



New
Westminster
Schools



2021 Climate Change Accountability Report
SD40 New Westminster

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Declaration Statement

This New Westminster School District 40 Climate Change Accountability Report for the period of 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

New Westminster is a small city and home to a broad mix of ethnic and socio-economic groups, leading to a unique diversity and vibrancy within our schools. From kindergarten through to grade 12, classrooms at New Westminster Schools boast innovative learning and academic excellence, as well as co-curricular opportunities (activities, programs, and learning experiences that complement what students are learning in school) for our learners.

From the opening of the first New Westminster High School in 1884 to the opening of the New Westminster Secondary School in 2021, New Westminster Schools has been providing quality public education to our residents. Many things have changed since then and with the new high school comes advances in energy technology have been incorporated into the building with GHG emission reductions in mind.

New Westminster school district is committed to ensuring that all of our students become self-assured and self-sufficient adults who are wise, caring, creative and flexible and able to live successfully in an ever-changing environment.

At every school in our district there are many amazing examples of how educators are working hard to get kids learning about and engaged in Climate Action initiatives: from the community gardens kids are tending at our schools to the bee hives atop NWSS. There's a lot on the go between the Green Teams at each school.

As a district, we know Climate Action Education is vital, and that the lessons need to scale with age and level of understanding, but we also know we need to consider our own environmental impact as we determine investments and opportunities.

Emission Reductions: Actions & Plans

A. Stationary Sources

The old New Westminster Secondary School built in 1949 and 1951 with its outdated boilers, lack of insulation, single-pane windows and many other factors hindered the school district's efforts to reduce GHG emissions.



The new New Westminster Secondary School, with a student population of 1900 in a grade 9 to 12 setting, opened its doors in January of 2021 with a low-temperature hydronic system and efficient heat emitter solutions comprised of three large 3500 MBtu high efficiency condensing boilers to heat the 16390 sqm building. The condensing boilers must operate with return water temperatures below 38°C to maintain rated efficiency.



Gas & water are monitored via building automation and controls heating temperatures, plus schedule sections of the building for occupancy use as required.



The modulating hot water heaters offer a 96% thermal efficiency, dramatically lowering energy use as they adjust firing rate to the specific demand with the large store tank and extra capacity storage tank. The system allows for monitoring remotely for diagnostic fault notifications and fault histories as well as controlling the set points and differential of the water heaters.

Classrooms use low-temperature convectors mounted within a casing and along the perimeters of the building, this reduces energy consumption as rooms are not heated when not in use and are quickly warmed up when they are, providing almost instantaneous heat on demand.

Larger rooms such as the theatre and shops use unit heaters that operate on the low-temperature heating water loop that generates quick, powerful airflow with even heat distribution, while also using EC motors in the unit heaters for very little fan noise and 90% less electric consumption compared to more traditional motors.

The cafeteria has new eco-friendly display coolers that use propane refrigeration that offers not only a cost savings, but with a GWP or Global Warming Potential of 3, the GHG emissions are greatly reduced compared to the old refrigerant display coolers.



For the cooking area of the cafeteria, an exhaust filtration system controller provides the exact amount of exhaust required by the individual exhaust hoods to effectively ventilate the appliance beneath, offering an energy-savings and extending the lifespan of the appliances. The touch screen can display real-time energy savings as well as providing energy savings reports. In the dishwashing area, a high-temperature rack conveyor dishwashing machine not only deals with over 200 racks per hour, it comes with an Energy Star rating, and an energy efficient booster heating and automatic pump sensing shutdown and exhaust control.

The science rooms have fume hoods and one fan unit per 4 fume hoods, each with safety alarms.



District wide, other changes were made in 2021: Portables had programmable thermostats installed and Modulars are now using a web-based program that allowed for remotely controlling room temperatures of each room in these portables, allowed staff to bump up the temperature should they stay late and have the room temperature revert back to the unoccupied temperature after a predetermined time. This decreased propane use in the portables by 25%.

Lord Tweedsmuir Elementary continued its building upgrade, having had the seismic upgrade completed in 2020, the building exterior is being brought up to the new building code. Vapour barriers and louvers installed to stop water penetration and maximise air flow, and insulation brought up to an R20.

B. Mobile Sources

In 2020, there were two level 1 EV charging stations at district sites, so the decision was made to encourage the use of electric vehicles and in anticipation of the district fleet upgrading to EVs, five (5) level 2 charging stations at four (4) schools were installed. The high school now has one level 1 and two level 2 charging stations, the maintenance yard received one level 2 charging station in anticipation for the delivery of their first EV, and Glenbrook Middle school and Herbert Spencer elementary each received one level 2 charging stations with a further number to be installed in the summer of 2022.

The first fleet electric vehicle was ordered in 2021 with an expected delivery date sometime in 2022. No formal Clean Fleet Plan has been created or instigated, but there have been some discussion concerning transition to a cleaner fleet and for now, the heavy diesel vehicle has been removed from the fleet leaving only the one light diesel vehicle still in use as a more suitable vehicle is found to replace it. It is anticipated that over the course of five years, the district fleet should be primarily electric.

The Paper reduction campaign continues with staff and one strategy was to reduce the photocopier/printer fleet from 83 down to 67 units. Paper orders are restricted to a minimum 30% recycled wood content; alternative content

paper products, such as wheat or sugar paper were reviewed with paper suppliers, but based on their advice, it was decided that any reductions of GHG emissions these types of paper created could not be realised on paper that required raw materials to travel across the globe for manufacture before crossing again for the North American market and that these paper types could not be superior for GHG emission reductions where wood by-products were already available locally.

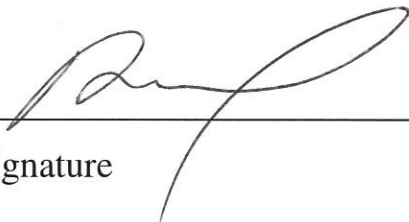
Executive Statement

Emissions and Offset Summary Table

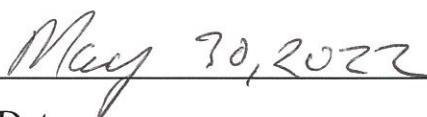
New Westminster School District 40 - 2021 GHG Emissions and Offsets	
Total Emissions (tCO ₂ e)	1451
Total BioCO ₂	2.43
Total Offsets (tCO ₂ e)	1449
Adjustments to GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for 2020 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2021 Reporting Year	1449
Offset Investment (\$25 per tCO ₂ e)	\$36225

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, School District 40 New Westminster 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). School District 40 New Westminster hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (the Ministry) ensuring that these offsets are retired on School District 40 New Westminster's behalf, School District 40 New Westminster 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.



Signature



Date



Name (please print)



Title