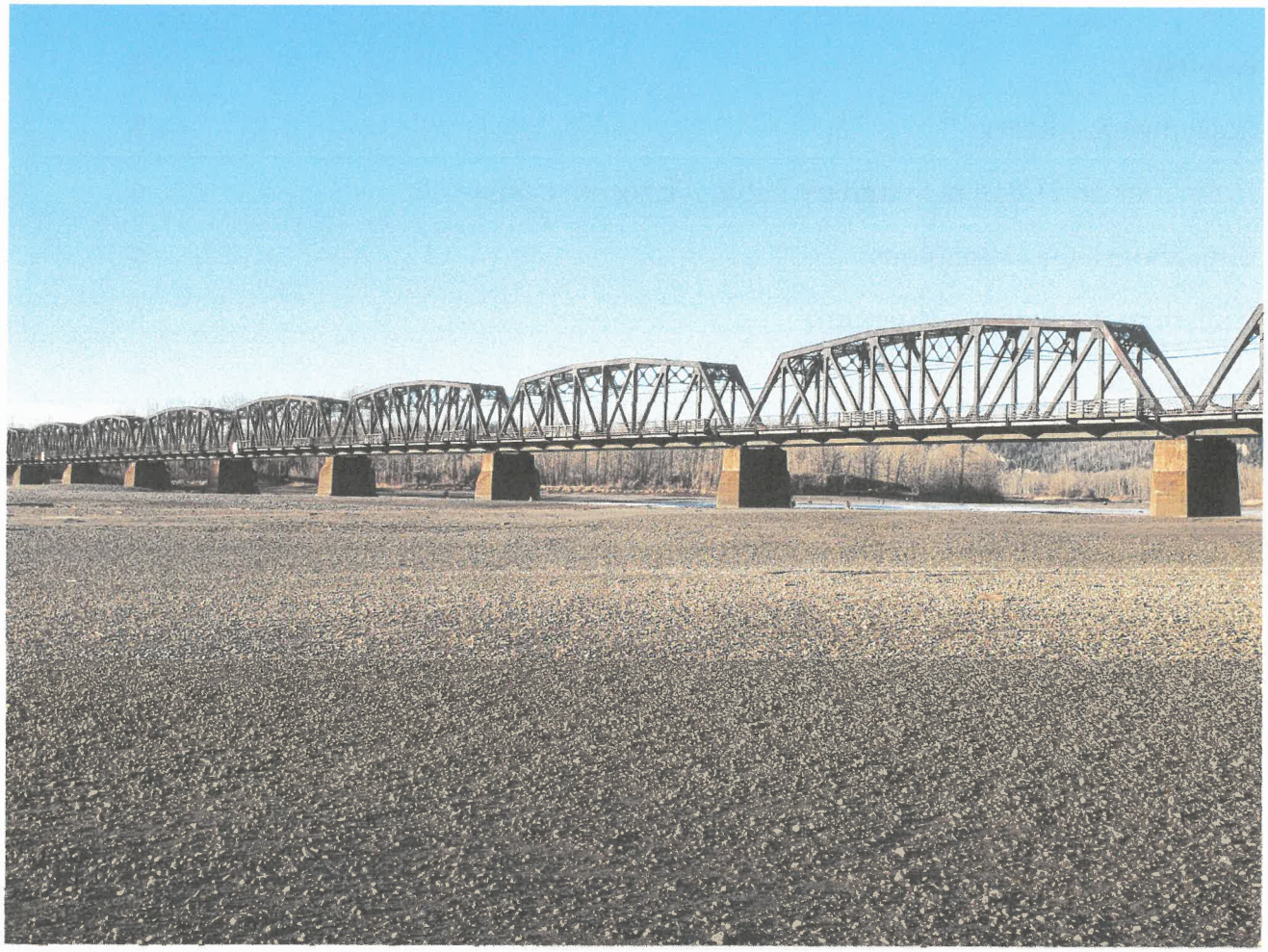
2023 PSO Climate Change Accountability Report

5/10/2024



Canadian National Railway Bridge—Fraser River, Prince George, B.C.

December 31, 2023

Learning that Enriches the Life of Each Student

School District No. 57
PROVINCE OF BRITISH COLUMBIA

www.sd57.bc.ca

Contents

2023 PSO Climate Change Accountability Report
School District No. 57

* MEASURE * REDUCE * OFFSET * REPORT * PLAN *

2023 PSO Climate Change Accountability Report

School District No. 57

This Climate Change Accountability Report for the period January 1, 2023 to December 31, 2023 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2023 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2023 and beyond.

By June 30, 2024, School District No. 57 final 2023 Climate Change Accountability Report will be posted to our website at:

https://www.sd57.bc.ca/Programs/DistrictDepts/Maintenance/

or can be found on the government website at:

https://www2.gov.bc.ca/gov/content/environment/climate-change/public-sector/cnar/annual-reports-cnars-table

Executive Summary

School District No. 57 has been carbon neutral since 2010.

In 2023 we have continued our efforts to reduce our carbon footprint by;

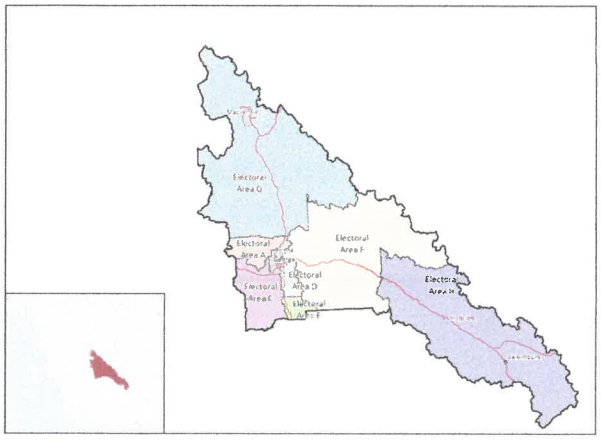
- Upgrading inefficient, atmospheric type gas fired boiler systems with high efficient condensing units in 1 school.
- Replacement of domestic hot water systems with condensing on-demand units in 1 school.
- Installed new low temperature fan coils and terminal units in 3 schools as part of planned phases of HVAC upgrades.
- Added piping insulation in various schools.

By reducing our gas emissions and electricity consumption we have reduced our carbon footprint. For 2024 and beyond we plan on continuing on the success of our past actions.

For the year 2023 our District's total emissions were 4534 tCO^2e plus 0 tCO^2e for emissions to be included for prior years.

I am pleased to present the following report outlining our efforts, to become carbon neutral.

Barry Bepple
Energy & Sustainable Conservation Coordinator



Respecting the beautiful unceded ancestral lands, culture and people of the Lheidi T'enneh First Nation, and the traditional territories of the McLeod Lake Indian Band, and Simpcw First Nation.

The boundaries of School District No.57 generally correspond to the Regional District of Fraser-Fort George, with a land area of 51,083 km^2.

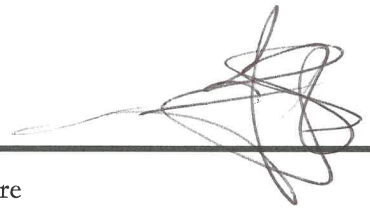
Emissions and Offsets Summary Table:

School District No. 57 GHG Emissions and Offsets for 2023 (TCO2E)	
Total $BioCO_2$	21.3
Total Emissions (tCO_2e)	4513
Total Offsets (tCO_2e)	4534
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	0
Grand Total Offsets for the 2023 Reporting Year	
Grand Total Offsets (tCO_2e) to be Retired for 2023 Reporting Year	4534
Offset Investment ($25 per tCO_2e)	$113,350 + GST

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, School District No. 57 **(the Organization)** is responsible for arranging for the retirement of the offsets obligation reported above for the 2023 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 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:



06/13/24

Signature Date

Jameel N. Aziz Superintendent

Name (Print) Title

2023 Greenhouse Gas Emissions

Out of Scope Emissions

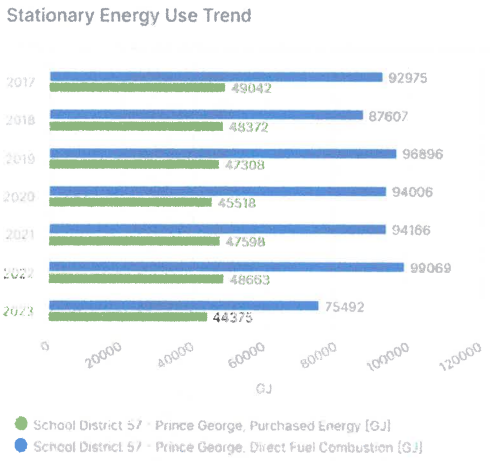
Out-of-Scope Emissions include refrigerants:
R-22 (HCFC), R-401a (HCFC), MP-39 (HCFC).

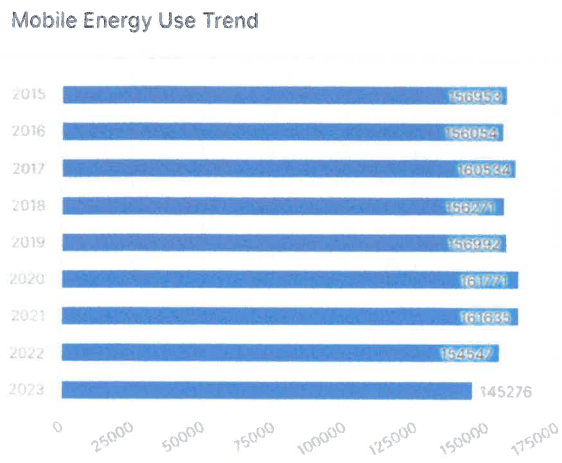
Fugitive emissions are estimated to be less than one percent of the District's emissions based on the refrigerant recharge amounts of R-134a and R-404a (HFCs) in the year 2023. Thus, these emissions are deemed to be out of scope and have not been included in the total District's greenhouse gas emissions profile.

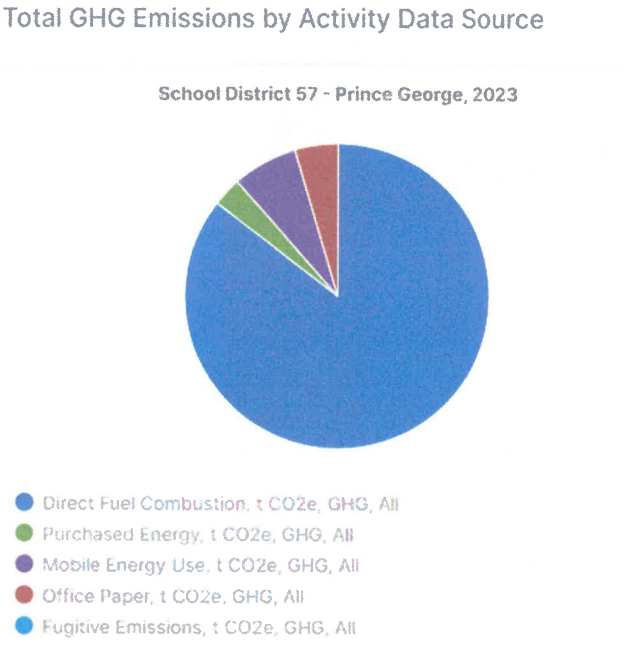
Emissions

Direct Fuel Combustion, natural and propane gas emissions, account for the majority of GHG emissions in our district at 85.4% Electricity, mobile fuel and paper only amount to 14.6% combined.

Our focus has been on reducing natural and propane gas consumption through modernization and efficiency improvements of the equipment. We are committed to ensuring all heating, ventilation and air conditioning systems in our district are operated and maintained to their standards and specifications, so that they continue to work properly. We have also taken these actions:
Increased airflow and lowered the CO2 setpoint in all buildings to 800 ppm, performed 4 filter changes per year and expanded the HVAC occupancy settings by 4 hours in all schools/sites, ensuring buildings are flushed with clean air before staff and students arrive and after they leave.
These changes help improve the indoor air quality during occupancy.







Both stationary and mobile energy use was substantially less in 2023 than the eight previous years, which is a testament to the warmer weather and the changes to how we operate our HVAC equipment. The trick will be to continue this trend in 2024.

Graphics and charts courtesy of the Clean Government Reporting Tool

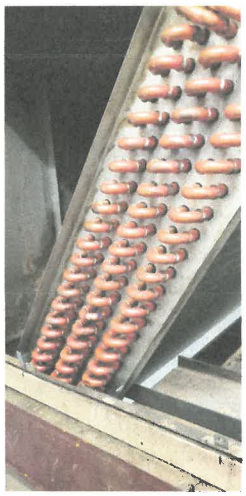
Low Temperature Terminal Units/Fan Coils/Boilers—Pineview & Peden Hill Elementary

8 Herman Nelson unit ventilators at Pineview Elementary were replaced with new Apollo unit ventilators, supplying 1200 cfm of conditioned air each, in the summer of 2023. A further 6 unit ventilators replaced a roof top multi-zone air handler at Peden Hill Elementary. Along with the ventilators, new piping, insulation, and controls were added so that each classroom has it's own ventilation unit for the space.

Boiler Replacements—Foothills Elementary

Foothills Elementary received new condensing boiler plants to replace the existing mid-efficient and atmospheric boilers. The domestic hot water heating systems were converted to utilize tankless water heaters and the building management system controls operating them were changed over. All of these systems now utilize variable frequency drives operating the hydronic system pumps to save energy. The building air handler coils were replaced with new low temperature units to fully achieve condensing temperatures to maximize the efficiency of the boiler plant.

Foothills Boilers



3 coils with 3 rows for each of the air handling units had to be fit into the existing air handlers in order to provide enough heat at lower temperatures, thereby creating a more efficient boiler plant.

Foothills—System pumps being installed during construction. New 2 way control valves allow the system to operate with less pump energy, utilizing the VFD motors.

In Conclusion

In 2023 we continued to reduce our carbon footprint by installing more efficient heating systems and then controlling the operation and schedule of them. One further boiler replacement project is planned for 2024 along with a reduction in our white fleet and the possible addition of the first ZEV for the district.

Currently the district has 2 senior secondary schools fully heated by geo-thermal energy. We believe that this technology will replace our fossil fuel consumption eventually and entirely. There are 8 geothermal ready elementary schools that have all the internal building mechanical systems upgraded to accommodate the low temperature required for heating with this technology. In the spring of 2024 we will contract a geo thermal drilling company and engineering firm to do a feasibility study on one of those 8 schools with the intent of continuing to reduce our fossil fuel reliance. Coupling these 8 school to a geo-thermal field, will provide both heating and cooling energy needed to fight climate change, improve the student-teacher comfort and save operating monies as well.

Climate change is as evident as the flow of the rivers. Consider the amount of water in the Fraser River in Prince George on the very last day of 2023 flowing under the CNR Bridge, shown on the cover of this report, we are more aware of climate change than ever before.

Sincerely,

Barry Bepple
Energy and Sustainable Conservation Coordinator
School District No. 57, Prince George

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