhouse Gas Reduction  
Target Act, GGRTA)

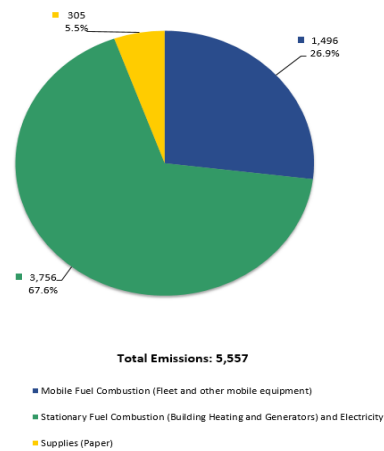
The Province set new targets for GHG  
emissions. Compared to 2007 levels, we are  
now committed to reductions of:

- 40 per cent by 2030,
- 60 per cent by 2040,
- 80 per cent by 2050.



## Emissions and Offsets Summary:

### School District 23 - Central Okanagan (Kelowna) Greenhouse Gas Emissions by Source for the 2018 Calendar Year (tCO<sub>2</sub>e\*)



#### Offsets Applied to Become Carbon Neutral in 2018 (Generated June 18, 2019 7:04 AM)

Total offsets required: 4,309. Total offset investment: \$107,725. Emissions which do not require offsets: 1,247 \*\*

\*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.

Fig 1) Emissions Source Report

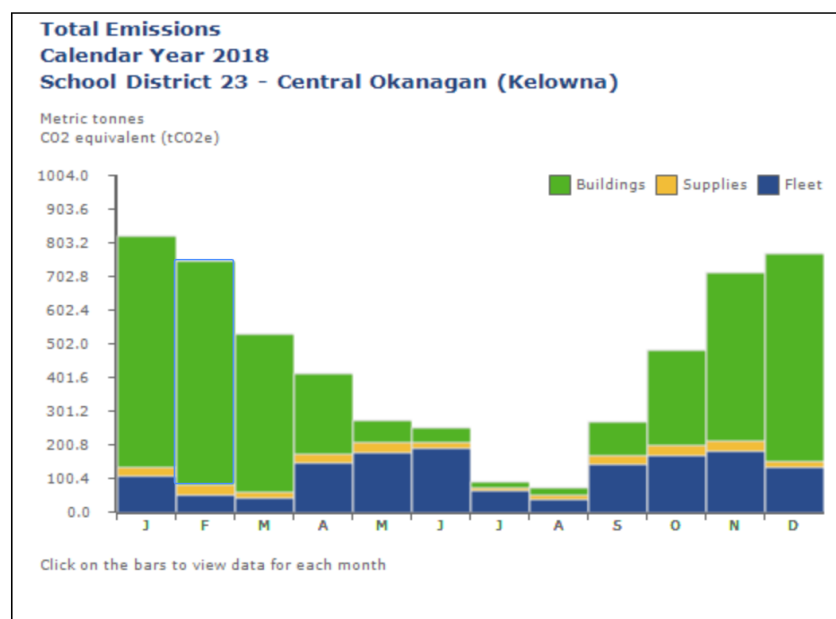




Fig 2) Green House Gas Emission from Fleet, Supplies & Buildings

<b>School District 23 - Central Okanagan GHG Emissions and Offsets for 2019</b>	
<b>As per the <a href="#">Directive</a> issued March 31, 2020, each PSO will use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 CNAR.</b>	
Total Emissions (tCO <sub>2</sub> e)	5557 tCO <sub>2</sub> e
Total BioCO <sub>2</sub>	38 tCO <sub>2</sub> e
Total Offsets (tCO <sub>2</sub> e)	4309 tCO <sub>2</sub> e
Offset Investment (\$25 per tCO <sub>2</sub> e)	\$107,725.00

### Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, **CENTRAL OKANAGAN PUBLIC SCHOOLS** 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 has paid, the associated invoice number CAI425413 issued by the Ministry in the amount of 4,309 tonnes CO<sub>2</sub>e @ \$25/tonne equaling \$113,111.25 (no gst payable).

### Executive sign-off:

Signature

June 1, 2020

Date

**Ryan Stierman, CPA-CMA, MBA**

Name (please print)

**Secretary-Treasurer/CFO**

Title

**Confirmation number:** 00C0FD9D

**Submitted date:** 2020-05-27 16:12:02 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.</li></ul> <p>*Deadline extended from May 29, 2020.</p> <ul style="list-style-type: none"><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](#).

Contact Name:
<i>Harold Schock</i>
Contact Email:
<i>harold.schock@sd23.bc.ca</i>
Organization Name:
<i>School District No.23</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:
Energy Manager
Please select your sector:
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

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

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>As older heating equipment needs replacing, SD23 specifies high efficiency replacement equipment.</i>
Over the long term (6-10 years)
<i>Planning and testing of new technology to reduce GHG.</i>
Please describe your strategy's goals (if any) related to energy audits.
<i>While looking at the energy performance of a school building, Every year we review the top 10 energy consumption readings. Apply resources to those sites to improve the energy performance.</i>



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

10%

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

*Sd23 applies funds to our school buildings with the largest need.*

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

3%

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.)

3%

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%

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

*SD23 make the programming changes that is proven to save energy.*

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

10%

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.

*Replacing old A/C units before they fail.*

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

0

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

1

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

*Build to LEED Gold Equivalent*

Other actions? Please describe briefly:

*Solar Panel installation*

## 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)

*Purchase 3 - EV Buses to reduce GHG.*

Over the long term (6-10 years)

*Purchase more EV fleet vehicles*

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

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

3

“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

2

Gas/diesel vehicle

0

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

*Purchased 0 gas engines*

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?

8

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

8

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?

2

Level 3?

0

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

As defined in the previous section

8

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.)

*Planning for EV Bus electrical demand.*

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)

3

“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

0

#### 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

25

Gas/diesel

50

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)

*Each photo copier logs the amount of paper used. Each department reviews paper usage.*

Over the long term (6-10 years)

*Move toward 100% recycle paper*

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

Yes

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

Yes

Other 2019 actions, please specify

*Testing 100% paper*