

NANAIMO LADYSMITH PUBLIC SCHOOLS 2022 PSO CLIMATE CHANGE ACCOUNTABILITY REPORT

Title: 2022 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 1, 2022, to December 31, 2022 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2022 to minimize our GHG emissions, and our plans to continue reducing emissions in 2023 and beyond.

By June 30th, 2023, NLPS final 2021 Carbon Neutral Action Report will be posted to the District's website at www.sd68.bc.ca.

Emission Reductions: Actions & Plans

In 2022, actions to reduce GHG emissions are:

- Pleasant Valley: replaced gas-fired RTU on gym with air-source heat pump. Completed September 2022. Electrification of main heating system to produce estimated carbon savings of 16tCO₂e.
- Cilaire: full mechanical upgrade includes addition of air to water heat pump to new condensing boiler system. Completed September 2022. Electrification of main heating system to produce estimated carbon savings of 27tCO₂e.
- John Barsby High: end of life atmospheric boilers replaced with new condensing boilers and partial building automation system upgrade. Completed December 2022. Estimated carbon savings of 46tCO₂e.
- Cedar Secondary PHASE 1 & 2: removed cooling tower, replaced with 37 tonne air-to- water-heat pump (AWHP) to supplement boiler loop as primary source of heating and cooling, replaced boiler, replaced and right-sized make-up air units with condensing models, added variable speed drives and added CO₂ sensors within the space. Completed December 2022. Estimated carbon savings of 86tCO₂e.
- Brechin Phase 1: replaced end of life atmospheric boilers with new condensing boilers. Completed December 2022. Estimated carbon savings of 10tCO₂e.
- Hammond Bay: replaced end of life atmospheric boilers with new condensing boilers. Completed December 2022. Estimated carbon savings of 12tCO₂e.
- We ran the 8th 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. Participating schools were recognized at the first annual "Energy Cup Banquet". Prizes handed out at banquet as well as recognition message from Superintendent.
- Saved 20,000 liters of diesel by operating four electric busses. Estimated carbon savings of 42tCO₂e.

- Enrolled all school sites in BC Hydro's Continuous Optimization program – focuses on optimizing building control automation systems to improve efficiency of energy-intensive systems, such as HVAC. Anticipated utility savings are between 5-10%. Expected completion is Summer 2025. Will be a three-phased project with Phase 1 completing March 2024.

Our plans to continue reducing emissions in 2023 consist of:

- Update and replace building automation system at possibly two sites
- Continuous Optimization – studies for 26 sites to be completed by September, 2023; balance by January 2024
- Brechin PH2: electrification measure to add ASHP to supplement boiler loop as primary source of heating and upgrade all heating coils to low-temperature coils. This will enhance savings from condensing boiler installed in Phase 1. Current project at tender as optional price for taking advantage of cooling - this is funding dependent (climate adaptability). Expected completion November 2023. Estimated carbon savings of 20tCO₂e.
- Arriving Summer 2023, three more 70-passenger electric school busses, three white fleet trades vehicles and one service vehicle. 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.
- A white fleet study has been approved and will begin Summer 2023 to further evaluate infrastructure needs and vehicle replacement plan.

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 (noted projects above) 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.

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

- SD68 has a No-Idling policy
- SD68 has two fleet EV vehicles currently with four more arriving Summer 2023
- SD68 has a plan to increase EV vehicles as ICE vehicles are retired – and operational requirements can be met and funding for the additional capital can be identified.
- Engaged consultant to deliver EV FLEET READY plan (CleanBC). Plan is to complete this study October 2023
- By Summer 2023, SD68 will have a total of seven EV charging stations for EV Busses and two for white fleet.
- By Summer 2023, SD68 will have a total of seven EV school busses
 - i. Two of the seven were delivered in August 2022 – are in service and part of the fleet
 - ii. Three of the seven will be delivered Summer 2023 - and put in service September 2023
- Early stages of considering feasibility and sustainability of installing EV charging stations at a few select school sites for staff and public use
- Concept planning for next 10 EV bus charging stations infrastructure to commence end of 2023

Clean Fleet Plan: EV FLEET ready plan completion date estimated October 2023

Paper Consumption

SD68 continues to purchase paper with a recycled portion. A plan has been put in place to remove all personal printer to help reduce consumption of paper.

2022 GHG Emissions and Offsets Summary Table

Nanaimo Ladysmith Public Schools 2022 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2022	
Total BioCO ₂	39.4
Total Emissions (tCO ₂ e)	4188
Total Offsets (tCO ₂ e)	3741
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	-105
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets to be Retired for 2022 Reporting Year (tCO ₂ e)	3636
Offset Investment (\$)	\$90,900

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 2022 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 Climate 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 plans to continue to (as funding is available):

- Replace gas-fired air heating systems with air-source heat pumps where feasible
- Replace gym air handling units with ASHP (with gas backups) and use this space as a respite area for heat dome days.
- 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 and Childcare projects.
- 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:

- 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.
- As of September 2022, the Board of Trustees passed the Environmental Stewardship Action Plan (ESAP). The ESAP is a document with 81 actionable items that will operationalize the Board's strategic goal of being a leader in environmental stewardship and sustainability. Some key examples of actions include:
 1. Create a GHG emission reduction plan to achieve 2030 targets
 2. Electrify the school district fleet
 3. Support the BC Hydro Strategic Energy Management Plan
- Seven additional sites added to waste diversion program September 2022. 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
- 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"

2C. Success Stories

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. The mechanical projects listed above in the Emissions Reduction section are now going through the measurement and verification process (2023) to ensure the projected carbon savings are realized.

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

Addition of three more EV busses and four white fleet vehicles shows that SD68 continues to value the importance of converting the fleet as well.

Active participation of our students in Energy Cup helps increase awareness around climate change matters and this year, an additional “Climate Change” presentation was delivered to many classes throughout the District.

Executive Sign-off:



Signature

May 25 2023

Date

Mark Walsh

Name (please print)

May 25 2023

Title