



Memorandum

Date: May 29, 2020
To: Planning and Facilities Committee
From: Mitch Van Aller, Director of Operations
Prepared by: Harold Schock, Energy & Sustainability Manager

Information Item: Updated Sustainability Initiatives 2020

1.0 RELEVANT BOARD MOTION/DIRECTION

The attached provides a sustainability update to the Committee as per Policy 660 – Environmental Sustainability.

2.0 BACKGROUND

Policy 660 – *Environmental Sustainability*: meeting the needs of the present without compromising the ability of future generations to meet their own needs. To review, report and continually strive to improve our environmental sustainability performance.

In the 2007, Throne Speech and subsequent legislation (Bill 41- GGRTA), the BC Government committed that government operations (including School Districts) would be “Carbon Neutral” by 2010. In 2018, BC Government created Climate Change Accountability Act (CCAA, formerly: Greenhouse Gas Reduction Targets Act, GGRTA) updated legislated targets for reducing greenhouse gas emissions:

- By 2030, GHG emissions are to be reduced by at least 40 percent below 2007 levels,
- By 2040, GHG emissions are to be reduced by at least 60 percent below 2007 levels,
- By 2050, GHG emissions will be reduced by at least 80 per cent below 2007 levels.

Central Okanagan Public Schools has achieved carbon neutrality through a mix of actual emission reductions and carbon offset purchases.

3.0 INFORMATION STATEMENT

The Energy and Sustainability Manager, Harold Schock, has prepared the attached report describing current sustainability initiatives as well as plans for the future (Appendix A).

4.0 DIRECTOR'S COMMENTS

As part of B.C.'s Climate Change Accountability Act (CCAA) the public sector, the District is required to submit a Carbon Neutral Action Report (CNAR) to the B.C. Climate Action Secretariat (Ministry of Environment) and the BC Ministry of Education. The act requires that provincial

government, including provincial ministries and agencies, schools, colleges, universities, health authorities and Crown corporations, to be carbon neutral each year starting in 2010 and to make public a report every year detailing actions taken towards reducing greenhouse gas emissions. SD23's CNAR report summarizes our annual greenhouse gas emissions from the government mandated reporting areas: direct and indirect fuel used for operating building systems (heating, cooling of buildings and electricity) and from consumption of office paper.

In 2019, the District continually operated below the 2010 utility consumption levels, achieved a 10% electrical reduction compared to the baseline year of 2006. This has been achieved despite a 7% building area growth since 2007. The District is on track to achieve the 40% Green House Gas (GHG) reduction target by 2030. Carbon Neutral Action Report is submitted to the BC Climate Action Secretariat each year. Each school district's CNAR reports can be viewed on BC's Environmental Protection & Sustainability website.

The District demonstrated its commitment to sustainability in 2019 by receiving FortisBC's Commercial new construction performance incentive. A program that encourages the construction of school buildings that achieve higher energy performance beyond the minimum levels required by the BC Building Code. Using the new BC Energy Step Code, the Canyon Falls Middle School design team decided how to achieve the energy efficiency goals of their project and, as a result, reduce energy use and greenhouse gas emissions, save money and increase occupant comfort. Canyon Falls Middle School uses 40% less energy. Building envelope, geo-exchange, programmable LED lighting, controllable speed drives and six way valves all contributed to this high performance building. The District received the maximum incentive from FortisBC (\$241,874). The District also received \$32,319 in rebates for the boiler upgrades at Anne McClymont, South Kelowna and Chief Tomat Elementary schools. These incentives and rebates purchased the 61 kW Solar Panels at Canyon Falls Middle School and the balance of funds will be put towards the purchase of three electric school buses. Conservation and sustainability has become “business as usual” in the District. Greenhouse gas reduction activities are a part of our School District culture.

5.0 NEXT STEPS

Complete the documented Carbon Neutral Action Report (CNAR) and meet all provincial greenhouse gas reduction targets and reporting requirements. Utilize all funding sources to achieve our goals and objectives.

6.0 APPENDIX

A. Sustainability Action Presentation



**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

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

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

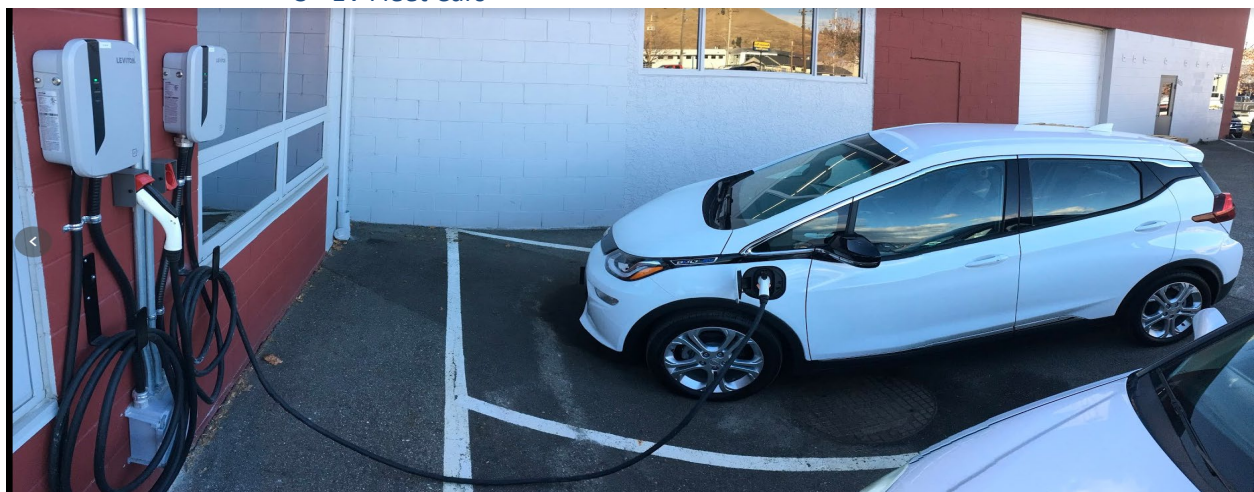


- Canyon Falls Middle School
 - PV Solar Panels – "Near Net Zero"



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)

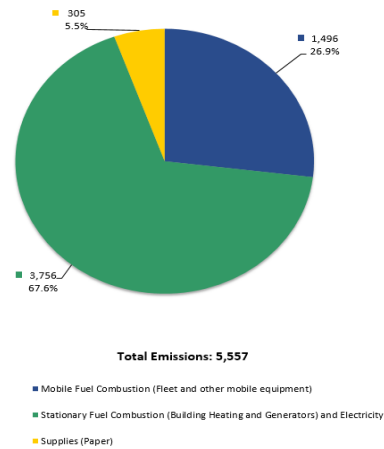
The Province set new targets for GHG
emissions. Compared to 2007 levels, we are
now committed to reductions of:

- 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 (tCO₂e*)



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 (tCO₂e) 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

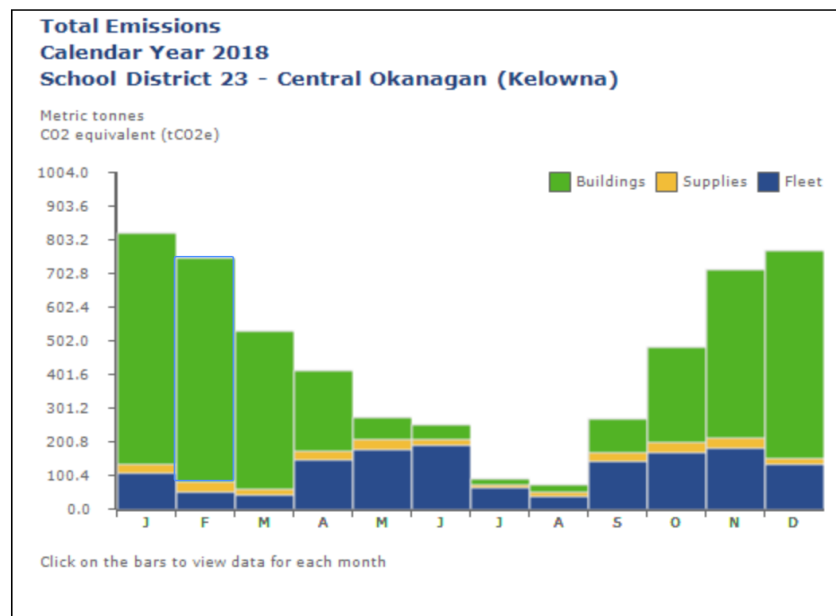




Fig 2) Green House Gas Emission from Fleet, Supplies & Buildings

<i>School District 23 - Central Okanagan GHG Emissions and Offsets for 2019</i>	
As per the Directive issued March 31, 2020, each PSO will use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 CNAR.	
Total Emissions (tCO ₂ e)	5557 tCO₂e
Total BioCO ₂	38 tCO₂e
Total Offsets (tCO ₂ e)	4309 tCO₂e
Offset Investment (\$25 per tCO ₂ 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 CO₂e @ \$25/tonne equaling \$113,111.25 (no gst payable).

Executive sign-off:

Signature

Date

Ryan Stierman, CPA-CMA, MBA

Secretary-Treasurer/CFO

Name (please print)

Title