



2022 CLIMATE CHANGE ACCOUNTABILITY REPORT

MAPLE RIDGE - PITT MEADOWS SCHOOL DISTRICT NO.42

EXECUTIVE SUMMARY



The Climate Change Accountability Report for the period January 1, 2022 to December 31, 2022 summarizes the Maple Ridge - Pitt Meadows School District's (SD42) emissions profile, the total offsets to reach net-zero emissions, the actions taken in 2022 to reduce greenhouse gas emissions and plans to continue reducing emissions in 2023 and beyond. By June 30, 2023, the final 2022 Climate Change Accountability Report for Maple Ridge - Pitt Meadows School District No. 42 will be posted to the district website at www.sd42.ca/sustainability.

SD42 continues to pursue capital investments that will result in reducing school district's greenhouse gas emissions and support environmental sustainability education initiatives. As part of that carbon neutral commitment, the school district developed an Environmental Sustainability Plan in 2021 that outlines environmental sustainability measures to further reduce emissions from facilities, school district operations, and fleet. The goals of the Environmental Sustainability Plan are to reduce greenhouse gas emissions by 22% by 2026 and to improve building efficiency by 20% by 2026. Notable projects that were completed in 2022 were: Webster's Corner Elementary boiler upgrade, fleet decarbonization plan, HVAC optimization implementation, as well as student and staff conservation campaigns.

Harry Dhillon, Superintendent of Schools
May 17, 2023



2022 GREENHOUSE GAS (GHG) EMISSIONS

Using data from utilities, and district systems the total emissions for the district are reported here for the 2022 calendar year. These emissions are a summary of all emissions related to building use, maintenance fleet, and paper usage.

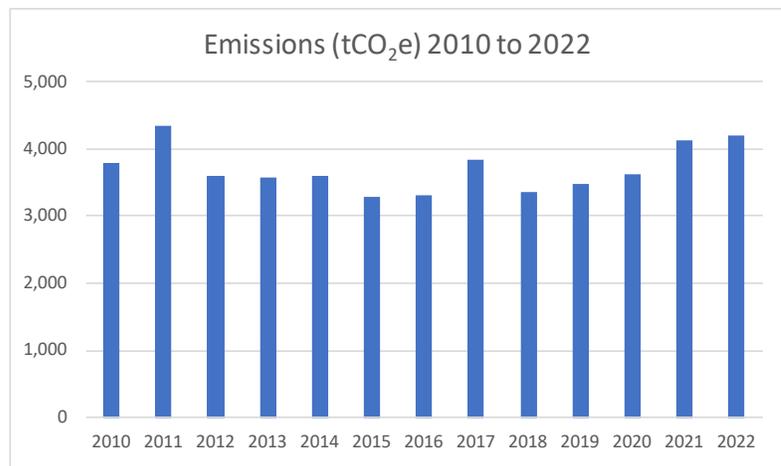
SCHOOL DISTRICT NO. 42 GHG EMISSIONS AND OFFSETS FOR 2022 (tCO ₂ e) GHG Emissions Created in Calendar Year 2022	
TOTAL EMISSIONS	4,193
TOTAL BIO CO ₂	4.85
TOTAL OFFSETS	4,193
Offset Investment (\$25 per tCO ₂ e)	
TOTAL	\$104,825

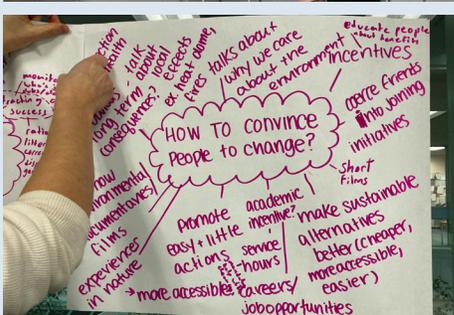
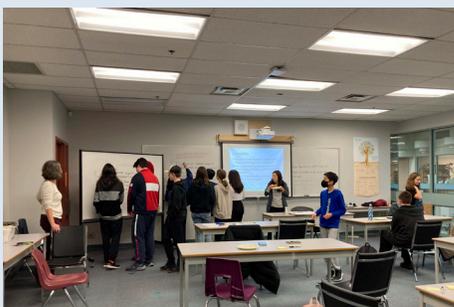
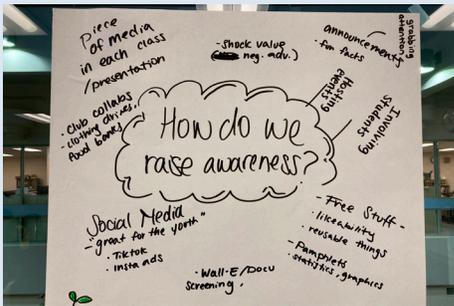
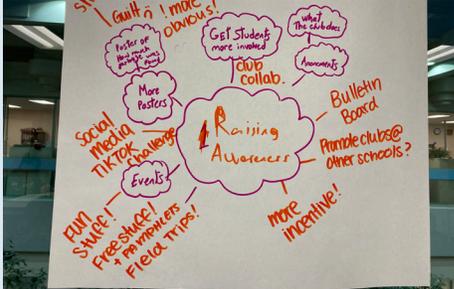
RETIREMENT OF OFFSETS:

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Maple Ridge - Pitt Meadows School District (SD42) (the Organization) is responsible for arranging 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.

EMISSIONS TRENDS

In 2022, SD42's COVID-19 response plan continued to require the operational changes to the HVAC systems to increase fresh air supply and prolong occupied ventilation schedules to curb the spread of COVID-19 indoors. These changes resulted in increased energy consumption in the school district.

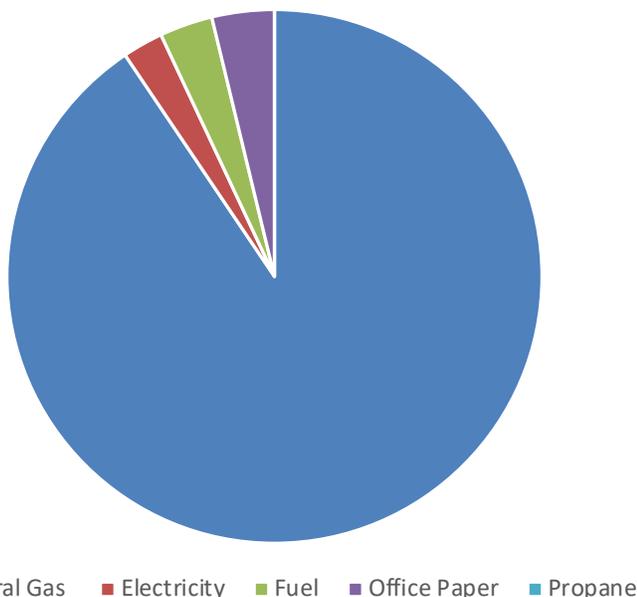




EMISSIONS PROFILE

When emissions are broken down into subsets, the largest contributor is natural gas, accounting for 91% of all emissions; paper use accounting for 4%; vehicle fuel at 3%; and finally, electricity accounting for 2% of overall emissions, as shown in the figure below.

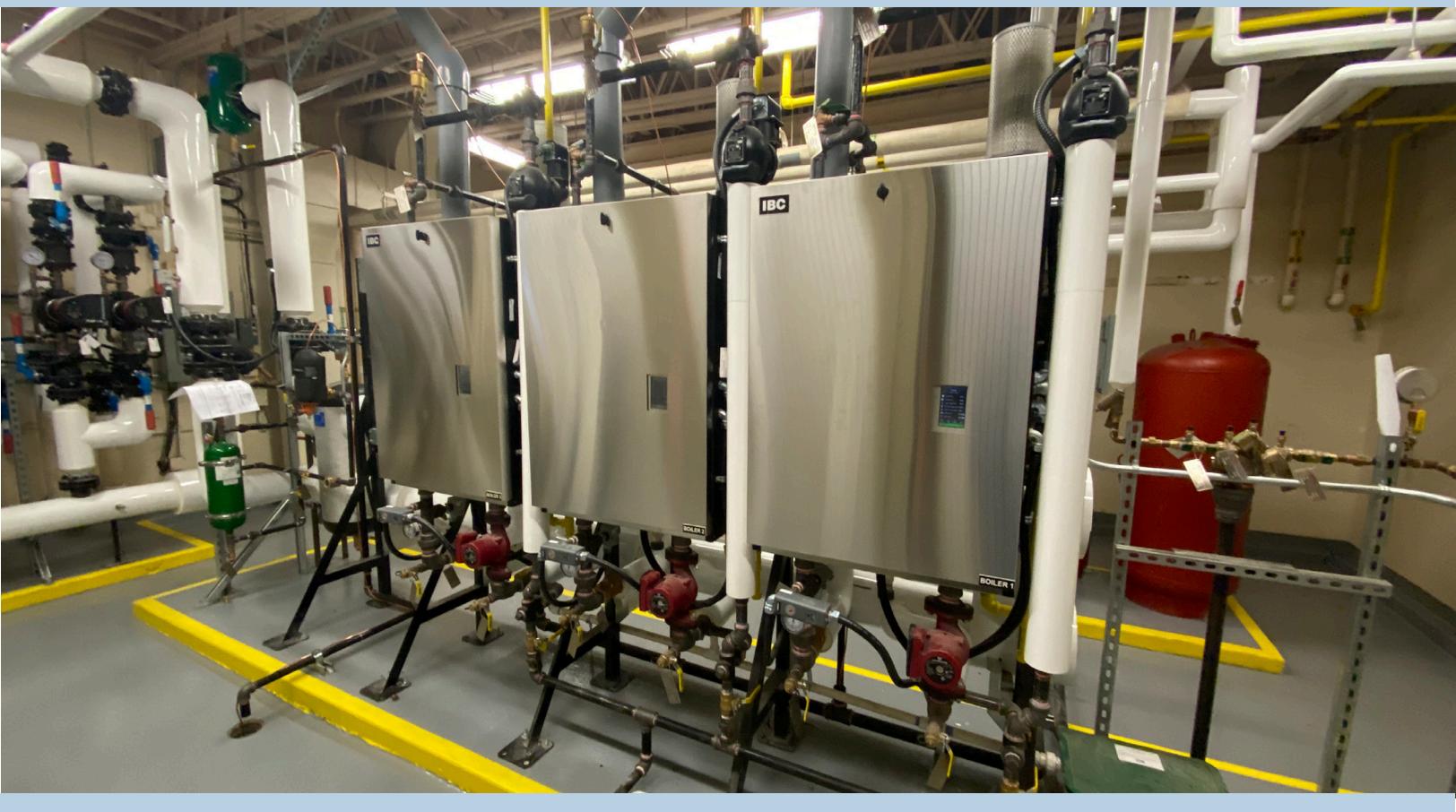
Total GHG Emissions by Activity Data Source



ENVIRONMENTAL SUSTAINABILITY PLAN

In 2022, 91% of greenhouse gas emission stem from the use of natural gas for heating school district facilities. To ensure alignment with CleanBC targets that reduce carbon emissions, the SD42's Environmental Sustainability Plan prioritizes the implementation of natural gas conservation measures or fuel switching technologies, where feasible.

If the measures are implemented as intended, the investment would lead to a 22% reduction in greenhouse gas emissions by 2026. This still leaves some improvement required towards meeting the CleanBC 2030 target of 40% but is a significant improvement over the status quo and with added effort in reducing vehicle emissions, improved technologies for fuel switching and greenhouse gas reduction strategies in new school construction planning, we could surpass this estimation in 2026. To ensure alignment with 2030 targets, continual monitoring and updates to these projects are required, with an update to this plan needed on an annual basis and a new plan created in 2026.



PROJECT SPOTLIGHT: WEBSTER'S CORNER ELEMENTARY BOILER UPGRADE

Webster's Corner Elementary was constructed in the 1970's and underwent a major addition in 2009. The building has undergone very minor renovations since the major addition and there has been no upgrading of any of the mechanical systems. The building is a single storey with two separate classrooms wings connected to the core of the building.

The building has a single gas fired heating water plant with four gas fired, natural draft boilers with a total input capacity of 1,200 MBH each and a total output capacity of 940 MBH. Before the upgrade, one boiler had failed and was disconnected from the heating system. These boilers were long past their serviceable life and required replacement. The boilers and piping system likely had an operational efficiency in the range of 55%-60%.

The boiler upgrade consisted of three new high efficiency condensing boilers that are capable of 180F heating water when required and can operate at condensing temperatures under reduced heating demand. Additionally the domestic hot water tank was replaced with a two wall mounted, high efficiency, on demand water heaters. The total estimated annual greenhouse gas emission savings is 17 tCO₂e.



SUSTAINABILITY SPOTLIGHT: GO GREEN TOGETHER CAMPAIGN

Students and teachers in the Maple Ridge – Pitt Meadows School District found new ways to reduce their environmental footprint as part of the Go Green Together Campaign.

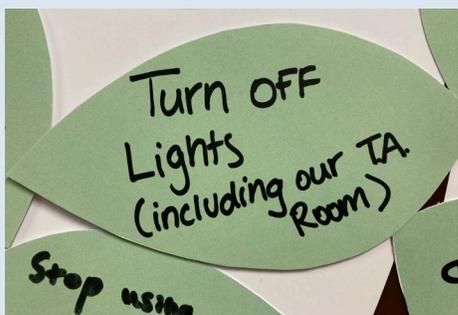
Go Green Together Campaign was a month long campaign where students reduced packaging in their lunches, found alternative ways of commuting, and shut off unnecessary lighting to conserve energy. It encouraged staff and students to think a little bit differently about their actions, whether it is waste, or the way they use energy in the buildings, or the way they commute to school. The purpose of the campaign was to become a little bit more sustainable as a school district.

Students at Eric Langton Elementary, one of the nine schools that participated, focused on finding energy-efficient ways of get to and from school every day. The other eight participating schools were: Yennadon Elementary, Hammond Elementary, Golden Ears Elementary, Albion Elementary, Maple Ridge Elementary, Pitt Meadows Elementary, Alexander Robinson Elementary and Davie Jones Elementary.

“We put posters around the school and we encouraged everyone to walk, bike, scooter, or take transit to school,” said Zarina Ahmedjonova, a Grade 7 student, who with Zayda Tahid and Jasmin Biln promoted the campaign at ELE.

“A lot of the primary classes especially were really enthusiastic,” said Tahid. “They were trying their best to come to school in a different way other than just cars.”

PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS IN 2023



- Complete the boiler upgrade at Whonnock Elementary consisting of new condensing boilers, low temperature heating upgrade and air-source heat pump that will provide substantial reductions in GHG operational emissions.
- Implement heating, ventilation and air-conditioning (HVAC) optimization projects at Albion Elementary and Garibaldi Secondary School.
- Procure the first all electric fleet vehicle for Maintenance staff and the first electric vehicle charging station at the Maintenance yard.
- Start delivering regular energy consumption reports to school administration staff via a regular e-newsletter for use in raising general awareness and examining variances from established targets.
- Improve communication about active or planned projects that have a energy conservation and/or GHG reduction component to the broader organization to raise awareness.
- Encourage participation in the Go Green Together initiative, previously Energy Cup Challenge.
- Continue collaborating with staff in the Environmental Sustainability Committee.



2022 CARBON NEUTRAL ACTION REPORT

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