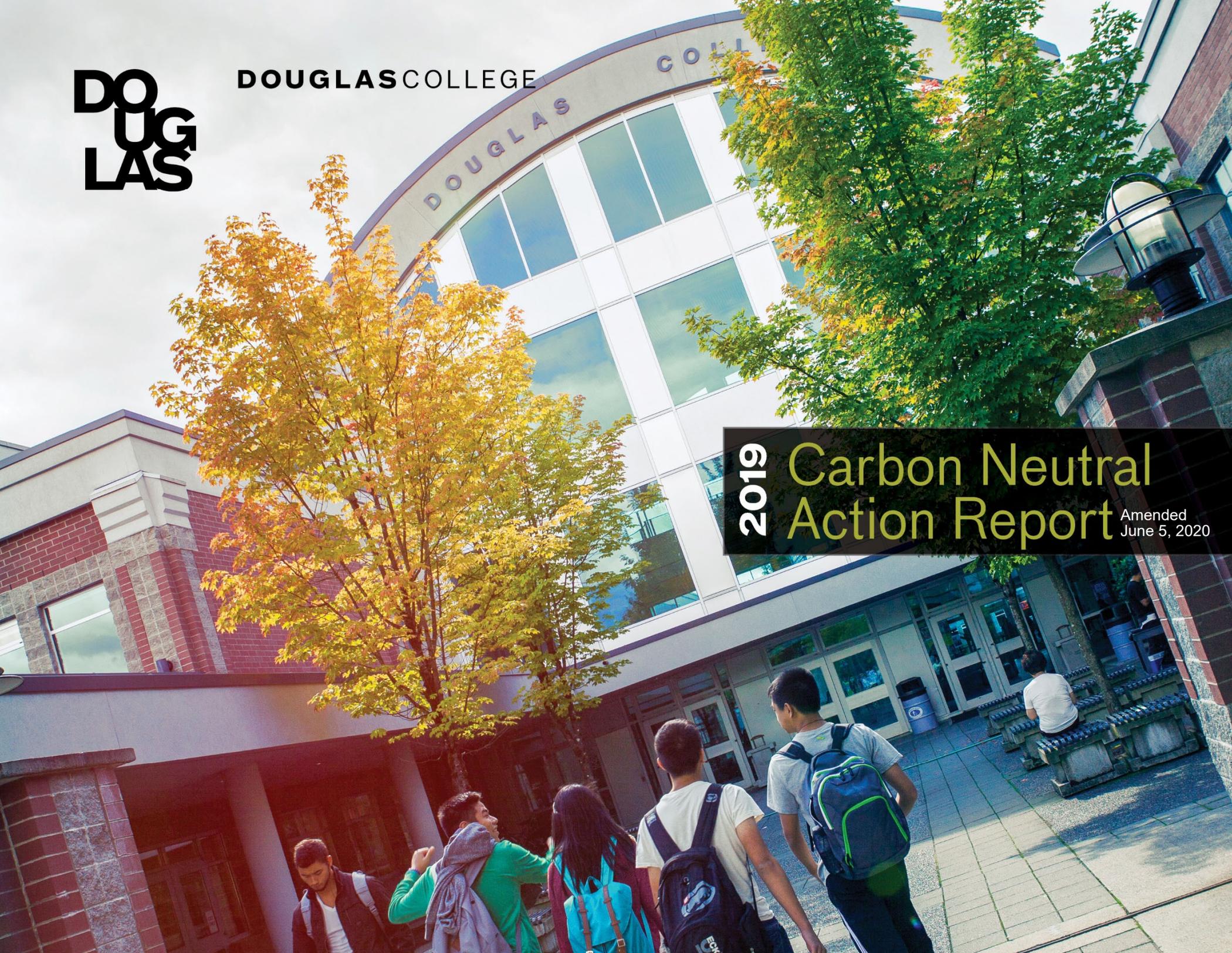




DOUGLAS COLLEGE

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2019 Carbon Neutral
Action Report Amended
June 5, 2020





2019 Carbon Neutral Action 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 2019 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, the Public Sector Energy Conservation Agreement (PSECA), Energy Canada (Enercan), and the Ministry of Advanced Education, Skills & Training. These relationships provide access to a variety of resources to assist us in the development of a college-wide environmental 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 Carbon Neutral Action Report for the period January 1st, 2019 to December 31st, 2019 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2019 to reduce our greenhouse gas emissions, and our plans to continue reducing emissions in 2020 and beyond.

By June 30, 2020 Douglas College’s final *Carbon Neutral Action Report* will be posted to our website at www.douglascollege.ca.



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Emission Reduction Activities in 2019

Key initiatives taken between January 1, 2019 and December 31, 2019 to reduce greenhouse gas emissions include:

New Westminster campus:

- Upgrade of twenty-four pneumatic VAV boxes to electronic.
- Installation of LED and low voltage lighting system and occupancy settings with classrooms on levels 1, 2, 4, 5 and 6.
- Car sharing options for students and employees for a total of nine cars at this campus.
- Installation of additional hand dryers in washrooms to reduce use of paper towels.
- Replacement of single pane exterior windows with double-glazed, low-e windows.
- Replacement of heating HW boilers with condensing high efficiency boilers.
- Replacement of domestic HW boilers with condensing high efficiency boilers.
- Upgrade of library lighting to LED and occupancy sensors, and upgrade of VAV systems.



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Both campuses:

- Douglas College Printing Working Group focused on paper reduction activities at the College.
- Significant increase of plant based food options.
- Elimination of bottled water sales at all campus buildings.
- Recycling of Styrofoam to local depot.
- Re-use of shipment boxes for internal moves.
- Developed a planning guide for EV charging infrastructure.

Plans to Continue Reducing Greenhouse Gas Emissions 2020 and Beyond:

- Install additional EV charging stations.
- 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 air flow tracking.
- Incorporate Climate Resilience features into the building envelope for projects such as:
 - Coquitlam – building envelop replacement for buildings A, B and the Daycare
 - New Westminster – upgrade of the building wall insulation for the Centralized Student Service renovation
 - New Westminster – upgrade of the walls and roof for the HR renovation



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- Continue to convert pneumatic VAV controls to DDC at the New Westminster campus.
- Continue with lighting upgrade projects and include occupancy sensors, such as:
 - Upgrade Carnarvon parkade stairwell lighting (pot & exit lights).
 - Coquitlam parking – add occupancy sensors to parking lot to turn off non-emergency lights when the lot has low occupancy.
 - Coquitlam parking – convert surface parking lot pole lights from 250 watt HPS to LED, sidewalk pole lights from 100 watt HID to LED.
 - Coquitlam – convert 300 pot lights to LED.
- For the New Westminster underground parking lot, add carbon-monoxide sensors to control exhaust fans. They presently run continuously based on occupancy
- Continue implementing ECMs identified in the ASHRAE level 2 audit (i.e., lighting upgrades, occupancy sensors, etc.).
- Replacement of plastic straws with paper straws.
- Upgrade science labs including fume hoods and exhaust.
- Upgrade main air handling systems (to allow for higher capacity and increased efficiency).
- Re-writing of the College Policy on Environmental Sustainability.



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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.

Emissions and Offset Summary Table:

Douglas College’s GHG Emissions and Offset for 2019 (tCO₂e)*	
GHG Emissions created in Calendar Year 2019:	
Total Emissions (tCO ₂ e)	1,519
Total Offsets (tCO ₂ e)	1,519
Adjustments to GHG Emissions Reported in Prior Years:	
Total Emissions (tCO ₂ e)	0
Total Offsets (tCO ₂ e)	0
Grand Total Offsets for the 2019 Reporting Year:	
Grand Total Offsets (tCO ₂ e)	1,519

*Ministry of Environment and Climate Change Strategy directive issued March 31, 2020, the above table reports the 2018 GHG emissions to be temporary used for 2019 emissions reporting.



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Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, *Douglas College* is responsible for arranging for the retirement of the offsets obligation reported above for the 2019 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 Approval

Kayoko Takeuchi, VP Administrative Services and CFO

June 5, 2020

Date

Confirmation number: 00C5D13A

Submitted date: 2020-06-30 12:02:25 Pacific Daylight Time

Carbon Neutral Action Report Survey - 2019

Public sector organizations (PSOs) are required to complete this survey, in addition to a Carbon Neutral Action Report (CNAR) as mandated by BC's [Climate Change Accountability Act](#) and the [Carbon Neutral Government Regulation](#).

Due to the COVID-19 pandemic, the following [Directive](#) was issued on March 31, 2020. Certain deadlines were also extended for the 2019 reporting year (see below).

March 31, 2020 Directive:

Under my authority as the Director for the purposes of the Act, and under the authority delegated to me in Section 6 of the Carbon Neutral Government Regulation, I hereby direct that all ministries and Public Sector Organizations covered by the Carbon Neutral Government requirement shall use their 2018 GHG emissions as a temporary estimate for their actual 2019 GHG emissions, for the purposes of the 2019 Carbon Neutral Action Reports and 2019 Carbon Neutral Government reporting required under the Climate Change Accountability Act.

Neil Dobson, Executive Director, Clean BC Implementation
Climate Action Secretariat

Although 2018 emissions data will be used as a placeholder for 2019, **all other (qualitative) components of the CNAR and CNAR Survey are to be completed with information from 2019 (e.g., actions taken or planned to reduce emissions)**. The only change to the survey is that the deadline was extended by one month to June 30, 2020.

This survey is divided into two parts:

Part 1 - Will be made public on the Climate Action Secretariat (CAS) [website](#) after June 30, 2020; however, it will not be appended directly to each individual PSO CNAR as was done in previous years. This section collects details about actions taken or planned to reduce emissions and is intended to supplement the legislative requirements in your CNAR.

Part 2 - Will NOT be made public. Information you provide in this section is important and will be used internally to help CAS staff with planning for emissions reduction and climate change adaptation initiatives. Although not required, PSOs are highly encouraged to complete Part 2.

Note: Survey progress can be saved at any time by clicking the "Save and continue later" button at the bottom of each page. A new window will open and you will be asked to provide your name and email. An email will be sent to you from Carbon.Neutral@gov.bc.ca with the subject line: "Questionnaire Link", which will include a hyperlink for the "Project: Carbon Neutral Action Report Survey – Broader Public Sector 2019". You can then continue responding at another time or email the hyperlink to a colleague to complete remaining section(s).

May 29, 2020	<ul style="list-style-type: none">The final, signed version of the CNAR (or Small Emitters Form) must be submitted by email to: Carbon.Neutral@gov.bc.ca
June 30, 2020*	<ul style="list-style-type: none">Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG website and each PSO is encouraged to post the report on their website.The CNAR Survey (optional for Small Emitters) must be completed and submitted online. *Deadline extended from May 29, 2020.<u>All offset invoice payments must be submitted to CAS.</u>
Sept 30, 2020*	<ul style="list-style-type: none">Clean Government Reporting Tool (CGRT) Data Entry must be completed for the 2019 reporting year.

	*Deadline extended from April 30, 2020.
Oct 15, 2020*	<ul style="list-style-type: none"> • Self-Certification checklist must be completed, signed and submitted by email to: Carbon.Neutral@gov.bc.ca. *Deadline extended from May 15, 2020.

*See the [Carbon Neutral Government – Program Requirements website](#) for more information on program requirements, timelines and templates.

PART 1 - Included as part of your public CNAR report.

Reminder that Part 1 will be made public on the CAS [website](#).

Contact Name:	<i>Chris Gardner</i>
Contact Email:	<i>gardnerc@douglascollege.ca</i>
Organization Name:	<i>Douglas College</i>
Role – Please select the best category for your current role with your organization. If more than one individual completed the survey, multiple categories may be selected:	Other - Please Specify: <i>Director, Facilities & Ancillary Services</i>
Please select your sector:	Post Secondary (PS)

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

Actions taken by your organization in 2019 to support emissions reductions from buildings

Do you have a strategy to reduce emissions from stationary sources?
No

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

Over the medium-term term (1-5 years)
<ul style="list-style-type: none"> - Continued focus on upgrading lighting to LED technology including occupancy and daylight sensing controls. - Continued replacement of windows to double pane, low-e argon filled windows at the New West campus. - Building envelop replacement for buildings A, B & Daycare in Coquitlam. - Upgrade science labs (including fume hoods and exhaust) in New West. - Continue replacing pneumatic variable volume boxes with new DDC controlled boxes. - Upgrade main air handling systems (to allow for higher capacity and increase efficiency) in New West.
Over the long term (6-10 years)
<ul style="list-style-type: none"> - Upgrade main air handling systems (to allow for higher capacity and increase efficiency) in New West. - Further projects identified in the ASHRAE Level 2 Energy Audit in October 2015.

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

- Complete an energy audit of our campuses by 2021.

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

0

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

As part of our Campus Master Plan we have a number of planned renovations over the next 10 years which will include upgrades to both mechanical and electrical systems in the renovated space. In addition to this, we have a 3 year rolling capital infrastructure maintenance plan to renew building assets and systems resulting in improved building efficiencies

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

32

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

1

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

30

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.)

0

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

When equipment & systems are replaced, we recommission the affected system.

What % on average of your building portfolio do you recommission each year?

1

Do you keep records of Refrigerant gases¹ category and refilling volumes?

[1] Fugitive emissions from stationary cooling equipment are attributed to the leakage and loss of HFC and PFC based coolants from air conditioning and commercial type refrigeration systems. Coolant loss can occur during the manufacturing, operation, and disposal of such equipment. Gases that may be reported via CGRT include HFC R-134, HFC R-134a, HFC R-404a, HFC R-407c, HFC R-410a.

Yes

If yes, have you quantified and reported the associated emissions? What, if any, mitigation approaches have been considered? Please describe

Our contractors keep refrigerant records as part of their contracted service. Ongoing preventative maintenance and replacement of older equipment.

What, if any, mitigation approaches have been considered? Please describe.

Our contractors keep refrigerant records as part of their contracted service. Ongoing preventative maintenance and replacement of older equipment.

How many newly constructed buildings received at least LEED Gold certification in 2019?

0

How many newly constructed buildings did not receive LEED Gold certification?

0

Please explain why LEED Gold certification was not obtained for those new buildings.

We did not build a new building in 2019.

Other actions? Please describe briefly:

N/A

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

Actions taken by your organization in 2019 to support emissions reductions from mobile sources?

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

No

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

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

- Car sharing continues to be encouraged for employees and students. Our New West campus has 8 car share cars available (private companies) and the Coquitlam campus has 2 car share cars nearby.
- Staff and students are encouraged to take transit to/from our campuses.
- Expansion of EV charging stations at both campuses.
- Replacement of one small van to electric (when available on the market).

Over the long term (6-10 years)

- continue to review the medium-term options as the market changes and implement options to reduce emissions.

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

Electric Vehicle – EV - (e.g., Nissan Leaf, Chevy Bolt)

0

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

0

Hybrid vehicle – HEV – non “Plug In”- (e.g., Toyota Highlander Hybrid)

0

Hydrogen fuel cell vehicle

0

Natural gas/propane

0

Gas/diesel vehicle

0

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

N/A

Actions taken by your organization in 2019 to support emissions reductions from mobile sources? (Continued)

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

Level 2?

4

Level 3?

0

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

As defined as Level 2 stations only your organization's fleet vehicles may use

0

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

As defined as Level 3 stations only your organization's fleet vehicles may use

0

How many EV charging station(s) did you install in 2019 in each category:

Level 2?

0

Level 3?

0

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

As defined in the previous section

0

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

As defined in the previous section

0

Please briefly describe any other related actions, (e.g. charging station feasibility studies, electrical panel upgrades, etc.)

Developed a planning guide for EV charging infrastructure and expansion of EV chargers. Additional charging stations are budgeted for 2020.

Please indicate the total number of the vehicles in the following vehicle classes that are in your current fleet

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)

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
0

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
1

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

0

Actions taken by your organization in 2019 to support emissions reductions from paper supplies.

Briefly describe your organization’s plans to continue reducing emissions from paper use:

Over the medium-term (1-5 years)

We have a committee (Douglas College Printing Working Group) to focus on paper reduction activities at the College. The goals are:

- Reduce College-wide printing over the next 5 years by a minimum of 2% per year (440,000 pages).*
- Implement Papercut as a College-wide print solution for students, faculty, and staff and leverage reporting capabilities to track annual progress to wards cumulative 5 year, 10% print reduction goal.*
- Create educational campaign for faculty to raise awareness regarding impact of printing and best practices for reducing course-related printing (e.g. course outlines, handouts, assignment submission, exams to Blackboard).*
- Create educational campaign for faculty and staff to raise awareness regarding impact of printing and best practices for reducing business process related printing (e.g. meeting and recruitment documentation).*
- Create educational campaign for students to raise awareness regarding impact of printing and reduce course-related printing (e.g. course outlines, handouts, assignment submissions, slides).*
- Transition away from 300 pages of free student printing per semester over the next five years by reducing free printing by 20% per year (60 pages).*

Over the long term (6-10 years)

The Douglas College Working Group will develop additional goals around paper use.

Do you have an awareness campaign focused on reducing office paper use?

Yes

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

No

Other 2019 actions, please specify

We purchase FSC certified office paper that is 30% Recycled Office Paper.