



2018 Carbon Neutral Action Report

New Westminster School District 40

Where students love to learn

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DECLARATION STATEMENT

This Carbon Neutral Action Report for the period January 1st, 2018 to December 31st, 2018 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2018 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2019 and beyond.

By June 30, 2019 New Westminster School District's final *Carbon Neutral Action Report* will be posted to our website at newwestschools.ca

OVERVIEW

In the Kindergarten to Grade 12 system in 2018, there were approximately 7,500 students, including::

- 298 Aboriginal students;
- 1,026 English Language Learner (ELL) students;
- 993 French Immersion students; and,
- 524 students with identified Special Needs.

New Westminster School District is a diverse, growing district with 8 elementary schools, 3 middle schools and one secondary school, along with our School Board Office building.

On behalf of School District 40, we are pleased to present our Carbon Neutral Action Report for 2018. This School District is committed to lower greenhouse gas emissions through leadership, developmental planning and educating our future generations about the importance of sustainability. The "environmental clubs" at various schools engage in conservation tasks including composting, recycling, turning out the lights and take part in various sustainability training workshops.

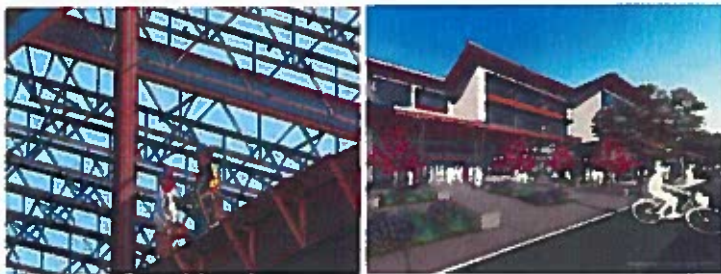
Through major capital funding, our district has begun the development of two replacement schools which will see further improvements to our GHG emission reductions. Also, School Enhancement Program funding has allowed the district to complete many emission reducing projects which will lower our carbon footprint of older inefficient building systems that do not meet today's building efficiency standards.

PAST LEED GOLD STANDARDS

New Westminster School District is proud to have 1 Leed Gold Standard Schools and 1 Leed Gold Standard Board Office building built and completed in 2016, plus 1 Leed Gold Standard School built in 2014.

NEW CONSTRUCTION

In 2016, New Westminster School District received Capital Ministry funding for the replacement of New Westminster Secondary School and in 2018 Graham Construction broke ground on the site. The new school will accommodate 1,900 grades 9 to 12 students in a 21st century learning environment that meets today's standards for modern learning, safety and accessibility, while incorporating the latest sustainable energy management systems. The project is scheduled to open in September 2020 with a Leed Gold Standard as well.



Quick Facts

- New NWSS opens - September 2020
- West Coast Modern design
- LEED Gold standard
- Wood First Initiative
- 20,000 m² three-storey building
- 520 m² Grand Commons foyer
- 280-seat Performing Arts Theatre
- At least 58 classrooms
- 7 Collaborative Learning Spaces

In 2018 the replacement funding for the aging Richard McBride Elementary School was announced and has a sustainable design that will minimize impacts on the environment and aim for Leed gold standard. Construction is in the consultation and design phase with completion scheduled for 2021.

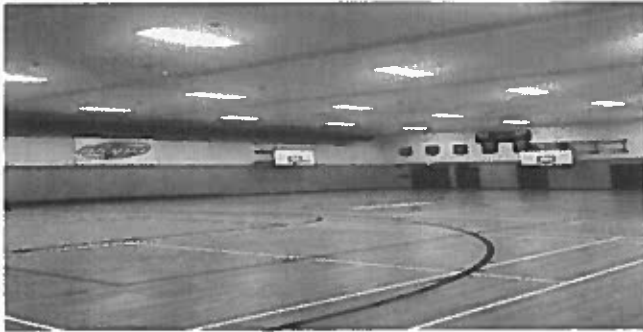
2018 GHG EMISSION REDUCTION INITIATIVES



Mechanical upgrades

- Full direct digital controls at 5 schools
- Boiler plant replacement at Glenbrook Middle School,
- All gas fired inefficient furnaces replaced with hot water unit ventilators installed at Connaught Heights Elementary
- Implementation of DDC software to monitor mechanical systems and temperatures to optimize energy efficiency
- Installed and replaced 5 portable furnaces with high efficiency furnaces
- Replacement of hot water circulating pumps with variable speed drive models to conserve energy and water consumption

Electrical Upgrades



- Herbert Spencer Elementary classroom retrofit to LED tubes
- Glenbrook Middle School gym retrofit to LED tubes
- Lord Tweedsmuir Elementary gym retrofit from T8 tubes to T5 LED tubes

Technology upgrades

New Westminster School District has moved towards implementing a shift from paper reporting to web-based; the district's maintenance department now uses a web-based program for its work order system, school offices use online attendance and is implementing a web-based student portfolio system, eliminating the need to print individual report cards.

To reflect an ever-changing world, course curriculums and means of engaging students in learning, New Westminster Senior Secondary School and Fraser River Middle School now subscribe to digital textbooks instead of purchasing class sets of print teaching materials and textbooks. Each teacher in New Westminster School District has been given an electronic device to provide a clear picture of student progress using assessment programs such as Freshgrade to allow students and parents to view their progress in the classroom and seamlessly move students from one classroom or teacher to another.

To reduce paper consumption and eliminating unnecessary copying of instructional materials, New Westminster Secondary School closed the print shop resulting in a 44% reduction.

PLANS TO CONTINUE REDUCING EMISSIONS IN 2019 AND BEYOND

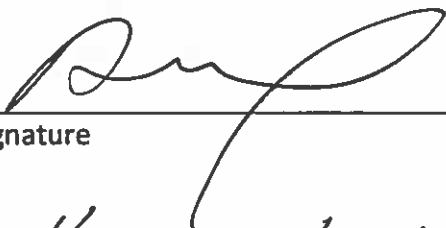
- Replacement of 12 outdated gas fired rooftop units to hot water rooftop air handlers at Glenbrook Middle School
- Replacement of boiler system at Herbert Spencer Elementary and installing high efficiency condensing boilers for heating and domestic loops
- Continue monitoring building efficiencies through our DDC systems
- Installation of classroom occupancy sensors for heating and lighting
- Continue retrofitting our lighting to LED
- Continue education to schools staff regarding the importance of carpooling
- Continue installing roofing membranes with insulation to keep thermal energy in buildings
- Continue 3 bin program at all schools and education to schools about the importance of reducing garbage and encouraging recycling or reduction of waste
- Our board continues to provide a learning environment where sustainability practices are encouraged and align with the vision, mission and values

School District No. 40 (New Westminster) GHG Emissions and Offset for 2018 (tCO ₂ e)	
GHG Emissions created in Calendar Year 2018	
Total Emissions (tCO ₂ e)	1,796
Total BioCO ₂	2.99
Total Offsets (tCO ₂ e)	1,793
Adjustments to GHG Emissions Reported in Prior Years	
Total Emissions (tCO ₂ e)	1
Total Offsets (tCO ₂ e)	1
Grand Total Offsets for the 2018 Reporting Year	
Grand Total Offsets Required (tCO ₂ e)	1,794
Total Offset Investment	\$44,850

Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, School District No. 40 (New Westminister) is responsible for arranging for the retirement of the offsets obligation reported above for the 2018 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy 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:

	<i>May 6 / 2019</i>
Signature	Date
<i>KARIM HACHRAF</i>	<i>SUPERINTENDANT/CEO</i>
Name (please print)	Title

Part 1: CNAR Survey

1. General Information

Name: Sue McMillan

Contact Email: smcmillan@sd40.bc.ca

Organization Name: New Westminster Schools

Sector: School District

Role - Please select your role(s) below.

If more than one individual completed the survey, multiple categories may be selected:

Energy Manager: No

Sustainability Coordinator: No

Administrative Assistant: Yes

Facilities/Operations Manager/Coordinator: Yes

CEO/President/Exec Director: No

Treasurer/Accounting: No

Superintendent: No

Other - Please Specify: Director of Capital Projects

A. Stationary Sources (e.g. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

1. Actions taken by your organization in 2018 to support emissions reductions from buildings.

a) Do you have a strategy to reduce emissions from stationary sources?

Yes

If yes above, what are the main goals?: Mechanical upgrades (Lord Kelvin Elementary); replace fluorescent light tubes with LED tubes; adding occupancy sensors for heating and lighting; install hot-water on demand system, electric cars are being looked at to add to fleet vehicles

b) Whether you have a strategy or not (1.a), briefly describe your organization's plans to continue reducing emissions from stationary sources:

I. Over the medium-term term (1-5 years)

Mechanical upgrades with high efficiency condensing boilers; new controls for occupancy sensors and new unit ventilators. Lord Tweedsmuir seismic upgrade, with new cladding and windows; up-grading from hot water tanks to on-demand hot water systems; up-grade from gas-fired rooftop heating units to hot water heating units at Glenbrook Middle School; New Westminster Secondary School replacement.; new school replacement.

II. Over the long term (6-10 years)

Continue mechanical up-grades, LED replacement and hot water on demand for more schools.

c) Please describe your strategy's goals (if any) related to [energy audits](#).

Mechanical engineer will look at and assess our buildings to make improvements on energy efficiency of mechanical plant. Boiler changes, air handler change, or unit ventilator changes as required or suggested

I. What % on average of your building portfolio has an energy audit completed each year (if any)? : 10

d) Please describe your strategy's goals (if any) related to building retrofits.

We will upgrade our lighting systems to LED as much as possible, we will install occupancy sensors on both the mechanical and lighting system as much as possible, we are looking at changing out outdated single pane windows to replace with double pane at our schools when budget allows, we install faucets with automatic shutoffs when installing new faucets, when we install new roofing on flat roofing insulation gets installed,

I. What % on average of your building portfolio is retrofitted each year in the following categories (if any) - click [here](#) for further information:

Minor retrofits (e.g., low cost, easy to implement measures including caulking, lighting, adding roof insulation, etc.) (%): 10

Major retrofits (e.g., replacing windows and doors, equipment replacement such as boilers, etc.) (%): 10

Deep retrofits (e.g., replacing roof, replacing the heating, ventilation and air-conditioning system with a renewable technology like a ground-source heat pump, etc.) (%): 10

e) Please describe your strategy's [re/retro-commissioning](#) goals (if any)?

Mechanical engineer assess our building's mechanical system bring energy efficiency up to a higher standard. The buildings typically receive new mechanical equipment and controls and is commissioned

I. What % on average of your building portfolio do you recommission each year?: 10

f) Do you keep records of Refrigerant gases category and refilling volumes?

No

g) How many newly constructed buildings received at least LEED Gold certification in 2018 : 1

I. How many newly constructed buildings did not receive LEED Gold certification?: 0

II. Please explain why LEED Gold certification was not obtained.

New LEED Gold Certification on Fraser River Middle School

B. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:

3. Actions taken by your organization in 2018 to support emissions reductions from mobile sources.

a) Do you have a strategy to reduce emissions from mobile sources?

Yes

I. If yes, what are its goals?

Explore feasibility and availability of electric/hybrid fleet vehicles.

b) Whether you have a strategy or not (3.a), briefly describe your organization's plans to continue reducing emissions from mobile sources:

I. Over the medium-term term (1-5 years)

Replacing older fleet vehicles with electric or hybrid vehicles.

II. Over the long term (6-10 years)

Replace all fleet vehicles with electric or hybrid powered vehicles and replaced smaller powered grounds equipment with four stroke powered, or equivalent efficiency, equipment.

c) How many fleet vehicles did you purchase from the following categories:

Gas/diesel vehicle: 1

I. If you purchased new gas/diesel vehicles, can you briefly explain why vehicles from the other categories were not chosen?

Sourced the current market for suitable vehicles in both electric, electric hybrid and natural gas/propane, but found none suitable for use. We will continue to explore electric and/or hybrid options to replace fleet vehicles.

d) How many existing EV charging stations does your organization have in each category:

level 2: 3

level 3: 0

How many level 2 stations (if any) are specifically for your fleet vehicles: 0

How many level 3 stations (if any) are specifically for your fleet vehicles: 0

e) How many EV charging station(s) did you install in 2018 in each category:

level 2: 3

level 3: 0

How many level 2 stations (if any) were installed specifically for your fleet vehicles: 0

How many level 3 stations (if any) were installed specifically for your fleet vehicles: 0

4. Please indicate the number of the vehicles in the following vehicle classes that are in your current fleet (including any purchased in 2018):

Definitions:

- Light duty vehicles (LDVs) are designated primarily for transport of passengers <13 and GVWR<3900kg
- Light duty trucks (LDTs) are designated primarily for transport of light-weight cargo or that are equipped with special features such as four-wheel drive for off-road operation (include SUVs, vans, trucks with a GVWR<3,900kg)
- Heavy duty vehicles (HDV) includes vehicles with a GVWR>3,900 kg (e.g. ¾ tonne pick-up truck, transport trucks)

a) Light duty vehicles (LDVs)

Electric Vehicles – EV - (e.g., Nissan Leaf, Chevy Bolt): 0

“Plug In” Electric Vehicle – PHEV -- (e.g., plug-in Prius, Chevy Volt) : 0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Toyota Prius, Toyota Camry hybrid): 0

Hydrogen fuel cell vehicles: 0

Natural gas/propane: 0

Gas/diesel: 3

b) Light duty trucks (LDTs)

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV: 0

Hybrid vehicles – HEV – (e.g., non “Plug In”- older Ford Escape Hybrid, older Chevrolet Silverado pickup hybrid etc): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 0

Gas/diesel: 16

c) Heavy duty vehicles (HDV)

Electric Vehicles – EV : 0

“Plug In” Electric Vehicle – PHEV : 0

Hybrid vehicles – HEV – (e.g., non “Plug In”): 0

Hydrogen fuel cell vehicles: 0

Natural Gas/propane: 0

Gas/diesel: 1

5. Please indicate the number of the vehicles you plan to replace in your fleet:

How much do you budget per LDV?: 0

How many LDVs do you plan to procure annually over the next 5 years?: 0.5

How much do you budget per LDT?: 0

How many LDTs do you plan to replace annually over the next 5 years?: 0.5

How much do you plan to spend per HDV?: 0

How many HDVs do you plan to replace annually over the next 5 years?: 0

C. Office Paper: Indicate which actions your PSO took in 2018:

6. Actions taken by your organization in 2018 to support emissions reductions from paper supplies.

a) Do you have an Office Paper strategy?

Yes

I. If yes, what are its goals?

Stopped purchasing print textbooks at the New Westminster Secondary School, gave a laptop and Chromebook to every district teacher and purchased class sets of Chromebooks for all schools. Closed the district print shop and educated staff for use of electronic and online devices and computer programs over paper copies of instructional materials, thereby reducing our office paper consumption by 44% in 2018.

b) Whether you have a strategy or not (6.a), briefly describe your organization’s plans to continue reducing emissions from paper use:

I. Over the medium-term (1-5 years)

Our goal is to have every student with digital access to learning materials with a technology update every four years, as well as having reducing school production of print materials for office use and for sending information to the students' parents, ie: digital portfolios instead of printed report cards, etc.

II. Over the long term (6-10 years)

Reduce the use of paper or print material by 90%.

c) Have an awareness campaign focused on reducing office paper use

Yes

d) Purchased alternate source paper (bamboo, hemp, wheat, etc.)

No

e) Other actions, please specify.

By continuing to reduce paper consumption through the introduction of electronic devices for each student and classroom, laptops for staff, online accessible report cards, electronic attendance sheets.