

# 2019 Carbon Neutral Action Report

## Provincial Health Services Authority



# Declaration Statement

This Carbon Neutral Action Report for the period January 1, 2019 to December 31, 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 Provincial Health Services Authority's final Carbon Neutral Action Report will be posted to our website at [bcgreencare.ca](http://bcgreencare.ca)

## Retirement of Offsets

In accordance with the requirements of the **Climate Change Accountability Act** and Carbon Neutral Government Regulation, Provincial Health Services Authority (the Organization) is responsible for arranging for the retirement of the offsets obligation reported 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.

Cover photo: lobby of the Teck Acute Care Centre (TACC) on the BC Children's and BC Women's Hospitals campus in Vancouver, BC.

# COVID-19 Pandemic Statement

Due to the COVID-19 pandemic, the following [directive](#) was issued on March 31, 2020:

*“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 this CNAR are to be completed with information from 2019

This document provides guidance to provincial public sector organizations (PSOs) to help them prepare their 2019 Carbon Neutral Action Report (CNAR) in accordance with BC’s Climate Change Accountability Act and the Carbon Neutral Government Regulation.

# Executive Summary



**Benoit Morin, President & Chief Executive Officer**

I am pleased to present the tenth annual Carbon Neutral Action Report, which highlights the Provincial Health Services Authority's (PHSA) actions to reduce our carbon footprint, and link environmental sustainability to public health and wellness.

Over the years, we have worked to raise environmental awareness with our staff, patients and the communities we serve. These efforts have reduced PHSA's operational impact on the natural environment while reducing operational costs.

In 2019, PHSA had a carbon footprint of 19,342 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e), which was offset at a total cost of \$507,727.50. This represents a decrease of over 19 per cent relative to the carbon footprint base reporting year, 2007. This decrease is even more significant as we assumed responsibility for more programs, services and staff over the last 12 years.

We continued with two major heat recovery projects in 2019 at the BC Children's Hospital and BC Women's Hospital + Health Centre. When completed, the projects are expected to reduce carbon emissions at the BC Children's and Women's campus by more than 1,000 tCO<sub>2</sub>e.

Another highlight of 2019 was the completion of the measurement and verification process ensuring the Teck Acute Care Centre's predicted energy performance was achieved in practice. This process confirmed that actual performance was within the margin of measurement error. Actual performance represents a 19 per cent reduction in energy and an 80 per cent reduction in carbon emissions compared to a code baseline, achieved at zero incremental capital cost.

As we prepare to respond appropriately during our new reality, post-COVID-19, it is important that we pay close attention to actions that reduce our carbon footprint and reduce the spread of infectious agents. PHSA's Energy Manager played a key role in bringing Dr. Stephanie Taylor back to Vancouver for a healthcare-specific audience. Dr. Taylor's research presents compelling evidence highlighting the importance to maintain indoor relative humidity carefully between 40 and 60 per cent to reduce the spread of infection and create a healing indoor environment. Humidification can result in significant energy and carbon emissions; therefore a low carbon approach is essential.

I want to recognize PHSA's energy management team, who work closely with our capital projects as well as facilities maintenance and operations teams to reduce emissions. I would also like to recognize all of our staff, who support these efforts across the province. This ultimately adds to the health and wellness of our patients, employees and the communities we serve.

Date: May 29, 2020

Benoit Morin  
President & Chief Executive Officer  
Provincial Health Services Authority



# Our CO<sub>2</sub> Footprint

As per the Directive issued March 31, 2020, each PSO will use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 CNAR.

## 2019 GREENHOUSE GAS EMISSIONS BREAKDOWN AND OFFSETS APPLIED TO BECOME CARBON NEUTRAL

PHSA reports its organizational carbon footprint based on guidelines provided by the Carbon Neutral Government Regulation (CNGR) and the Climate Action Secretariat (CAS).

The CAS developed reporting guidance based on the GHG Protocol Corporate Standard. Based on these guidelines, PHSA's carbon footprint is comprised of six different greenhouse gases, which are converted into a common metric of tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e). In scope carbon emissions are grouped in three main categories:

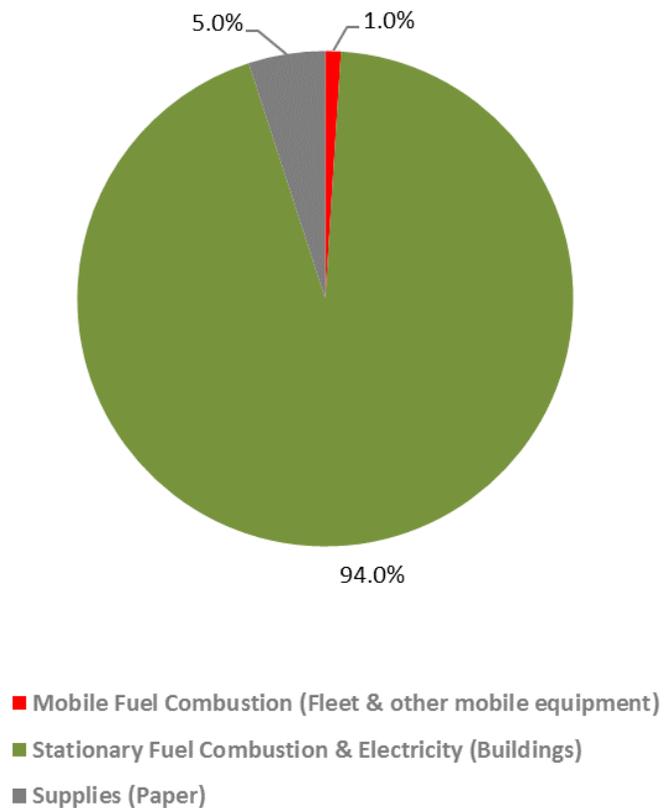
1. Stationary Fuel Combustion
2. Mobile Fleet Combustion
3. Supplies (Paper)

PHSA's 2019 carbon footprint offset was 19,342 tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e). That represents a 19.4 per cent decrease in PHSA's carbon footprint since 2007.

Over 90 per cent of PHSA's in-scope emissions are attributed to the building portfolio, and over 90 per cent of those emissions are associated with natural gas consumption. CAS administers the Carbon Neutral Capital Program (CNCP), through which PHSA has access to capital funding that is used to implement capital projects to reduce GHG emissions. These projects are focused on natural gas reduction in buildings.

To become carbon neutral in 2019, PHSA purchased carbon offsets at a total cost of \$507,727.50.

### 2019 PHSA Emission by Source



### PHSA GHG Emissions and Offsets for 2019

As per the [directive](#) issued March 31, 2020, each PSO will use their 2018 GHG Emissions as a placeholder for the purposes of their 2019 CNAR.

Total Emissions (tCO2e)	19,356
Total BioCO2	14
Total Offsets (tCO2e)	19,342
Offset Investment (\$25 per tCO2e) [Total Offsets x \$25/tCO2e]	\$483,550.00 (\$507,727.50 including GST)

Notes for above table:

- i. Note, BioCO2 is reported in Total Emissions but not Total Offsets
- ii. Prior Year Adjustments (PYAs) are not applicable as emissions and offsets are based on 2018 alone
- iii. Total emissions and offset invoice amounts will be validated by CAS prior to distributing invoices
- iv. Due to a variety of influences including historical data corrections and conversion factors, there may be minor discrepancies between data existing in Clean Government Reporting Tool (CGRT) vs SMARTTool

# Actions to Reduce Our CO<sub>2</sub> Footprint

## 2019 LIST OF ACTIONS TAKEN TO REDUCE CO<sub>2</sub> FOOTPRINT

### Stationary Emissions (Buildings)

- **Continuous Optimization:** PHSA started the Implementation Phase of BC Hydro's Continuous Optimization Program at two sites in 2019; at Shaughnessy DEF Blocks at C&W campus and at Vancouver Island Cancer Centre.
- **Waste Heat Recovery:** PHSA continued with one major heat recovery project (within the Phase 3 Redevelopment) and started a new one (within Child and Family Research Institute), both at C&W. In both cases a low exergy Thermal Gradient Header (TGH) design approach is being implemented to improve cooling capacity while synergistically recovering waste heat and reducing carbon emissions. In addition, PHSA completed a study at BC Cancer Research Centre that recommended a similar approach.
- **FMO Staff Engagement:** The PHSA energy management team has continued to build an engagement strategy with Facilities Maintenance and Operations (FMO) departments. This was initially focused initially at C&W campus, with plans to expand to all major owned sites over time. The outreach focuses on reviewing energy use in buildings, identification of reduction opportunities, and optimization of existing equipment/plants.
- **Design Guidelines:** PHSA's energy management team was involved in further refinements to GreenCare's Energy and Environmental Sustainability Design Guidelines for New Construction and Major Renovation projects with the intent of ensuring health care related new construction and major renovation projects are built to the highest standard of energy efficiency and conservation, within financial constraints. These guidelines informed the approach to environmental sustainability for the Centre for Mental Health and Addictions under construction at the Riverview site.
- **Behaviour Change:** PHSA's energy team continues to promote energy conservation and GHG emissions reduction through awareness and behaviour change programs, such as Green+Leaders and the GreenCare Community website.

## Mobile Fleet Combustion (Fleet and other vehicles)

PHSA continues to provide **electric vehicle charging stations** at various sites including regular plug-ins.

In 2019, PHSA continued to improve, promote and establish alternative transportation opportunities for PHSA staff.

PHSA continues to partner with Vancouver Coastal Health and Providence Health Care to provide a shuttle service between sites and continues to operate a staff shuttle between BC Children's and BC Women's Hospitals campus, staff off-site parking lot and King Edward Station.

PHSA sites offer **bike parking stalls** to encourage and enable active transportation by bike.



## Supplies (Paper)

As part of the Green+Leaders program, a **paper/waste reduction campaign** supports volunteers with **Paperless Meeting Toolkits** to encourage their colleagues to reduce paper use.

PHSA **encourages teleconferencing** for meetings by installing web- conferencing hardware / software at various sites.

## Actions That Fall Outside the Scope of the Carbon Neutral Government Regulations:

The Green+Leaders behaviour change program at PHSA recruits staff volunteers who help improve the environmental sustainability of PHSA operations. In 2019, 27 new staff registered for the program, bringing the total number of Green+Leaders at PHSA to 222 since 2010.

PHSA continues to support the GreenCare Community website, which provides tips and toolkits on using less paper, as well as other environmental sustainability initiatives linked to health and wellness.

PHSA offers in-person staff education on **waste management processes** in collaboration with Business Initiatives and Support Services (BISS)<sup>1</sup>.

PHSA also offers a [Waste Management Basics online learning module](#).

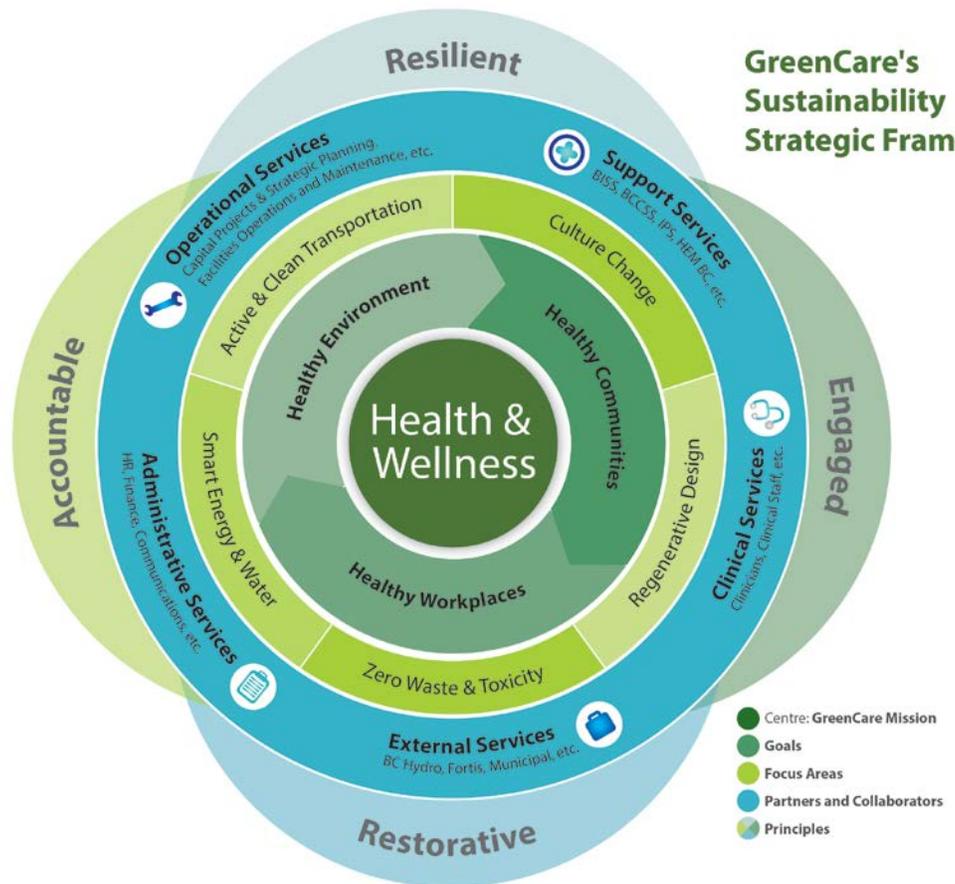


<sup>1</sup> For more information, please contact BISS Hazardous Waste Coordinator, Teri Guimond, [teri.guimond@phsa.ca](mailto:teri.guimond@phsa.ca)

## FUTURE ACTIONS TO REDUCE CO<sub>2</sub> FOOTPRINT

PHSA's plans to continue reducing GHG emissions and energy in the following ways:

- Optimize our existing buildings:** Planning and implementing GHG and energy reduction projects in our existing building portfolio by utilizing the Carbon Neutral Capital Program (CNCP) as our primary funding source.
- Efficient new construction:** Implementing project-specific energy and carbon performance targets to ensure that our new buildings are as energy and carbon efficient as possible.
- Systemic change:** Implementing standards, guidelines, and processes to embed energy management principles further into standard operations.
- Behaviour change:** Engaging and educating our staff, via the existing Green+Leaders program, GreenCare Community and through collaboration with the PHSA's Health Promotions Team.
- Innovation and demonstration:** Leveraging the innovative Green Revolving Fund approach that has been initiated for PHSA to support ongoing investment in energy conservation through utility cost avoidance achieved through conservation. In addition, taking small steps now (such as learning about new technologies) to pave the way for larger innovations when an appropriate opportunity arises.
- Align with our core mandate:** Working with GreenCare's refreshed Strategic Framework; PHSA will strive to advance health care practices that respect environmental stewardship, noting that the environmental impact from health care facilities, operations and services influence the health of populations and patients we serve. PHSA will engage in a collaborative approach to create a sustainable and environmentally responsible health care system, which continues to advance health and wellness in its broadest sense.



# Feature Project

## TACC Delivers on Energy & Carbon Promises

The Teck Acute Care Centre (TACC), opened in October 2017, and part of a phased project to significantly update hospital facilities at the BC Children’s and BC Women’s campus (C&W campus); however, planning for the facility was already underway in 2012.

In addition to providing comprehensive medical services, the vision for the building included creation of a healing environment for occupants and a sustainability mandate (LEED Gold Certification).

PHSA’s current Energy Manager, Alex Hutton, joined the healthcare Energy and Environmental Sustainability (EES) team in 2012, just in time to leverage her extensive experience influencing the design of sustainable buildings. She embedded an aggressive and achievable energy target for the project, as well as a mandatory requirement to implement a comprehensive measurement and verification (M&V) protocol to ensure the promised performance is achieved in theory (based on the energy modeling) as well as in practice (based on measured data).

In 2019 this M&V process, led by Eoghan Hayes of [Edge Consultants](#), was completed, which demonstrated that the project was within 0.2 per cent (which is within the margin of error) of the agreed target. Through the M&V process, actual energy consumption was analyzed and reconciled to account for Authority-controlled changes to address clinical needs (such as rapid cooling in operating rooms); these changes represented a 45 kWh/m<sup>2</sup>/year impact. In other words, the original target was increased by this amount to reflect actual clinical operation.

### Teck Acute Care (TACC) Project

**Technology:** Accountability mechanisms to drive improved energy performance

**Energy Performance\*:** 425 kWh/m<sup>2</sup>/year with savings of 100 kWh/m<sup>2</sup>/year, equal to 5,690 MWh or 19 per cent

**GHG Performance\*:** 14 kg/m<sup>2</sup>/year with savings over 3,000 tCO<sub>2</sub>e/year or 80 per cent reduction (equivalent to removing 648 passenger vehicles from the road)

**Incremental Project Cost\*:** Zero incremental cost compared to base scope which includes the LEED Gold mandate

**Benefits/Co-Benefits:** \$500,000 incentive achieved from BC Hydro New Construction Program

\*Savings and incremental cost are based on comparison to a baseline which complies with minimum code requirements of ASHRAE 90.1-2007 and CSA Z317.2-10. Note that the project is required to meet the LEED minimum energy performance as part of the LEED Gold mandate, which equates to an 18 per cent improvement over ASHRAE 90.1-2007. The incremental cost is relative to the LEED baseline, since the actual performance was achieved within the base project budget.

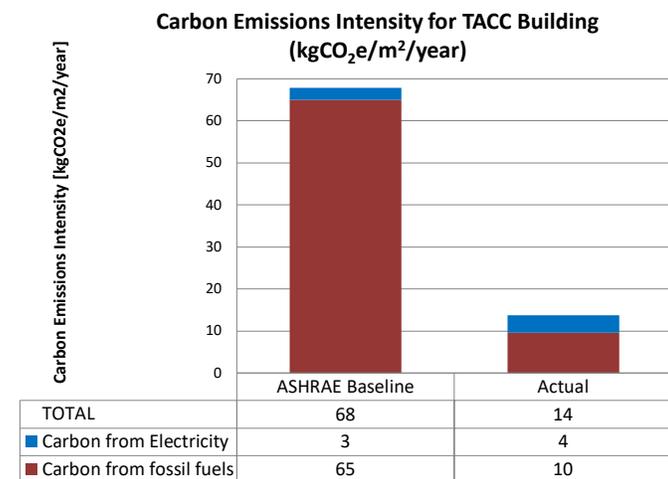


Figure 1: TACC Carbon Emissions Intensity (kgCO<sub>2</sub>e/m<sup>2</sup>/year)

Achieving this goal represents a 19 per cent reduction in energy consumption and an 80 percent reduction in annual carbon emissions for the building as compared to an ASHRAE code baseline building.

The success of the various accountability mechanisms embedded into the TACC project, including mandatory M&V, have informed current best practice across BC for new construction projects. This project is proof that achieving higher performance on energy and sustainability does not need to increase capital cost and can be done in synergy with creating a healing environment.

# Feature Initiative

## Collaborative Approach Explores the Intersection of Healing Environments and Low Carbon Resilience

A small group of attendees from a November 2019 ASHRAE event were so impressed by Distinguished ASHRAE Lecturer Dr. Stephanie Taylor and her research that they organized for her to return to Vancouver for a healthcare specific audience. Dr. Taylor's research presents compelling evidence that highlights the importance of maintaining indoor relative humidity carefully between 40 and 60 per cent to reduce the spread of infectious agents and to create a healing indoor environment.

This small group, included Alex Hutton, Energy Manager responsible for PHSA's portfolio, saw the potential to explore how these important findings might intersect with our context of a declared Climate Emergency and the associated necessity to achieve low carbon climate resilience.

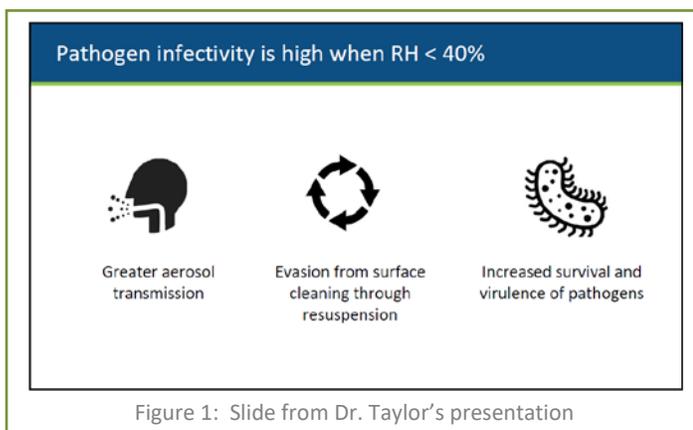
Dr. Taylor delivered a wealth of information within just 30 minutes, leaving 50 minutes for a facilitated breakout session and talk-back. The hypothesis behind the activity was that if we explore the potential at the intersection of healing environments and low carbon resilience, we will arrive at different and better solutions than exploring either in isolation, or exploring both through a purely risk management lens.

Each of the four groups was led by a facilitator through a contemplation and exploration of an optimistic future state in which we have responded appropriately as climate change has progressed. The future state imagines for example that our healthcare facilities being designed and operated to new standards defined by parameters that reflect the intersection of a healing, resilient and sustainable built environment (including carefully controlled indoor relative humidity). This would include taking a low carbon approach to humidity control.

"[The group] in Vancouver, BC organized one of the most forward thinking events I have ever experienced. They brought together health, regulatory, scientific, engineering and architecture professionals to brainstorm design approaches to integrate the goals of supporting occupant health while conserving carbon-based energy use. Bravo!" – Dr. Taylor



PHSA's Energy Manager (Alex Hutton, Left) with Distinguished Lecturer Dr. Stephanie Taylor (Right)



The energy in the room was palpable and evidenced by the challenge of silencing the group discussions in order to reconvene for a brief talk-back. A wide variety of ideas, solutions, and new questions arose from the discussion.

These ideas are especially relevant as we prepare to respond appropriately to our new reality, post COVID-19. As summarized in Figure 1, low relative humidity increases pathogen infectivity via several mechanisms.

**Confirmation number:** 00C5EB79

**Submitted date:** 2020-07-01 08:06:32 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](mailto: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"><li>The final, signed version of the <b>CNAR</b> (or Small Emitters Form) must be submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a></li></ul>
June 30, 2020*	<ul style="list-style-type: none"><li>Ministry of Environment and Climate Change Strategy must post a final CNAR for each organization on the BC Government's CNG <a href="#">website</a> and each PSO is encouraged to post the report on their website.</li><li>The <b>CNAR Survey</b> (optional for Small Emitters) must be completed and submitted online. *Deadline extended from May 29, 2020.</li><li><u>All offset invoice payments must be submitted to CAS.</u></li></ul>
Sept 30, 2020*	<ul style="list-style-type: none"><li><b>Clean Government Reporting Tool (CGRT) Data Entry</b> must be completed for the 2019 reporting year.</li></ul>

	*Deadline extended from April 30, 2020.
Oct 15, 2020*	<ul style="list-style-type: none"> <li>• <b>Self-Certification checklist</b> must be completed, signed and submitted by email to: <a href="mailto:Carbon.Neutral@gov.bc.ca">Carbon.Neutral@gov.bc.ca</a>.</li> </ul> *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](#).

<b>Contact Name:</b>
<i>Alex Hutton</i>
<b>Contact Email:</b>
<i>alex.hutton@phsa.ca</i>
<b>Organization Name:</b>
<i>Provincial Health Services Authority</i>
<b>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:</b>
Energy Manager
<b>Please select your sector:</b>
Health (H)

## 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

<b>Do you have a strategy to reduce emissions from stationary sources?</b>
Yes

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

<b>Over the medium-term term (1-5 years)</b>
<i>Provincial Health Services Authority has a 3 year Strategic Energy Management Plan (SEMP), complete with details of our Energy &amp; GHG use, reduction targets and planned actions to achieve these targets. Although this is a 3 year rolling plan, the SEMP is reviewed and updated annually. Our work can be summarized within five main areas: optimizing our existing buildings; influencing new construction; behaviour change; systemic change; and innovation and demonstration.</i>
<b>Over the long term (6-10 years)</b>
<i>Our longer term strategy is currently to continue with the types of efforts described in the short term; however, we can anticipate that there may be changes in the priorities (such as increased focus on electrification) as well as the specific projects that result. We can also anticipate the specific projects may involve new and innovative technologies and strategies not currently available or ready for implementation.</i>

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

*We aim to complete several energy audits each year in order to continually update our portfolio wide knowledge of the best available opportunities to reduce energy consumption and carbon emissions.*

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

10%

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

*Each year the building retrofits implemented are chosen via a multifaceted decision making process that takes into account the most recent energy audit results, opportunities to build upon and synergize with other planned capital spending, and the opportunities with the best performance based on numerous key performance indicators, including cost per ton of carbon.*

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

5% or less

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

5% or less

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

5% or less

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.)

5% or less

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

*We aim to implement some form of recommissioning or real time energy management strategy at all major owned and operated site every 5 years and we leverage utility provider support for such programs.*

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

5% or less

Do you keep records of Refrigerant gases<sup>1</sup> 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.

No

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

*There are ongoing discussions within healthcare sector on the best process to develop and maintain a refrigerant gas inventory for major cooling equipment. A specific approach has not been developed yet for PHSA.*

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.

*Not applicable*

Other actions? Please describe briefly:

*Other actions taken are outlined within the Carbon Neutral Action Report Overview as well as our annual Environmental Performance Accountability Report.*

*<https://bcgreencare.ca/environmental-sustainability-everyones-story>*

## 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)

*PHSA continues to provide electric vehicle charging stations at various sites including regular plug-ins.*

*In 2019, PHSA continued to improve, promote and establish alternative transportation opportunities for PHSA staff.*

*PHSA continues to partner with Vancouver Coastal Health and Providence Health Care to provide a shuttle service between sites and continues to operate a staff shuttle between BC Children's and BC Women's Hospitals campus, staff off-site parking lot and King Edward Station.*

*PHSA sites offer bike parking stalls to encourage and enable active transportation by bike.*

Over the long term (6-10 years)

*Continuing to work with Fleet Procurement and Transportation Demand Management Coordinator (if applicable) to improve, promote, and establish low carbon transportation opportunities .*

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

10

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

*Currently the main criteria for fleet purchases is cost; a decision-making process that gives consideration to emissions or other environmental impacts needs to be established.*

## 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?

5

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.)

*Not aware of any at this time*

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)
2
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
18

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

28

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

17

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)

*The Energy and Environmental Sustainability Team is working with PHSA Supply Chain and other LMHO stakeholders to determine the appropriate route to change all or the majority of primary paper purchases to 30PCR by 2025.*

Over the long term (6-10 years)

*The Energy and Environmental Sustainability Team is working with PHSA Supply Chain and other LMHO stakeholders to determine the appropriate route to change all or the majority of primary paper purchases to 50-100PCR by 2030.*

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

*Through the Green+Leaders staff engagement and behaviour change program, volunteers were supplied with Paperless meeting toolkits to encourage their colleagues to reduce paper use. There are 75 trained Green+Leaders within Vancouver Coastal Health.*

*We plan to continue to raise awareness of the importance of emissions reductions from paper supplies through the Green+Leaders behaviour change program. More specifically, we plan to explore a paper strategy and associated campaign to encourage staff to take action and reduce paper consumption in healthcare.*