2021 CLIMATE CHANGE ACCOUNTABILITY REPORT

May 2022

BOARD OF EDUCATION
BURNABY
SCHOOL DISTRICT

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DECLARATION STATEMENT

DECLARATION STATEMENT: This PSO Climate Change Accountability Report for the period January 1, 2021, to December 31, 2021, summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2021 to reduce our GHG emissions, and our plans to continue reducing emissions in 2022 and beyond.

OVERVIEW

On behalf of Burnaby Schools, we are pleased to submit our Carbon Neutral Action Report for 2021. This report has been created during the conclusion of the COVID-19 pandemic years and all its collective learnings, successes, and challenges. These unique years have been unlike any have experienced in generations. As we push through this this time of hopeful denouement, sustainability will continue to be at the core of our recovery.

During 2021, Burnaby School District's in response to COVID-19 the District increased its ventilation requirements serving our classrooms. Highlights from the 2021 year include, two lighting upgrades, implementing the second phase of a re-engineering mechanical upgrade at Burnaby South Secondary, two high-efficiency Roof Top Unit projects, and the opening of the new district Board Office in November 2021. The projects implemented support the work started in 2008 with the continuous goal of reducing the District's carbon impact.

Our greatest carbon footprint contributor is natural gas. Full Stop. Repercussions from ventilation requirements due to COVID-19 have therefore had the greatest impacts to our overall GHG emissions in 2021. Running the natural gas heating equipment as efficiently as possible is therefore a priority. This has been made possible through upgrading existing boiler systems, ensuring accurate building scheduling, and where applicable system retrofits. For over a decade the District has adopted retrofitting its aging heating infrastructure with high efficiency boilers. The primary objective is maintaining occupant's comfort while increasing overall energy efficiency and in turn lowering GHG emissions.

In identifying the unending goal of decreased carbon consumption, the District has made choices that embrace green technologies. Over the years this has included, early adoption of high-efficiency heating systems, solar panels, the use of geothermal exchange systems, the use of electric fleet vehicles, 27 electric vehicle charging stations, and various water conservation initiatives.

The on-going commitment to reducing emissions cannot be stated without mentioning efforts to promote sustainability, community stewardship, and accountability at every level. These remarkable groups and the communities in which they serve range from Green Teams, to the local chapter of Environmental Educators Provincial Specialist Association (EEPSA), school gardens, and many other groups. They all separately work toward a common theme of proliferating awareness and education initiatives that have in turn generated strong ties within the community and its guardianship.

ENVIRONMENTAL POLICY

In 2010, the Burnaby School District was one of the leaders to implement an official Environmental Sustainability Policy which in part states:

> *"The Board acknowledges that Environmental Sustainability is a joint responsibility of trustees, students and staff and is committed to sound practices that focus on minimizing pollution and refuse, reducing energy use and water consumption, and promoting a healthy environment for students and staff within the limited financial resources available."*[1]

Furthering this policy, in 2019 the Burnaby Board of Education released its 5-year Strategic Plan, which includes the following objective under key priority "Modern, Safe, and Sustainable Learning Environment", Goal 3 – Increase District awareness of climate change and decrease the District's environmental impact:

I. *Reduce the overall green-house gas output and carbon footprint of the District.*

II. *Reduce the District's overall physical waste, diversion, and consumption.*

III. *Engage the Burnaby Youth Sustainability Network (BYSN) to deliver quantifiable environmental outcomes.*

IV. *Build awareness of the efforts undertaken by the Burnaby School District as a model for environmental awareness and sustainability.*

V. *Review and strengthen policies and practices related to environmental impact."*[2]

This platform will guide the District in its manner of conducting business moving forward and the stewardship of the micro communities tied to the District and city of Burnaby.

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[1] Policy #7.70
[2] BBOE Strategic Plan 2019-24

ACTIONS TAKEN IN 2021

COVID-19 has continued to impact how the District operates in 2021 to ensure safety and adhering to the Province-wide enhanced safety measures and protocols. Various changes were implemented to ventilation programming, facility rentals are currently suspended, and community schools continue to be the hubs within neighbourhoods where need is greatest.

The District completed two lighting upgrades at Lochdale Elementary and the Marlborough Elementary campus which is comprised of an elementary school (East) and a converted junior secondary school (West). These upgrades use LED technology along with innovative lighting control technology and create a smart space. This is achieved with the use of dimmability and vacancy sensors that maximize energy savings from occupancy.

There were several natural gas projects implemented in 2021. Second Street and Sperling Elementary Schools both had high efficiency condensing Roof Top Units installed for improved ventilation within the school's gyms. Marlborough (East) Elementary School had a mid-efficiency boiler plant from early 2000s that was upgraded to a high efficiency plant.

Burnaby South Secondary completed the second phase mechanical/HVAC re-design. Burnaby South completed in 1993 is the largest school in the District and the province at over 29,000m^2 therefore these measures are no small undertaking. This school has been revisited multiple times for energy conservation measures over the past 30 years but cannot shake being consistently the most energy intense for our eight-secondary schools. This multi-stepped Energy Conservation Measures (ECMs) project to the building's mechanical systems improves the overall efficiency of both natural gas, electrical consumption and overall GHG emissions. Preliminary data has shown vast improvement to the school's energy consumption and has indicated a reduction of 12% to 8% of the total district energy consumption.

The District Energy Foreman has continued to play an integral part of the energy team. This position was created in 2019. It has demonstrated quantifiable merit and demonstrated the imperative necessity for a link between the Energy and Operations teams. During the onset of the pandemic at the end of March 2020, the District relied heavily on the Energy foreman's skills to ensure that facilities energy usage corresponded with drastically reduced building occupancy. Continued efforts during 2021 as COVID-19 progressed and the province's ventilation recommendations, the Energy foreman responded accordingly. This position has proven to be invaluable to the District's ongoing conservation efforts.

The District has fully embraced EV adoption, supporting its users through installation of infrastructure and 2021 saw the continued integration of Electric Vehicles (EV) charging stations. The District now has 27 EV stations available for use to staff, students, and visitors to assist in their daily commute.

NEW SCHOOL DISTRICT ADMINISTRATION OFFICE

Construction of the new Burnaby School District's Administration Office concluded in fall of 2021. The building's geothermal exchange plant will be the third installation of its kind in the District, joining the company of Burnaby Mountain Secondary and Burnaby Central Secondary.[3] The facility is a blend of the heritage building and a new annex. The new District Administration Office opened in late 2021 and the previously used Administration office is no longer a part of the district's portfolio. Between the renovation on the existing heritage building and the removal of the old Administration Office, the estimated reduction in GHG emissions is approximately 102 tCO_2e per year.

[3] Proposed New School District Admin Office Open House

LOOKING FORWARD

Construction of Burnaby North Secondary School started back in the Spring of 2020. This project's innovative nature has involved the collaboration of many stakeholders and is a greatly anticipated endeavor. This project is scheduled for completion in the fall of 2022.[4] [5] When Burnaby North completes it will operate with geothermal exchange technology. This cutting-edge geothermal exchange approach may prove to be a model for GHG reduction in future school design across the province. The calculated reduction is 400, a remarkable tCO_2e per year or approximately 6% of the districts overall GHG emissions.

In 2022, Parkcrest and Seaforth Elementary School's construction will wrap up. Both elementary schools will have gone through seismic upgrades including upgrades to their boiler plants and overall power needs.

Stride Avenue Community School is slated for replacement. It's currently in the design phase and will use a Geo-Exchange system for its heating needs. Stride Avenue is located in a rapidly developing area in Burnaby and will be a welcome change to the community in which it serves.

2022 will continue with LED lighting upgrades along with initiatives based on ensuring the schools electrical systems are functioning as efficiently as possible. Going past 2022, the District intends on staying the course of converting to LED technologies and supporting the BC Hydro initiative of Low Carbon Electrification.

Into the years ahead, retrofitting heating systems to high efficiency will also stay the course where applicable. Considering the pandemic years, ventilation projects have taken the lead in priority. This means Roof Top Units that incorporate high efficiency natural gas technology to give facilities more zone control and ideally reduced GHG consumption with greater air movement are being implemented.

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[4] MOE Press Release Burnaby North
[5] Burnabynow Local News Story

In the coming years, the District will further focus on the reduction of GHG emissions while incorporating the new parameters within a post COVID-19 world. Impacts will be seen in the schools' daily operations, ventilation systems, heating, electricity use, and many other facets. These challenges will be faced with safety, conservation, and efficiency at the forefront.

EMISSIONS AND OFFSET SUMMARY TABLE

The Board of Education School District 41(Burnaby) 2020 GHG Emissions and Offsets	
GHG Emissions created in Calendar Year 2021 *[See **Appendix 1 for instructions** on how to access your 2021 emissions data from the Clean Government Reporting Tool (CGRT). Cells A through E below are identified in Appendix 1.]*	
Total Emissions (tCO_2e)	*6189 + 0 = 6189*
Total $BioCO_2$	*0 + 13.9 = 13.9*
Total Offsets (tCO_2e)	*6175*
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	*0*
Grand Total Offsets for the 2020 Reporting Year	
Grand Total Offsets (tCO_2e) to be Retired for 2020 Reporting Year	*6175 + 0 = 6175*
Offset Investment ($25 per tCO_2e) *[Grand Total Offsets to be Retired x $25/$tCO_2e$]*	*6175 X $25 = $154,375*

RETIREMENT OF OFFSETS

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, The Board of Education School District 41 - Burnaby (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2021 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.

Executive sign-off:

	June 6, 2022
Signature	Date
Russell Horswill	Secretary-Treasurer
Name (please print)	Title