2021 PSO CLIMATE CHANGE ACCOUNTABILITY REPORT

Organization: Nanaimo-Ladysmith Public Schools (NLPS - School District 68)

PART 1. Legislative Reporting Requirements

Declaration statement: This PSO Climate Change Accountability Report for the period January 1st, 2021, to December 31st, 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.

By June 30th, 2022, NLPS final 2020 Carbon Neutral Action Report will be posted to our website at www.sd68.bc.ca

Emission Reductions: Actions & Plans

In 2021, actions to reduce GHG emissions are:

- Various Schools: NLPS has completed the Power Smart lighting program with BC Hydro to realize 273,000 kWh savings
- Cedar Secondary: two natural gas hot water tanks were replaced with electric units reducing GHGs by approximately 6tCO2e
- Rutherford: Installed four high efficiency gas furnaces Summer 2021 - GHG savings of 1.4tCO2e
- Woodlands Band room: gas furnace replaced with heat pump. GHG reduction of 2.5tCO2e

Our plans to continue reducing emissions in 2022 consist of:

- Cedar Secondary PHASE 1: Plan is to remove cooling tower and replace with 37 tonne air-to-water-heat pump (AWHP) to supplement boiler loop as primary source of heating and cooling; thereby lowering load on boiler and rooftop units (reduction in carbon output). Boilers will only operate during peak heating load (approx. 10 days in Jan & Feb). This represents a savings of 49tCO2e
- Cedar Secondary PHASE 2: Plan is to replace a 21-year-old boiler (end of useful life) and is not sized to keep up during peak demand. In addition, there are two make-up air units that also 21 years old, do not have variable speed drives and do not have damper controls or CO2 monitoring. Plan is to replace and right-size both make-up air units with condensing models, add variable speed drives and add CO2 sensors within the space. This would generate another 50% reduction is gas usage and an additional 37tCO2e would be saved
- John Barsby High: plan is to replace end of life atmospheric boilers with new condensing boilers. Completion date Summer 2022. 46tCO2e saved. In addition, plan to replace air cooled chiller with VRF system which will offset associated gas-fired heating load which would reduce another 11tCO2e. Completion March 2023
- Brechin: plan is to replace end of life atmospheric boilers with new condensing boilers. Completion date Summer 2022. GHG savings of 9tCO2e
- McGirr: plan is to replace gas-fired furnaces with heat pump. Completion date December 2022

- Pleasant Valley: replacing gas-fired RTU on gym with air-source heat pump. Completion date Sept 2022. 16tCO2e CO2 saved
- Cilaire: full mechanical upgrade includes addition of air to water heat pump to new condensing boiler system which results in a net effect of 544 GJ gas savings or 27tCO2e
- We ran the 7th year of the 'Energy Cup Challenge', in partnership with Fortis and BC Hydro. Conservation of resources and behavioral change were key elements for the competing schools. Successful year as 16 schools participated

As of June 1st, 2022, we now have four Electric School buses in full operation. Even though buses are exempt in calculating offsets for the District, the goal to reduce our carbon footprint will still be positively affected by switching from diesel to a carbon-free fuel. There are plans in 2023 to add another three EV busses and possibly add to white fleet. Also, as of May 1, 2022, our first ELECTRIC white fleet trades vehicle is operational, and plan is to purchase a hybrid white fleet vehicle by December 2022. A white fleet study will begin June 1st, 2022, to further evaluate infrastructure needs and vehicle replacement plan.

The School District will continue to evaluate renewable sources of energy to help reduce the District's carbon footprint.

A. Stationary Sources (e.g., buildings, power generation)

SD68 continuously strives to reduce GHGs by upgrading gas-fired systems to either more efficient technology or fuel switch (electrification) to meet internal GHG or CleanBC targets for PSOs. Over the last two fiscal years, local capital has been allocated to enhance GHG reducing projects and SD68 will continue to target synergistic mechanical GHG reduction projects to occur at the same time as minor and major capital projects. In addition, when equipment is at end of life or at failure, SD68 maintenance culture is to look at the most efficient affordable option to reduce GHGs.

B. Mobile Sources (e.g., fleet vehicles, off-road/portable equipment)

- SD68 has a No-Idling policy
- SD68 has two fleet EV vehicles currently – one purchased in Oct 2021
- SD68 has a plan to increase EV vehicles
- Plan to participate in the EV FLEET READY plan (BC Hydro program). Plan is to complete this study late 2022
- SD68 installed six EV charging stations for EV Busses & white fleet– with plans to install three more charging stations for EV Busses
- Reviewing feasibility and sustainability of installing EV charging stations at a few select school sites for staff and public use

C. Paper Consumption

SD68 continues to purchase paper with a recycled portion. Will investigate to increase the % of recyclable content.

2021 GHG Emissions and Offsets Summary Table:

Nanaimo Ladysmith Public Schools (SD68) **2021 GHG Emissions and Offsets Summary**	
GHG Emissions created in Calendar Year 2021	
Total Emissions (tCO_2e)	*3936*
Total $BioCO_2$	*37.8*
Total Offsets (tCO_2e)	*3507*
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	*0*
Grand Total Offsets for the 2021 Reporting Year	
Grand Total Offsets (tCO_2e) to be Retired for 2021 Reporting Year	*3507*
Offset Investment ($25 per tCO_2e)	*$87,675*

Note - total offsets increased by 12% compared to 2020 – a direct result of increased ventilation requirements due to COVID-19.

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, School District 68 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.

PART 2. Public Sector Leadership

2A. Climate Risk Management

SD68 continues to lead, explore and implement different options to reduce the District's carbon footprint and to mitigate effects of climate change. On the operational and facilities side, SD68 continues to:

- Replace gas-fired air heating systems with air-source heat pumps where feasible
- Supplement gas-fired hydronic systems with air-water heat pumps where feasible
- Add full or partial cooling with electrification upgrades
- Add smoke mitigation ventilation programming to building control systems (close dampers if necessary)
- Add a night-time flush to bring in cooler air to keep the buildings cooler during heat waves/domes
- Install heat pumps for heating and cooling in all new portables, day cares and afterschool cares
- Add climate-controlled irrigation systems to school fields
- Add more EV's to transportation fleet as part of long-term replacement plan
- Participate in BC Hydro Continuous Optimization Program to ensure efficient operation of all mechanical systems controlled by a building automation system

2B. Other Sustainability Initiatives

Other sustainability initiatives include:

- Pilot program initiated to facilitate the reduction and diversion of organics at one site; successfully completed end of May 2022. Intent is to roll out program to 10 more sites by September 2022 with District-wide completion by Sept 2023. Supports goals and actions as stipulated in AP 516 – Stewardship of the Land Policy promoting the concept of reduction, reuse and recycling of resources and conducting a district wide recycling program
- Environmental Stewardship and Sustainability Advisory Committee was formed January 2022. This committee is to advise the Board of Education on Environmental Stewardship and Sustainability and to fulfill the Environmental Stewardship Policy in an evidence-based manner that considers our interconnectedness with the land. Matters considered will include district facilities, educational programs and public engagement activities to holistically contribute to the awareness around lowering our carbon footprint. Our vision, by the year 2030, NLPS will be a leader in environmental stewardship and sustainability. Guided by its core values, NLPS actions and informed decisions will have resulted sustainable learning environments, significant climate change remediation, and a renewed relationship with the land
- For all transportation fleet, NLPS has a no-idling fleet operational practice
- Formalized Environmental Stewardship Policy – AP509
- Within the Strategic Plan for the School District, one of the main goals is "To be a leader in environment stewardship and sustainability"

- Considering feasibly of a community proposed installation of solar PV panels at a remote site
- Planning solar panel installation at one elementary school site to reduce electrical consumption to be a net zero user of grid electricity

2C. Success Stories

District provided $1.1M of local funding over two years (20/21 and 21/22) for projects to reduce GHG emissions. This was in support of the Board's objective to reduce GHGs by 4.5% per year.

Some of our substantial GHG reductions are a result of mechanical upgrades either from updating boiler plants with condensing technology and adding heat pumps to replace or supplement boiler loads. By December 2022, will have completed:

	GHG reduction (tC02e)
• Three boiler plant upgrades (Brechin, CSS, HB, JBS)	104 tonnes
• Mech upgrades including fuel switching (Cilaire, PV, CSS)	92 tonnes

In addition, fuel switching allows the District to provide partial cooling to the sites adding an extra level of comfort for the occupants.

Executive Sign-off:

May 27, 2022

Signature | Date

Mark Walsh | Secretary-Treasurer

Name (please print) | Title