

Providence Health Care



Providence
Health Care
How you want to be treated.

2022 PSO CLIMATE CHANGE ACCOUNTABILITY REPORT



Providence
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How you want to be treated.

Carbon Neutral



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Declaration Statement

This Climate Change Accountability Report for the period January 1, 2022 to December 31, 2022 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2022 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2023 and beyond.

By June 30, 2023, Providence Health Care's final 2022 Climate Change Accountability Report will be posted to our website at bcgreencare.ca. Final Climate Change Accountability Reports will also be posted on the BC Government CNG [website](#) by June 30, 2022 to meet legislative requirements.

Retirement of Offsets

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Providence Health Care (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2022 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: St. Vincent's: Heather Long Term Care Home – concept drawing of approved future build, Vancouver

Executive Summary



Fiona Dalton, President & Chief Executive Officer

It gives me great pleasure to present Providence Health Care's (PHC) 13th annual Climate Change Accountability Report (CCAR) for 2022. As an organization driven by innovation and social justice, we believe that our role as health care providers goes beyond caring for individuals to also caring for the environment and the planet that we live on.

Stewardship is one of our key organizational values and throughout our long history of providing compassionate and innovative care, teaching and research, we have been responsible and accountable stewards. For us, that includes taking personal responsibility for the carbon footprint produced by our operations and facilities.

In 2022, Providence had a carbon footprint of 10,459 tons of carbon dioxide equivalent (tCO₂e), which was offset at a total cost of \$261,475. I am delighted to report that this represents a 9 per cent decrease of carbon emission relative to the 2007 baseline year. In 2022, Providence completed and commissioned several energy-efficiency and GHG-reduction projects at our core sites, including Mount Saint Joseph Hospital, Holy Family Hospital, St. Vincent's: Langara, St. Vincent's: Brock Fahrni and Youville care home. In recognition of the significant carbon reduction achieved for these projects, Providence received incentive payments of \$1,184,540 from FortisBC, Clean BC and BC Hydro. We also started major retrofit projects in Honoria Conway assisted living and St. Paul Hospital, and received \$998,474 Carbon Neutral Capital Program (CNCP) funding to support these projects. It is worth highlighting the project at Brock Fahrni, which added cooling and reduced carbon emissions by 80%, has also subscribed for 100% Renewable Natural Gas, so, effectively, this is now the first Providence site to be a Net Zero Carbon Emission facility.

As in previous years, our carbon footprint was entirely offset through the purchase of carbon offsets through the BC Government program. Providence's Energy Manager initiated a project in partnership with UBC in 2021 to use food waste from health care facilities to convert into useful products, such as biofuel and fertilizer. In 2022, UBC and Providence collaborated on a proposal to receive the federal government grant for implementing this Research and Development project with the goal to implement in 2023.

In 2023, we will continue to make meaningful steps towards creating low-carbon resilient health system at Providence. These steps will bring positive impacts in reducing emission, decreasing air pollution, and ultimately adding to the health and wellness of the people, workplaces and the communities we serve.



Date: May 31, 2023

Fiona Dalton
President & Chief Executive Officer
Providence Health Care

Our Emissions Profile

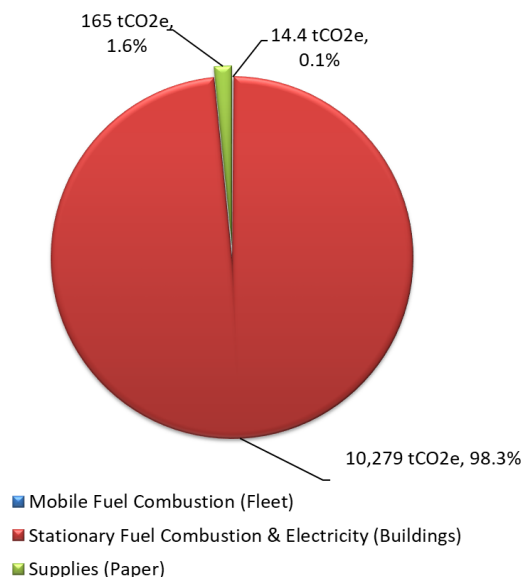
2022 Greenhouse Gas (GHG) Emissions Breakdown and Offsets Applied to become Carbon Neutral

PHC 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, PHC'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 Consumption)

2022 Providence Health Care's Greenhouse Gas (In-Scope) Emissions by Source



In 2022, PHC's carbon footprint offset was 10,459 tonnes of carbon dioxide equivalent (tCO₂e). That represents a 9 per cent decrease in PHC's carbon footprint offset since 2007.

Over 98 per cent of PHC's in-scope emissions are attributed to the building portfolio, and over 60 per cent of those emissions are associated with steam consumption.

To become carbon neutral in 2022, PHC will purchase carbon offsets at a total cost of \$261,475 from the Ministry of Environment and Climate Change Strategy. This amount is calculated based on PHC's 2022 carbon footprint offset of 10,459 tCO₂e, at \$25/ tonne CO₂e plus GST.

Providence Health Care 2022 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2022	
Total BioCO ₂	52.8
Total Emissions (tCO ₂ e)	10,512
Total Offsets (tCO ₂ e)	10,459
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets to be Retired for 2022 Reporting Year (tCO ₂ e)	10,459
Offset Investment (\$)	261,475

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 Providence Health Care Portfolio

PHC's usable facility space has increased by 4.8 per cent since the 2007 base reporting year, which is largely due to such additions as Honoria Conway, and an increase in leased spaces. PHC 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	2018	2019	2020	2021	2022
Distinct PHC buildings	n/a	39	45	44	45	45
% Owned	n/a	90%	89%	89%	89%	89%
% Leased	n/a	10%	11%	11%	11%	11%
Usable square meters ¹	174,002	181,751	182,713	182,914	182,550	182,301
Full-time employee equivalents ²	4,038	4,914	5,062	5,188	5,443	5,595
Weather (summarized in Heating Degree Days) ³	2,870	2,720	2,844	2,759	2,875	2,936

Notes for above table:

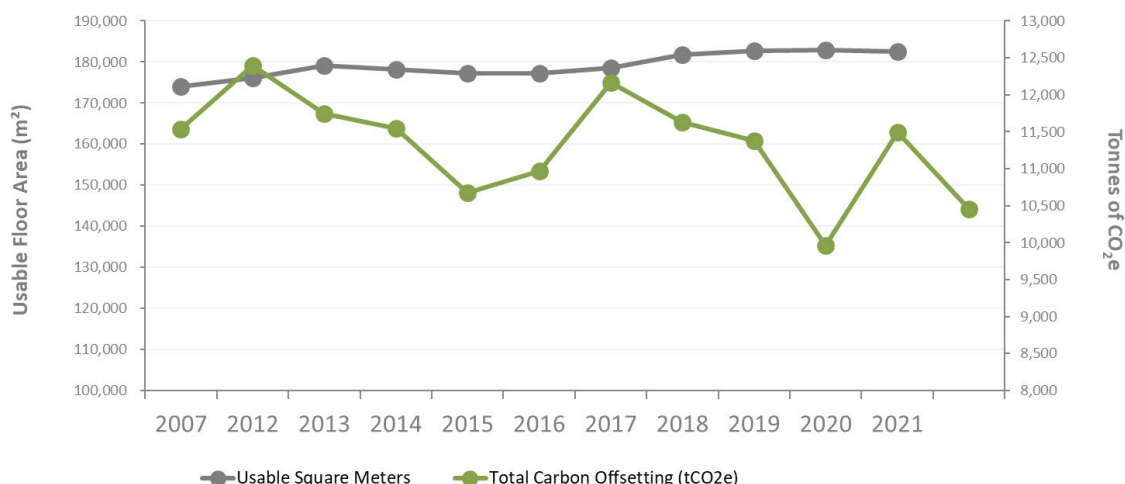
¹ Usable area excludes roof tops, interstitial spaces, and parking areas.

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 PHC's facilities are located across B.C., the majority of buildings are in the metro Vancouver area, so HDD's for Vancouver were used.

Since 2007, PHC's carbon footprint has decreased while usable floor area and staff have increased. As of 2022, emissions per full-time equivalent (1,869 kgCO₂e/FTE) have decreased by 35 per cent since 2007, and emissions per unit of floor area (57 kgCO₂e/m²) have decreased 13 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. PHC's 2022 emissions per HDD (3,562 kgCO₂e/HDD) is 11 per cent less than the baseline year.

PHC Useable Floor Area and Emissions (2007-2022)



Our Carbon Footprint (tCO₂e)		2007	2018	2019	2020	2021	2022
	Mobile fuel combustion (fleet & other mobile equipment)	15	26	50	22	14	14
	Stationary fuel combustion & Electricity (Buildings)	11,448	11,266	11,007	10,340	11,287	10,280
	Supplies (Paper consumption)	70	346	324	202	201	165
	Total carbon emissions (tCO ₂ e)	11,533	11,638	11,380	10,570	11,502	10,512
	Total BioCO ₂ emissions (no offsets required) ^{1, 2}	-1	-4	N/A	-6	-4	-52.8
	Total carbon emissions for offsetting (tCO ₂ e)	11,532	11,634	11,380	10,564	11,497	10,459
	Adjustments / Corrections ³	0	0	0	-606	0	0
	Total Carbon Emissions - for offsetting after adjustments (tCO₂e)	11,532	11,634	11,380	9,958	11,497	10,459

\$	Purchased Carbon Offsets	\$288,300	\$290,850	\$284,500	\$248,950	\$287,425	\$261,475
	Purchased Carbon Offsets +GST	\$302,715	\$305,393	\$298,725	\$261,398	\$301,796	\$274,459

KPI's	Emissions per full-time employee (kgCO ₂ e/FTE)	2,856	2,368	2,248	1,919	2,112	1,869
	Emissions per facility space (kgCO ₂ e/m ²)	66	64	62	54	63	57
	Emissions per heating degree day (kgCO ₂ e/HDD)	4,018	4,277	4,001	3,609	3,999	3,562

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 PHC'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 An adjustment of -606 tCO₂e was applied in 2020 based on an adjustment from 2019.

Legislative Reporting Requirements

Actions taken to Minimize Emissions

Stationary Sources (Buildings):

- **Continuous Optimization:** PHC completed the investigation phase of BC Hydro's Continuous Optimization (C.Op.) Program at Mount Saint Joseph Hospital and the implementation of C.Op program recommendations are now underway. Also, we are looking into implementing control and optimization for other core PHC sites for 2023.
- **Waste Heat Recovery and Energy Upgrades:** PHC fully completed and commissioned major heat recovery projects at several sites, including St. Paul's Hospital, Mount Saint Joseph Hospital, Langara, Holy Family Hospital, Youville and Brock Fahrni. The heat recovery project at Brock Fahrni is one of the most successful projects and will reduce the site's emissions by about 80%. Brock Fahrni continued its successful performance in 2022 with introducing Renewable Natural Gas (RNG) to replace natural gas in the facility, which technically makes the site a net-zero building. We expect the same success story at other sites, such as Langara and Holy Family, when implemented in 2023.
- **Emission Reduction Projects at St. Paul Hospital:** The PHC Energy and Carbon Management team has continued to initiate two significant projects at St. Paul's Hospital, with incentive supports from Fortis BC and Clean BC. The first project is the installation of two electric boilers in phase 1 mechanical room to replace district steam and eliminate steam (which is based on the inefficient natural gas boilers) with electricity. The second project is the installation of three gas boilers in Phase 2 building to replace district steam. These new boilers are highly efficient and have lower CO₂ than district energy. Both of these projects are expected to reduce the annual CO₂ emission by 1,500 tCO₂e.
- **New Innovative Projects for Mount Saint Joseph Hospital:** PHC's energy and carbon management team has initiated a new study for using waste water heat with heat recovery, via a heat pump to preheat hot water tanks. This will significantly reduce the gas consumption for heating the hot water system. The second innovation is the study to design an energy storage system to help shave the peak demand of electricity to save energy consumption and cost.
- **Solar PV panels at Mount Saint Joseph Hospital:** A solar PV system has been installed on the Mount Saint Joseph Hospital roof, and this could generate up to 50 kW electricity for continuous use for the building electrical systems.
- **Leadership and Innovation:** The Energy and Environmental Sustainability team continues to promote energy conservation, GHG emissions reduction and other aspects of environmental sustainability through the GreenCare¹ network and the Green+Leaders community. GreenCare is a network that unites efforts across the B.C. health-care community to advance our health care system toward environmentally sustainable and resilient care for the health of people, place and planet. Green+Leaders² are health care staff engaged in advancing sustainability practices within the health system. Green+Leaders encourage environmentally sustainable behaviour, improve existing processes, and help create an overall culture of environmental health and wellness. Every year, they make a significant contribution to the improvement of Providence's environmental performance.

¹ <https://bcgreencare.ca/take-action/>

² Green+Leaders are health-care staff engaged in advancing sustainability practices within the health system.

Mobile Sources (Fleet and other vehicles)

- PHC Facilities Maintenance and Operations department is part of a new regional steering committee for electric vehicles co-facilitated by Energy and Environmental Sustainability and Integrated Protection Services. The purpose of the Steering Committee is to share experiences and plan for future electric-vehicle (EV) implementation.
- Providence continues to partner with Provincial Health Services Authority and Vancouver Coastal Health to provide a shuttle service between sites.
- Providence sites offer bike parking stalls to encourage and enable active transportation by bike.
- Providence has conducted a comprehensive study for EV-expanding opportunities in all sites to be considered for future installations.

Supplies (Paper Consumption)

- In partnership with other B.C. health organizations, PHC 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. PHC 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. Engaging relevant departments across the health organization is one of the identified ways to act toward formally increasing the volume of PCR paper in inventory.



Public Sector Climate Leadership

Actions Taken to Enhance Climate Resilience and Sustainability

Climate Risk Management

Climate risk and resilience actions taken by Providence in 2022 include:

- Embedded climate resilience into major capital projects, including the new St. Paul's Hospital & Health Campus and St. Vincent's: Heather Long Term Care facility, by providing guidance and support to project teams and consultants throughout the project phase delivery cycle.
- Initiated a portfolio-level climate-hazard exposure screen for nine PHC facilities to identify areas of vulnerability and prioritize actions.
- Continued efforts to upgrade mechanical cooling capacity at all sites, with a focus on long term care facilities.
- Collaborated with PHC Facilities Management, public health teams, and Health Emergency Management BC to continue Seasonal Readiness planning activities, ensuring a coordinated approach to communications and actions before, during, and after extreme-weather events.
- Participated in the Ministry of Health's "From Risk to Resilience" initiative, which included a focused examination of the extreme heat, wildfire, and flood events of 2021.
- Hosted a Green+Leaders lunch and learn to raise awareness of the potential impacts of climate change on the health of long-term care facility occupants.

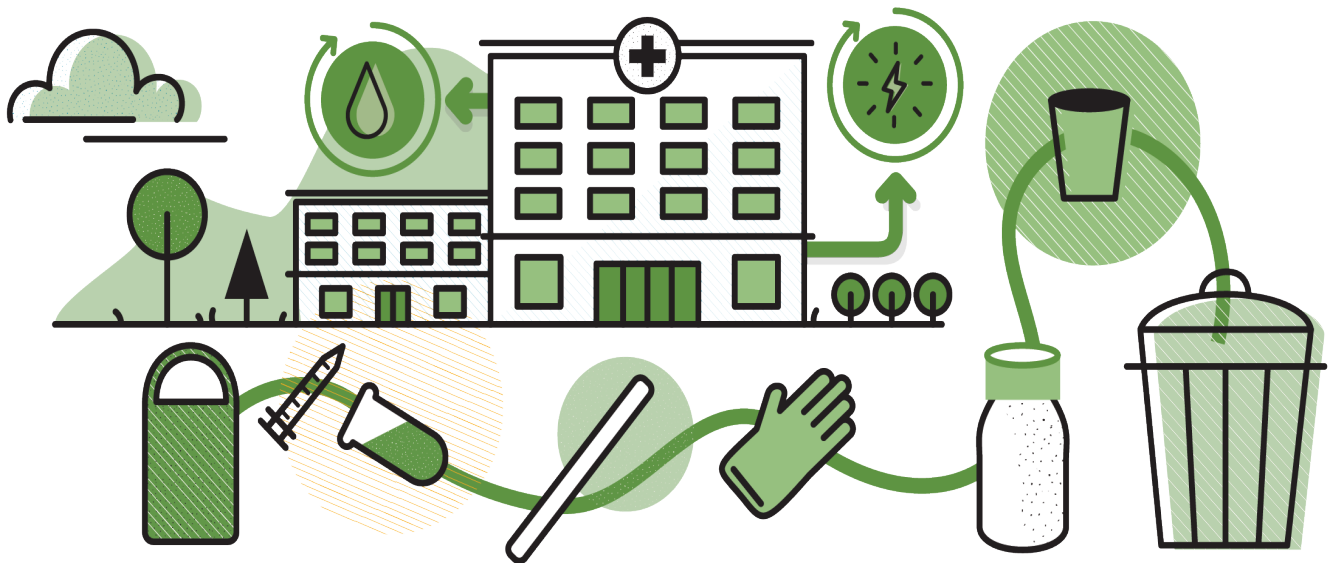


Other Sustainability Initiatives

Environmental sustainability actions taken by Providence in 2022 included:

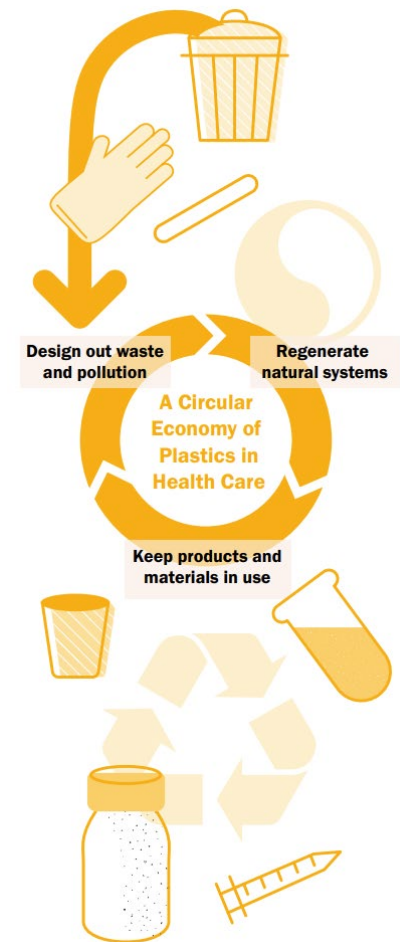
- New Green+Leaders joined the community, a threefold increase from the previous year, for a total of 54 Providence staff that have joined the program since 2009.
- Providence continues to support workplace leadership opportunities that motivate and empower staff to take action. In 2022, the Green+Leaders program facilitated eight orientation sessions, where 12 new Providence Green+Leaders received education, resources and tools to take sustainable action.

- Providence staff are also active members of the GreenCare network, receiving news, health organization updates, and participating in learning events. Highlights from 2022 include 24 new members that joined the network, the launch of the new GreenCare newsletter and seven learning events.
- The GreenCare website provides PHC staff with tools and resources to make environmental improvements at their worksite and contribute to health and wellness in several areas. Success stories are also shared as inspiration for other staff. In 2022, 10 stories were shared that showcased sustainability actions and progress at PHC, and two stories featured Green+Leaders showcasing action in advancing sustainability practices.
- The *Our Resources* section of the website presents a variety of reports, case studies and toolkits. It is the most visited section of the website. The GreenCare website also provides a hub for environmental sustainability-related resources and opportunities and is centered on engaging PHC, and other B.C. health care staff with environmental sustainability and resilience in the workplace.
- With support from Tony Munster, Executive Director, in July 2022, PHC's medical and non-medical staff came together to establish the Environmental Stewardship Team to help PHC meet its sustainability goals. The group's strategy is to coordinate sustainability and climate resilience initiatives across PHC. Members have formed four working groups to address waste reduction and redirection, food quality and sourcing, monitoring and evaluation of sustainability efforts as well as communications and education.
- In alignment and active collaboration with the PHC Communications team, GreenCare and Green+Leaders resources and stories are also shared via PHC internal communication channels. These efforts continue to advance sustainability practices and celebrate PHC staff successes.



- A total of 363 PHC staff engaged with sustainability by taking the annual GreenCare Survey that seeks to understand staff perspectives, familiarity with, and actions related to planetary health, climate change, and environmental sustainability. We learned that for 2022:
 - 62% of PHC staff agree or strongly agree that they know what 'planetary health' means.
 - 90% of PHC staff agree or strongly agree that climate change impacts their health.
 - 10% of PHC staff own an EV (approximately a 0.5% increase from 2021 survey data).
 - 40% of PHC staff reported that they plan to own an EV within the next five years.
 - There was a 2% increase in public transit commuting compared to 2021 survey data.
 - There was an overall 6% increase in sustainable commuting options.
 - There was an overall 6% increase in clean commuting options and there was an 8% decrease in commuting by single occupancy gas or diesel vehicles compared to 2021 survey data.

- PHC staff have access to sustainable transportation education and resources opportunities, through the Sustainable Transportation Series, and through transportation resources available on the GreenCare Website.
- PHC facilities comply with a standardized recycling program³, which includes mixed containers, mixed paper, organic waste and batteries. Depending on collection logistics, some sites may also participate in recycling programs for expanded polystyrene, pallet wrap, printer cartridges, and mattresses, scrap metal, lighting and other materials. Acute care facilities have a target of reaching 40% waste diversion by 2030 and non-acute care facilities have a target of 60%.
- From January 1, 2022 to December 31, 2022, a total of 914 PHC staff completed the online Waste Management Basics Learning Module available on the Learning Hub, and increase of 257 over 2021.
- The Circular Health Care Opportunities Guide was launched on the GreenCare website, a resource that outlines key interventions health authorities can take to reduce waste.
- The GreenCare website underwent a full refresh and relaunched in October 2021. In 2022, we have averaged 1,250 users a month and have observed increased engagement and actions taken by the users once on the site. Our Resources section of the website that presents a variety of reports, case studies and toolkits is the most visited section of the website. The GreenCare website also provides a hub for environmental sustainability-related resources and opportunities and is centered on engaging PHSA and other B.C. health care staff with environmental sustainability and resilience in the workplace.
- PHC Supply Chain and BC Health Authority Environmental Sustainability teams initiated a working group on Sustainable Procurement. PHC Supply Chain provides all elements of supply chain management including contracting and materials management on behalf of all 6 B.C. health authorities.
- Environmental questions were added to Facilities Management pre-qualification of 19 consulting categories such as: Architectural Services, Professional Engineers, Functional Program, Clinical Health Services, and Asset Management Services.
- In 2022, the Energy and Environmental Sustainability team continued working toward updating the design guidelines for health care new construction and major retrofits. The new guidelines are called Low Carbon Resilience and Environmental Sustainability (LCRES) Guidelines for Health-care New Construction and aims to:
 - Provide a set of recommendations to inform the detailed design phase of new and replacement construction for acute and long-term care facilities
 - Inform all members of a project team in the development of project components specific to the Statement of Requirements and the Low Carbon Resilience and Environmental Sustainability Scope of Work
 - Enable the highest standard of human and environmental health within health-care facilities
- In 2021, the PHC Energy Management team launched an innovative Waste-to-Energy project in partnership with the UBC Bioenergy department. This work continued in 2022 with the objective to collect food waste from PHC facilities and to convert into fuel (biogas) and fertilizer – thus preventing waste addition to landfills and making use of the byproduct of this conversion.

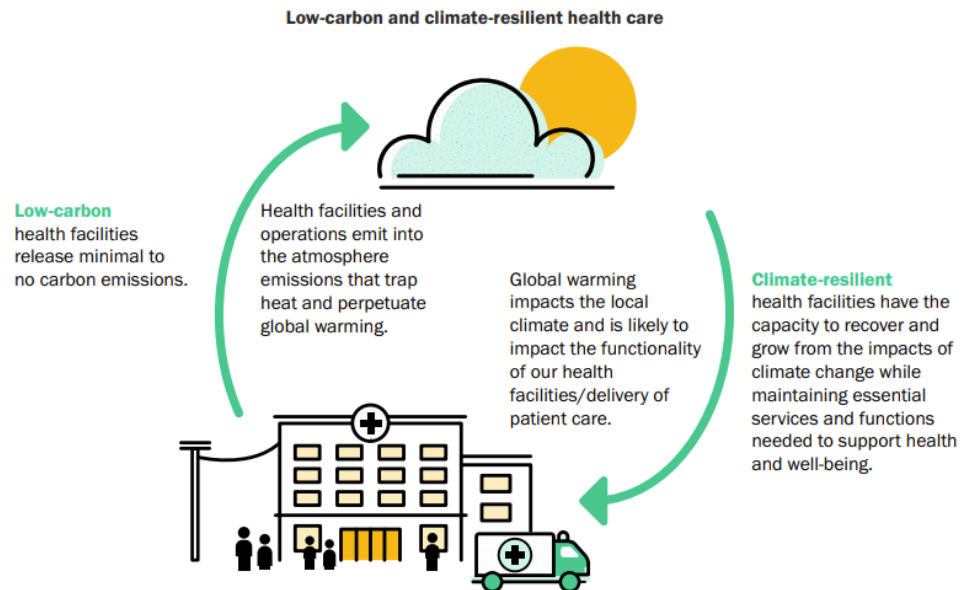


³ In 2022, recycling has slowly returned to larger acute care sites, but has not yet reached pre-2020 service levels.

Plan to Continue Reducing Emissions

PHC plans to continue reducing GHG emissions and energy in the following ways:

- **Energy Conservation and GHG Reduction Measures:** Planning and implementing more projects in energy efficiency and carbon emissions reduction projects in our existing building portfolio by utilizing the Carbon Neutral Capital Program (CNCP) as our primary funding source and taking advantage of other incentives from Fortis BC, Clean BC and BC Hydro.
- **Low Emission New Construction:** Implementing low carbon emission facilities such as new St. Paul's Hospital and new St. Vincent's: Heather Long Term Care Home projects. These facilities are designed for high or fully electrification systems, which are aligned with the emission targets of Providence environmental approach.
- **Environmental Sustainability Policy:** Providence has established Environment and Sustainability Committee, which works in collaboration with EES team to introduce more behavioral change and staff engagement align with the environmental policy of Providence.
- **Managing Climate Risks and Resiliency:** In collaboration with EES team, providence is providing guidelines for reviewing and finding solutions for lowering the climate change risks and resiliency to health care facilities.
- **Systemic Approach:** Implementing standards, guidelines and processes to embed energy and carbon management principles further into standard operations.
- **Behavior Change and Staff Engagement:** Engaging and educating our staff, via the existing Green+Leaders program, GreenCare network and through collaboration with PHC's Environmental Stewardship, Promotions Initiative team and Communications teams.
- **Innovation and Demonstration:** Leveraging the innovative Green Revolving Fund approach that has been initiated for PHC to support.
- **Ongoing Investment in Energy Conservation:** Investment on low carbon electrification for all the building utilizing Clean BC incentives will be our main focus in upcoming years.
- **Align With Our Core Mandate:** Striving to advance health care practices that respect environment stewardship by working with the Energy and Environmental Sustainability team'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. PHC 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.



Success Stories

Energy Efficiency and Carbon Emissions Reduction

In 2022, Providence managed to complete and fully commission several emission reduction projects in our core facilities including Mount Saint Joseph, Holy Family Hospital, Brock Fahrni, Youville and Langara. PHC also have started designing two new construction projects. These projects are under construction and on schedule as planned:

1. During 2022, new St. Paul's Hospital reached 90% detailed design. This project is a low-emission hospital with the target of achieving Leadership in Energy and Environmental Design (LEED) Gold certification, which is an international symbol of sustainability excellence and green building leadership.
2. St. Vincent: Heather Long Term Care facility was approved for construction in 2022. This facility will be designed for full electrification and will be a zero carbon emission building.



New St. Paul's Hospital Image



New St. Vincent's: Heather Long Term Care Image

In 2022, the PHC Energy Management team initiated three major studies for implementing emission reduction projects:

1. **Mount Saint Joseph Hospital Full Electrification:** An upgrade of the existing building to full electrification by adding two electric boilers, which will provide the heating and hot water for the building. It should be mentioned that we already implemented several energy efficiency projects in this facility to reduce the emission by approximately 80%. This new project should result in a zero emission facility by fully switching from natural gas to electricity. Despite some challenges due to the need for extra electrical capacity, we are confident following discussions with BC Hydro that this extra capacity will be provided and project will move forward to implementation.
2. **Existing St. Paul's Hospital Electrification:** Installation of two electrical boilers in the Phase 1 building, which replaces steam from the district energy system and will reduce the emission by more than 900 tCO₂ per year.
3. **Existing St. Paul's Hospital Steam Conversion:** Installation of efficient natural gas boilers to enable disconnection of the external high-emission steam energy source, which will reduce the emissions by 600 tCO₂ per year.

PHC also continued working on a Waste-to-Energy project, which is a research and development pilot project in collaboration with UBC. The goal of this project is to install innovative equipment to treat food waste from our health care facilities to make new products, such as fuel gas and fertilizer in a digestion process. By completing this project we will use our own food waste instead of sending it to landfill. This is a big step towards zero waste program.