



DOUGLAS COLLEGE

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2021 PSO Climate Change
Accountability Report





2021 PSO Climate Change Accountability Report

Executive Summary

One of Douglas College's core values is that we take the long view. We recognize that decisions we make today will have an impact for many decades to come, so we work hard to make ours count. As a significant public sector organization, the College has a responsibility to be environmentally responsible, and to *be seen* to be environmentally responsible, to educate by example, and to help mitigate the effects of global climate change. This report highlights our key actions in 2021 towards these goals.

In addition to the actions highlighted, Douglas College continues to investigate opportunities provided by organizations such as BC Hydro's Power Smart programs, FortisBC, the Public Sector Energy Conservation Agreement (PSECA), Energy Canada (Enercan), and the Ministry of Advanced Education and Skills Training. These relationships provide access to a variety of resources to assist us in the development of a college-wide environmentally sustainable energy management plan that focuses on achievable, sustainable and measurable results.

Through these and other relationships with experts and community partners, we are able to monitor our progress against our plan, and update our procedures based on experience gained. Environmental sustainability is an iterative process, and Douglas College continues to learn and improve every year.

Declaration statement: This Climate Change Accountability Report for the period January 1, 2021 to December 31, 2021 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2021 to reduce our greenhouse gas emissions, and our plans to continue reducing emissions in 2022 and beyond.

By June 30, 2022, a link to Douglas College's final Climate Change Accountability Report will be posted to our website at www.douglascollege.ca.



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Overview

Emission Reductions: Actions & Plans

Key initiatives taken between January 1, 2021 and December 31, 2021 to reduce greenhouse gas emissions include:

A. Stationary Sources (e.g. buildings, power generation)

New Westminster campus

- Replaced 11 pneumatic VAV boxes with electronically controlled units that allow better control of the heat in the areas served.
- Replaced Chillers 1 & 2 (Phase 2) to provide increased efficiency and greater reliability. New adaptive controls predict operational needs throughout the day, and new compressors reduce total energy consumption by 40%.
- Lighting upgrades:
 - Retrofitted over 100 hallway fixtures to LED including the addition of motion detectors that dim lights or shut them off when room is unoccupied.
 - The stagecraft hall now has new LED fixtures that dim or shut off automatically.
 - Upgraded lighting in the chiller and stagecraft rooms to LED.
- Approximately 488 metres of water supply line were upgraded to remove lead solder and fix small leaks.
- 5,534 Kilograms of scrap metal were collected, shredded and recycled.

Coquitlam campus

- Lighting upgrades:
 - Upgraded the lighting in stairwells 1, 2, 4 & 6 to LED complete with motion detectors that lower the lighting levels to 50% when not in use.
- Several of the 3rd floor offices were also upgraded to LED fixtures with motion detectors controlling them.



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- Eleven Low-Flow faucets fitted in washrooms. (Standard faucet uses approx. 7.6 Litres/min. Low-Flow uses 1.33 Litres/min. A reduction in water usage of approximately 82%.)
- Obsolete furniture was disassembled and sorted for recycling, resulting in two truckloads of metal recycling.
- Added five new architect-designed green spaces to Coquitlam campus.

Both campuses

- Approximately 130 Kilograms of batteries were removed from the College and recycled by Maple Leaf Disposal.
- Food waste was composted and tracked. Waste cooking oil was recycled.
- Increased locally-produced food products to 31.9% including more plant-based meals.
- Plastic straws were phased out from all food outlets.
- Four more water bottle filling stations were installed, bringing the total to 34 on the College's campuses.
- Donations of approximately 3,829 Kilograms of electronic waste, including computers, printers, microwaves and TVs were made to Electronic Recycling Association, Vancouver for re-use or recycling.
- Donations of 196 electronic items including laptops, phones and tablets were made to The Purpose Society and repurposed for use by local disadvantaged people.

Plans to continue reducing emissions 2022 and beyond

- Add carbon monoxide sensors to control the fans in the New Westminster campus parkade.
- Perform an energy audit for the A and B buildings at Coquitlam campus.
- Where necessary, convert control of building exhaust fans from interlocked control to scheduled control based on occupancy. Where required, add DDC monitoring to exhaust fans to allow for improved return fan airflow tracking.
- Incorporate Climate Resilience features into the building envelope project for buildings A, B and the Daycare in Coquitlam.
- Incorporate Climate Resilience features into the building envelope design for future projects in New Westminster:
 - Upgrade the walls and roof for the HR renovation.
 - During re-roofing projects, increase roof insulation thickness where building architecture allows.



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- Continue to convert the remaining 151 pneumatic VAV controls to DDC at the New Westminster campus.
- Continue lighting upgrades and installation of occupancy sensors, such as conversion of a further 300 pot lights to LED on Coquitlam campus.
- Continue implementing Energy Conservation Measures (ECMs) identified in the ASHRAE level 2 audit (e.g. lighting upgrades, occupancy sensors).
- Upgrade science labs, including fume hoods and exhaust.
- Upgrade main air handling systems to allow for higher capacity and increased efficiency.
- Replace failing compact fluorescent pot lights in C/D building to LED.
- Replace the hall lights to LED in various field bases in New Westminster and fitting motion detectors. Some of the lights will be tied to the emergency generators allowing for removal of the existing battery-powered emergency lights.
- Replace the older 4-tube fluorescent fixtures in the fitness and movement areas with energy efficient LED fixtures.
- Replace the induction lights in the atrium area with LED.
- Introduce fibre-based cutlery, increase use of reusable tableware in all food service outlets.
- Further increase plant-based meals including more made from fresh ingredients.
- Engage a consulting firm to review the building's mechanical system infrastructure and develop a plan for sequential upgrading that will lead to energy and greenhouse gas reduction targets over the next several decades.
- Develop a solid waste plan for the College, as well as site plans, conceptual designs, and cost projections for primary waste areas at both campuses.

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

- Car sharing options for students and employees for nine cars using vehicles from car sharing organizations.
- The College's EV charging stations provided 56,904 KW-h of clean energy for EV drivers – equivalent to approximately 6,445 litres of gasoline.
- Introduced a Work from Home policy, reducing trips to/from campus.

Plans to continue reducing emissions 2022 and beyond

- The addition of 8 EV charging stations in New Westminster and 3 in Coquitlam for a grand total of 30 at Douglas College's campuses.
- Replacement of the College van to an electric vehicle, when a suitable option becomes available.



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C. Paper Consumption

- Promoted a College-wide reduction in paper usage.

Plans to continue reducing emissions 2022 and beyond

- Continue to investigate options to reduce paper consumption.

D. Other – Policy & Leadership

- Became a member of the Feed BC program.
- A Climate Action Strategy Steering Committee was formed in response to the College's Strategic Plan 2020-2025
- Update of the procurement policy and RFP template to include sustainable procurement.

Plans to continue reducing emissions 2022 and beyond

- Gain membership of STARS Program
- Update the College Policy on Environmental Sustainability.

Douglas College is committed to researching and initiating, where feasible, short and long-term initiatives to promote environmental sustainability while meeting provincially mandated legislation for the reduction of Greenhouse Gas emissions.

The College will continue to pursue sustainability initiatives and encourages employees to think creatively and to act on reducing consumption in the workplace and take on the challenge of modeling new personal behaviour around sustainability.

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Emissions and Offset Summary Table

Douglas College's GHG Emissions and Offset for 2021 (tCO_{2e})*	
GHG Emissions created in Calendar Year 2021:	
Total Emissions (tCO _{2e})	1701
Total BioCO ₂	0.172
Total Offsets (tCO _{2e})	1701
Adjustments to GHG Emissions Reported in Prior Years:	
Total Offsets (tCO _{2e})	-1
Grand Total Offsets for the 2021 Reporting Year:	
Grand Total Offsets (tCO _{2e}) to be Retired for 2021 Reporting Year	1700
Offset Investment (\$25 per tCO _{2e})	\$42,500



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Retirement of Offsets

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, Douglas College 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. 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.

Executive Approval



Kayoko Takeuchi, VP Administrative Services and CFO

May 31, 2022

Date