

2020 Climate Change Accountability Report

Provincial Health Services Authority



Declaration Statement

This Climate Change Accountability Report for the period January 1, 2020 to December 31, 2020 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2020 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2021 and beyond.

By June 30, 2021 Provincial Health Services Authority's final 2020 Climate Change Accountability Report will be posted to our website at bcgreencare.ca. Final Climate Change Accountability Reports will be also posted on the BC Government CNG [website](#) by June 30, 2021 to meet legislative requirements.

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 above for the 2020 calendar year, together with any adjustments reported for past calendar years (if applicable). 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.

Cover photo: rendering of the Red Fish Healing Centre for Mental Health & Addiction under construction at the Riverview site.

Executive Summary



David Byres, Interim President & Chief Executive Officer

I am pleased to present the eleventh annual Climate Change Accountability Report¹ 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 2020, PHSA had a carbon footprint offset of 18,671 tonnes of carbon dioxide equivalent (tCO₂e), which was offset at a total cost of \$477,041.25². This represents a decrease of 22.2 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 13 years.

In 2020, we continued our carbon emission reduction efforts with three capital projects at the BC Children's Hospital and BC Women's Hospital + Health Centre, and BC Cancer – Vancouver. When completed, these projects are expected to reduce our carbon emissions by more than 1,000 tCO₂e per year. We have completed and will continue to take actions to reduce our carbon footprint associated with our buildings, fleet and other mobile equipment, as well as supplies (paper) that are the three categories of our in-scope emissions. In addition, we also have been taking actions that fall outside the scope of the Carbon Neutral Government Regulations, such as diverting waste to recycling and composting and looking for waste reduction opportunities, environmentally preferable purchasing, education and awareness, behaviour change and staff engagement campaigns, as well as climate resilience and adaptation.

I want to recognize PHSA's energy management team, as part of the shared services Energy and Environmental Sustainability team, that works 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 31, 2021

David Byres
Interim President & Chief Executive Officer
Provincial Health Services Authority



¹ Formerly known as Carbon Neutral Action Report

² This amount is calculated based on PHSA's 2020 carbon footprint offset of 18,671 tCO₂e and -498 tCO₂e adjustment from prior years (2018 and 2019), using \$25 per tCO₂e, plus 5 per cent GST.

Our CO₂ Footprint

2020 GREENHOUSE GAS (GHG) EMISSIONS BREAKDOWN AND OFFSETS APPLIED TO BECOME CARBON NEUTRAL

PHSA reports its organizational carbon footprint based on guidance provided by B.C.'s Climate Change Accountability Act (CCAA), Carbon Neutral Government Regulation (CNGR) and the Climate Action Secretariat (CAS).

The CAS developed reporting guidance based on the Greenhouse Gas Protocol Corporate Standard. According to 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 (tCO₂e). In scope carbon emissions are grouped in three main categories:

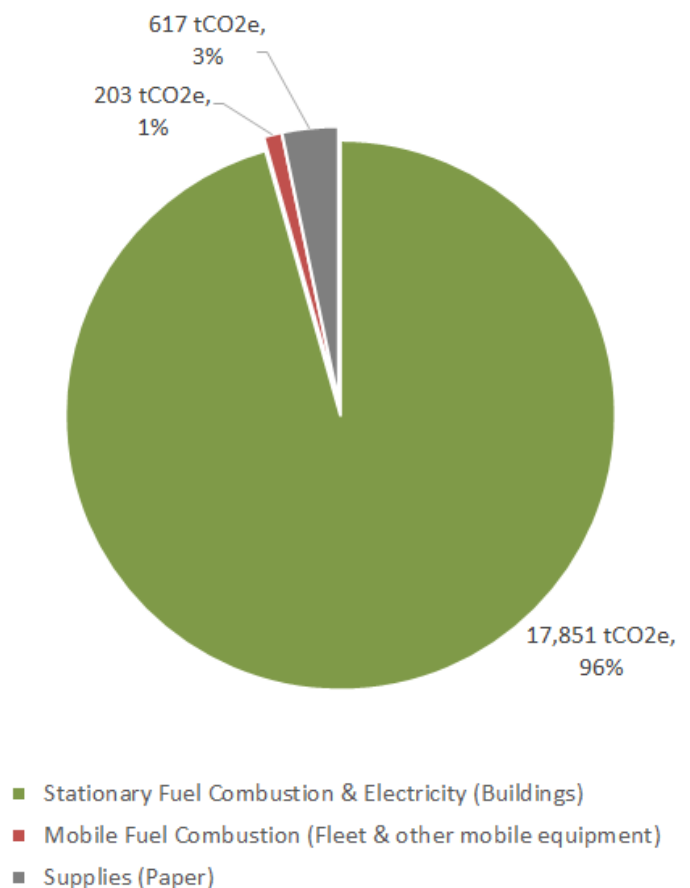
1. Stationary Fuel Combustion
2. Mobile Fuel Combustion
3. Supplies (Paper)

PHSA's 2020 carbon footprint offset was 18,671 tonnes of carbon dioxide equivalent (tCO₂e). That represents a 22.2 per cent decrease in PHSA's carbon footprint since 2007.

Over 96 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.

To become carbon neutral in 2020, PHSA purchased carbon offsets at a total cost of \$477,041.25 from the Ministry of Environment. This amount is calculated based on PHSA's 2020 carbon footprint offset of 18,671 tCO₂e and -498 tCO₂e adjustment from prior years (2018 and 2019), plus GST.

2020 PHSA
Greenhouse Gas (in-scope)
Emissions by Source



Provincial Health Services Authority 2020 GHG Emissions and Offsets	
GHG Emissions created in Calendar Year 2020	
Total Emissions (tCO ₂ e)	18,679
Total BioCO ₂	8
Total Offsets (tCO ₂ e)	18,671
Adjustments to Offset-Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	-498
Grand Total Offsets for the 2020 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2020 Reporting Year	18,173
Offset Investment (\$25 per tCO ₂ e)	\$ 454,325
[Total Purchased Carbon Offset +GST]	\$ 477,041.25

Notes for above table (provided by the Climate Action Secretariat):

- i. [Note, BioCO₂ is included in Total Emissions but not Total Offsets. For K-12 and post-secondary organizations, and BC Transit, Total Offsets will not equal Total Emissions minus Total BioCO₂ because offset-exempt emissions for buses are included within Total Emissions.
- ii. Emissions and offset investment amounts will be validated by CAS prior to distributing invoices.
- iii. You must round "Grand Total Offsets to be Retired" to a whole number (no decimal places) before multiplying by \$25 (e.g., 43.2 = 43, 43.5 = 44).]

CHANGES TO PROVINCIAL HEALTH SERVICES AUTHORITY'S PORTFOLIO

PHSA's usable facility space has increased 9.3 per cent since the 2007 base reporting year, which is largely due to the construction of the Teck Acute Care Centre. PHSA has controlled increases in facility space to accommodate increased staff by seeking opportunities to optimize existing space use while maintaining safety and efficiency.

BUILDINGS, FTE AND WEATHER	2007	2016	2017	2018	2019	2020
Distinct PHSA Buildings	n/a	76	74	74	76	76
% Owned	n/a	68%	73%	72%	72%	72%
% Leased	n/a	32%	27%	28%	28%	28%
Usable Square Meters ¹	388,990	358,995	418,631	422,796	425,344	425,344
Full-Time Employee Equivalents ²	5,491	10,447	10,977	11,435	11,928	12,119
Weather (summarized in Heating Degree Days) ³	2,870	2,537	2,922	2,720	2,844	2,759

Notes for above table:

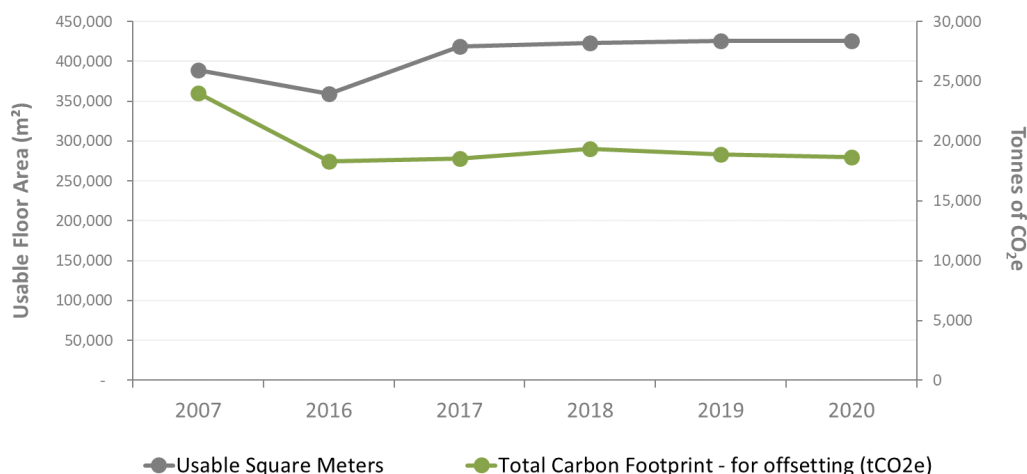
¹ Usable area excludes roof tops, interstitial spaces, and parking areas.

² Full-Time Employee data was provided by Health Employers Association of B.C. Full-Time Employee data include all designated groups reported in HSCIS and exclude affiliate employers and BCEHS employees. Full-Time Employee calculations are based on 1950 annual hours.

³ Heating Degree Days (HDD's) are based on YVR Airport data from Environment Canada and are intended to reflect the demand for heating. Although PHSA's facilities are located across B.C., the majority of buildings are in the metro Vancouver area, so HDD's for Vancouver were used.

Overall, since 2007, PHSA's carbon footprint has decreased while usable floor area and staff have increased. As of 2020, emissions per full-time equivalent (1.54 tCO₂e/FTE) have decreased by 65 per cent since 2007, and emissions per unit of floor area (0.04 tCO₂e/m²) have decreased 29 per cent since 2007. The carbon emissions reported are not adjusted for changes in weather. Heating Degree Days (HDDs) is a metric designed to reflect the demand for energy required to heat a building. Emissions per HDD is a metric intended to summarize overall efficiency of delivering heating. PHSA's 2020 emissions per HDD (6.8 tCO₂e/HDD) are 19 per cent lower than the baseline year.

PHSA Usable Floor Area and Emissions (2007-2020)



Our Carbon Footprint (tCO₂e)		2007	2016	2017	2018	2019	2020
	Mobile Fuel Combustion (Fleet & other mobile equipment)	189	417	189	180	175	203
	Stationary Fuel Combustion & Electricity (Buildings)	22,930	17,027	17,442	18,473	17,902	17,859
	Supplies (Paper)	891	893	927	703	791	617
	Total Carbon Footprint (tCO ₂ e)	24,010	18,338	18,558	19,356	18,868	18,679
	Total BioCO ₂ Emissions (No Offsets Required) ^{1, 2}	-9	-16	-9	-14	-7	-8
	Total Carbon Footprint (tCO ₂ e)	24,002	18,322	18,549	19,342	18,861	18,671
	Adjustments / Corrections ³	0	0	0	0	0	-498
	Total Carbon Footprint - for offsetting (tCO₂e)	24,002	18,322	18,549	19,342	18,861	18,173

\$	Purchased Carbon Offsets	\$ -	\$ 458,050	\$ 463,725	\$ 483,550	\$ 483,550	\$454,325
	Purchased Carbon Offsets +GST³	\$ -	\$ 480,953	\$ 486,911	\$ 507,728	\$ 507,728	\$477,041

KPI's	Emissions per Full-Time Employee (tCO ₂ e/FTE)	4.37	1.75	1.69	1.69	1.58	1.54
	Emissions per Facility Space (tCO ₂ e/m ²)	0.06	0.05	0.04	0.05	0.04	0.04
	Emissions per Heating Degree Day (tCO ₂ e/HDD)	8.4	7.2	6.3	7.1	6.6	6.8

Notes for above table:

¹ As outlined in the Carbon Neutral Government Regulation of the Climate change Accountability Act, some emissions do not require offsets.

² It was estimated that Fugitive Emissions from cooling equipment comprise less than 0.01 per cent of PHSA's total emissions and for this reason, emissions from this source have been deemed out-of-scope and have not been included in our total greenhouse gas emissions profile.

³ Due to the COVID-19 pandemic, on March 31, 2020 a directive was issued to all ministries and public sector organizations in BC to use their 2018 GHG emissions as a temporary estimate for their actual 2019 GHG emissions, for the purpose of the 2019 Carbon Neutral Action Reports and 2019 Carbon Neutral Government reporting required under the Climate Change Accountability Act. Therefore, the purchased carbon offsets in 2019 was equivalent to 2018. A total adjustment of -498 tCO₂e to offset required emissions in prior years (2018 and 2019) is accounted for in 2020 Total Carbon Footprint for offsetting and 2020 purchased carbon offsets amount.

Actions to Reduce Our CO₂ Footprint

2020 LIST OF ACTIONS TAKEN TO REDUCE CO₂ FOOTPRINT

Stationary Emissions (Buildings)

- **Continuous Optimization:** PHSA started the Implementation Phase of BC Hydro's Continuous Optimization Program at BC Cancer Research Centre and progressed with the implementation of the Continuous Optimization Program at BC Cancer – Victoria.
- **Waste Heat Recovery:** PHSA continued with one major heat recovery project within the Phase 3 Redevelopment and another one within BC Children's Hospital Research Institute, both at BC Children's and BC Women's. PHSA also started a new major heat recovery project and lighting upgrade at BC Cancer Research Centre. In all three heat recovery projects listed above, a low exergy Thermal Gradient Header (TGH) design approach was selected for implementation to improve cooling capacity while synergistically recovering waste heat and reducing carbon emissions. In addition, PHSA started an energy study at the BC Cancer – Victoria and another one at the Healthy Minds Centre to identify heat recovery and carbon emissions reduction opportunities.
- **FMO Staff Engagement:** The PHSA energy management team has continued to build an engagement strategy with Facilities Maintenance and Operations (FMO) departments. This was focused initially at BC Children's and BC Women's 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 has been 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 Red Fish Healing Centre for Mental Health & Addiction 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.



Image Reference: The Teck Acute Care Centre (TACC) at PHSA's BC Children's and BC Women's

Mobile Fuel Combustion (Fleet and other vehicles)

- PHSA actively encourages alternative modes of transportation to gas/diesel single occupancy vehicles. Inter-hospital staff shuttles are offered free of charge to all PHSA staff. These shuttles facilitate inter-site transportation for staff, as well as transportation to major transit hubs, and reduce/eliminate the need for staff to rely on their own vehicles to travel between sites. Total shuttle ridership in 2020 was 35,572.
- PHSA also encourages active and clean modes of transportation and has three bike rooms/cages, three showers, and capacity for the locking/storage of 476 bikes across its core sites. In 2020, the Green+Leaders program at PHSA has supported and provided funding for five staff-initiated/led projects that contribute to safe and accessible cycling, including installation of bike racks, and secure bicycle storage amenities. PHSA's Energy and Environmental Sustainability team, along with other departments including Facilities Maintenance and Operations, and Integrated Protection Services continue to work collaboratively on initiatives and projects that encourage active and clean modes of transportation across PHSA sites.
- PHSA is planning to provide electric vehicle charging stations at various sites including regular plug-ins.
- An electric vehicle baseline and feasibility study at PHSA is planned for 2021/2022 and will include fleet vehicles and ambulances. This study will lay the groundwork for the development of a potential electric vehicle strategy, to increase and improve access to electric vehicle charging infrastructure and continue to decrease emissions from mobile sources. Fleet vehicles, patient transport vehicles, inter-hospital staff shuttle services, together with charging infrastructure for staff, patients, and visitors will be considered in the study. Incorporating environmental considerations into the criteria used for fleet procurement will be also studied as part of the project.

Supplies (Paper)

- In partnership with other B.C. health authorities, PHSA identified the benefits of purchasing post-consumer recycled (PCR) paper as opposed to virgin paper with the aim of reducing environmental impacts such as carbon emissions, water consumption and air pollution associated with paper supplies. Subsequently, PHSA included specifications for PCR paper in upcoming Request for Proposals. PHSA continues to work with suppliers and vendors to identify PCR paper options at reasonable prices and identify ways to formally increase the volume of PCR paper in inventory.

- As part of the Green+Leaders program, PHSA provides Paperless Meeting Toolkits³ to encourage and support eliminating the practice of printing documents to hand out at meetings.

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 2020, PHSA continued to provide training, resources, toolkits and recognition to support the Green+Leader program and various green teams in PHSA. The Green+Leaders behaviour change program recruited 14 new volunteers for PHSA in 2020, making a total of 94 active staff volunteers across PHSA and a total of 271 PHSA staff trained since the program began in 2007.
- In 2020, PHSA continued to have active “green committees” or green teams, which are led by Green+Leaders at various sites; these committees explore and implement a broader variety of sustainability initiatives beyond the Green+Leaders toolkits.
- 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 had 1,137 staff registered on the site as of 2020.
- Education and awareness communication via the GreenCare Community is supplemented by stories published in PHSA news and various internal communication channels; these efforts continue to champion behaviour change and celebrate environmental sustainability successes.
- With the support of the Health Promotion Initiative Fund, seven projects were initiated by Green+Leaders at PHSA with the aim of improving environmental sustainability in health care. 2020 projects addressed issues around food security, green space and active and clean transportation.
- PHSA continues to support workplace leadership opportunities that support behaviour change and staff engagement through informative educational opportunities. In 2020, the Green+Leaders Program led two Lunch and Learns, two Webinars, two trainings and orientations and one annual recognition event. Highlights include the new webinar series on Healthy and Green Buildings that supports the understanding of green building design and fosters opportunities for PHSA staff to get involved in design and construction processes in health care.
- According to GreenCare Survey results, 67.1 per cent of PHSA staff agree or strongly agree with the statement, “I take ownership of the environmental impact that I have in my workplace.”



Image Reference: PHSA 2019 EPAR:
https://bcgreencare.ca/sites/default/files/PHSA_EPAR2019Report_FINAL_Sept1.pdf

- PHSA facilities comply with a standardized recycling program which includes mixed containers, mixed paper, organic waste and batteries. Depending on collection logistics, some sites may also participate in recycling

³ <https://bcgreencare.ca/resource/gl-toolkit-paperless-meetings-tool>

programs for expanded polystyrene, pallet wrap, printer cartridges, mattresses, scrap metal, lighting and other materials. Each facility has a target of reaching 50 per cent waste diversion by 2030.

- While in-person staff education sessions focused on waste management process were put on hold due to COVID-19-related considerations, PHSA continued the delivery of relevant education through a virtual Lunch and Learn for the BC Cancer Foundation team. The session involved sharing information on the context of health care waste, how to recycle properly and how to identify opportunities for waste reduction at work and at home. Also, in the period of January 1, 2020 to December 31, 2020 a total of 538 PHSA staff completed the online Waste Management Basics Learning Module⁴ available on the Learning Hub platform. This module familiarizes learners with the impacts of improper waste management and how to discard different types of waste appropriately.
- Throughout 2020, two PHSA sites, BC Children's and Women's Hospital and BC Cancer – Vancouver, hosted the Cafeteria Waste Campaign⁵ designed to make recycling easier for visitors through new recycling and waste bin stickers and campaign posters and banners that are informative and easy to understand.
- PHSA supports professional development through workshops and educational sessions sponsored by BC Hydro and Fortis BC.
- PHSA contributed to and supported the development of the Climate Resilience Guidelines for BC Health Facility Planning and Design (v.1.1)⁶ created for new construction, major redevelopment and retrofit projects. These guidelines provide a robust methodology for climate risk and resilience assessment and enable an iterative approach to identifying resilient design solutions in anticipation of the challenges faced by facility designers and operators caused by a changing climate.
- PHSA Supply Chain, which covers all elements of supply chain management including contracting and materials management on behalf of all six B.C. health authorities, added the following clause to their

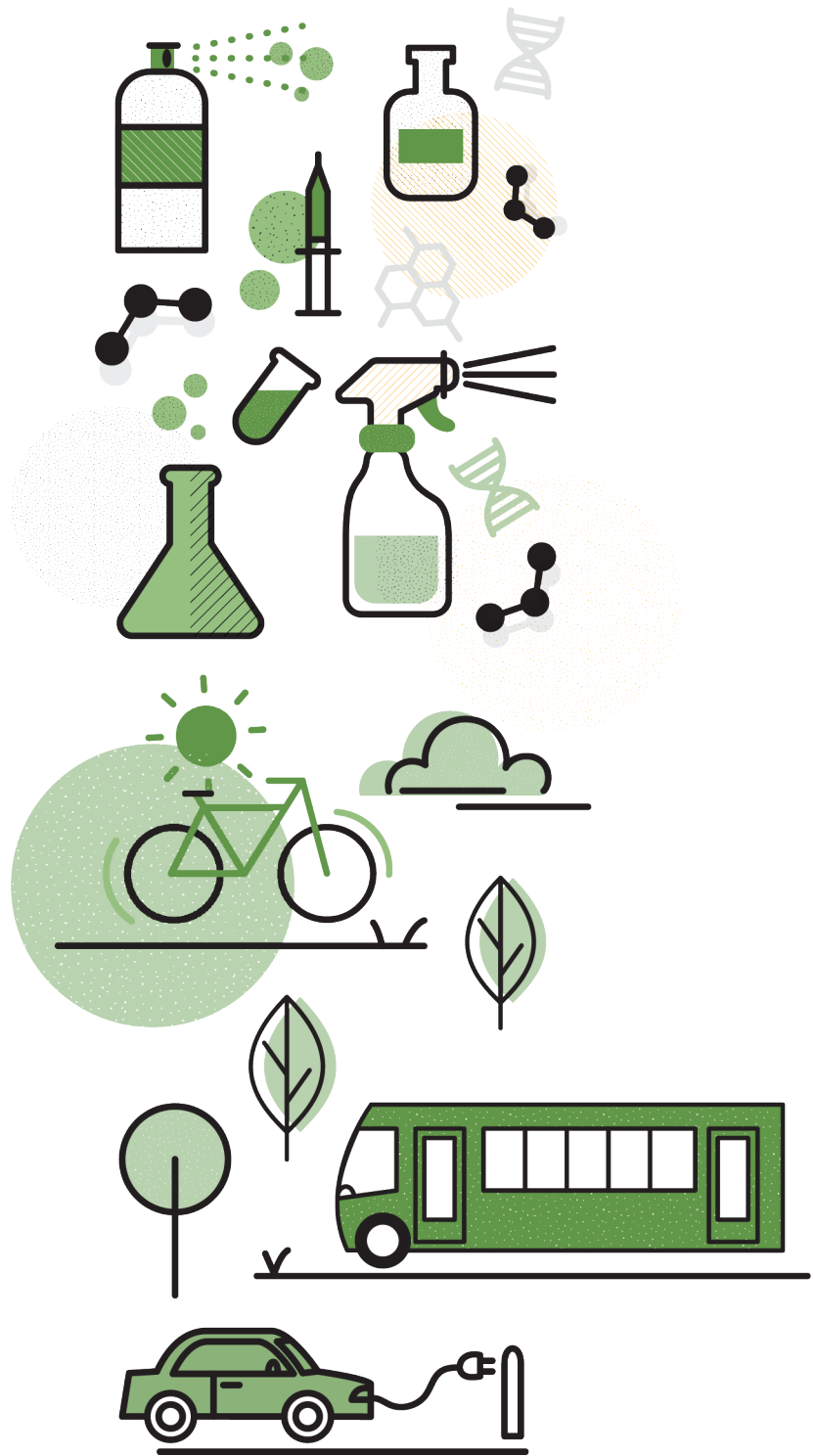


Image Reference: PHSA 2019 EPAR:
https://bcgreencare.ca/sites/default/files/PHSA_EPAR2019Report_FINAL_Sept1.pdf

⁴ <https://learninghub.phsa.ca/Courses/9114/waste-management-basics-learning-module-online>

⁵ <https://bcgreencare.ca/cafeteria>

⁶ <https://bcgreencare.ca/resource/climate-resilience-guidelines-bc-health-facility-planning-design-v1-1>

Procurement Policy⁷ in 2020: “follow applicable guidelines for procurement of environmentally responsible and sustainable products and services, as applicable” as part of the competitive procurement process. A relevant initiative within PHSA, known as Environmentally Preferable Purchasing had started in late 2019 in partnership with the other B.C. health authorities with the goal of implementing formal processes in supply chain to weigh products and services against environmental criteria.

- Other 2020 initiatives and actions with regards to environmentally preferable purchasing include formalizing product change for the perineal bottles without plastic packaging and formalizing product change for sitz bath without tubing and gradient bag. These result in hundreds of kilograms savings of plastic waste and cost savings for the health authority.
- In 2020, PHSA’s Energy and Environmental Sustainability team started the process of updating its Sustainability Strategic Framework that was last updated in 2016. The framework refresh process will be completed in 2021. It’s important to update the framework to reflect recent events in the context of B.C. and the health authority. These events include: changes in legislation, increased public interest in environmental sustainability and climate change, health authority executive mandates relating to a low carbon economy/climate change, and staff interest/engagement with regards to environmental sustainability. The refreshed framework ensures relevance, alignment and accountability.



Image Reference: PHSA 2019 EPAR:
https://bcgreencare.ca/sites/default/files/PHSA_EPAR2019Report_FINAL_Sept1.pdf

⁷ <http://shop.healthcarebc.ca/phsa/PHSAPOD/Supply%20Chain/ABCD-99-11-42001.pdf>

FUTURE ACTIONS TO REDUCE CO₂ FOOTPRINT

PHSA 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 (CNCPP) 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 & staff engagement:** Engaging and educating our staff, via the existing Green+Leaders program, GreenCare Community and through collaboration with the PHSA's Health Promotions Team, as well as participation in Energy Wise Network Program. Mid 2021, the new BC GreenCare website⁸ will be launched to provide a renewed hub for environmental sustainability-related resources and opportunities. The new website is centered on engaging PHSA and other BC health care staff with environmental sustainability and resilience in the workplace.
- **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:** Striving to advance health care practices that respect environment stewardship by working with GreenCare's refreshed Strategic Framework, noting that the environmental impact from health care facilities, operations and services influences 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.

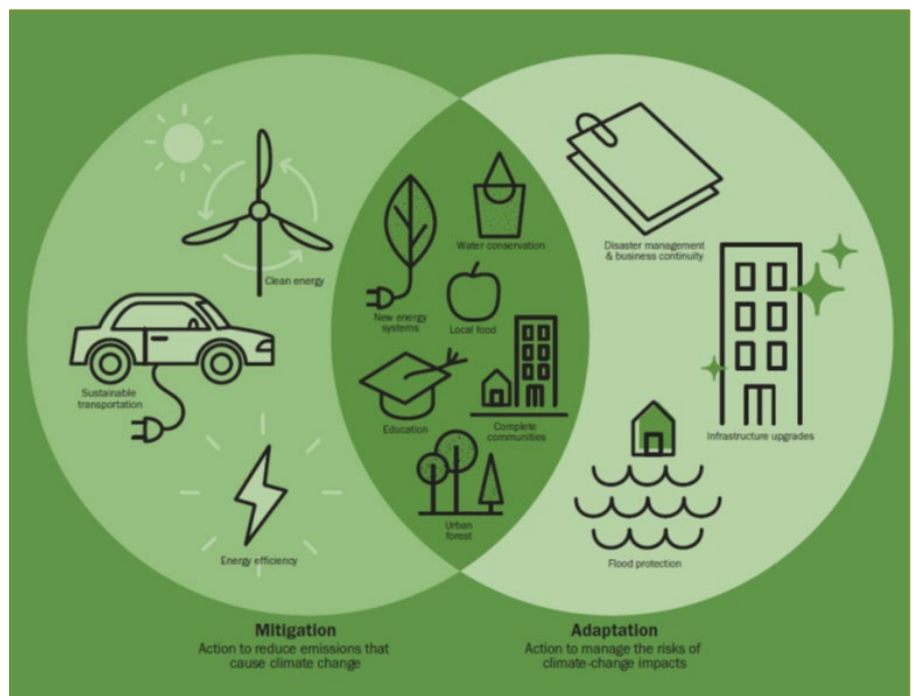


Image Reference: PHSA 2019 EPAR:
https://bcgreencare.ca/sites/default/files/PHSA_EPAR2019Report_FINAL_Sept1.pdf

⁸ <https://bcgreencare.ca/>

Feature Project

CMMT Heat Recovery Project

In 2019, an energy and emissions study was conducted to identify opportunities for more efficient heat delivery and recovery and achieving carbon reduction at the Centre for Molecular Medicine and Therapeutics (CMMT) in the BC Children's Hospital Research Institute on the BC Children's and BC Women's campus. As the result, a number of energy conservation measures were identified and recommended for implementation. The scope of the project was split in two phase and plans were developed to complete the full scope by the end of 2020/2021 Fiscal Year.

PHSA received funding from CNCP in fiscal years 2019/2020 and 2020/2021 to implement the identified energy conservation measures at CMMT using heat pumps for simultaneous heating and cooling, as well as Thermal Gradient Header to integrate additional waste heat sinks and sources. The project is estimated to result in more than 600 tCO₂e/yr. carbon emissions reductions at the CMMT building on the BC Children's and BC Women's campus.

The PHSA Energy Management team also applied to Capital Incentive Funding Program at FortisBC to receive capital incentive for implementation of energy conservation measures at CMMT. After the review of the Energy Reports submitted by PHSA, FortisBC issued two Incentive Agreements for implementation of the approved measures at CMMT. Upon completion of the project scope in the end of 2020/2021 Fiscal Year, PHSA submitted proof

of installation and compliance with the terms and conditions of the Capital Incentive Funding Program to FortisBC. The Energy Management team at PHSA is anticipating a total of \$819,693 incentive (including COVID-19 Relief Incentives) from FortisBC for full implementation of the approved measures at the CMMT building. The approved measures by FortisBC are estimated to result in more than 15,000 GJ/year savings of natural gas at the CMMT building.



Image Reference: PHSA CMMT Heat Recovery Project