

GreenCare
2017

Environmental Performance
Accountability Report

FRASER HEALTH





This is an interactive (clickable) report; you can easily navigate, link between sections and to areas that most interest you.

For details on our programs, progress and achievements click on any of our five GreenCare Focus Areas below.

The Energy and Environmental Sustainability (EES) Team has drawn the information in this report from various sources, including the Lower Mainland Facilities Management, and Business Initiatives & Support Services. As such, in addition to images from Fraser Health, this report may also include images from Providence Health Care, Provincial Health Services Authority and Vancouver Coastal Health.

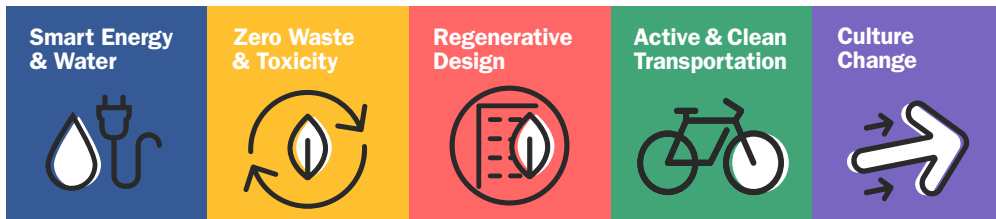
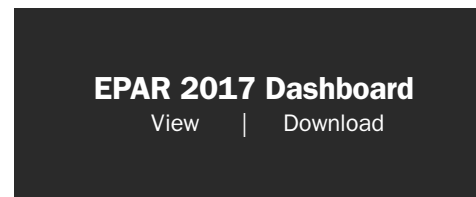


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1.0 INTRODUCTION

Welcome to the sixth annual
Environmental Performance Accountability Report (EPAR).

GreenCare 2017

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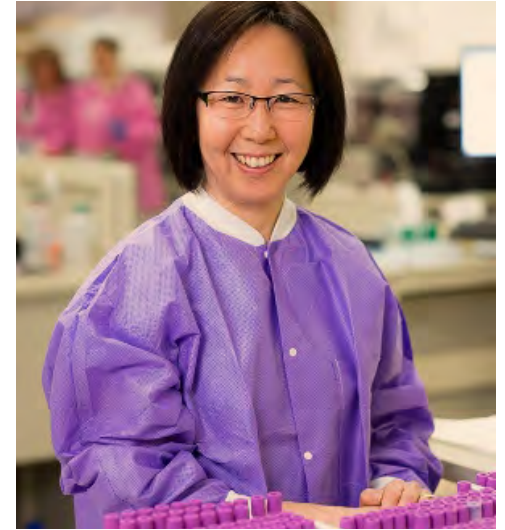
Assurances and Resources

Downloads

Full 2017 EPAR ↓

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This report has been compiled by the **Energy and Environmental Sustainability Team (EES)** (a service line of the Lower Mainland Facilities Management), which serves the four health care organizations in British Columbia's Lower Mainland: Fraser Health, Providence Health Care, Provincial Health Services Authority, and Vancouver Coastal Health (referred to collectively as the Lower Mainland Health Care Organizations or LMHOs).

The EES Team conducts research, develops programs, guidelines and policies, and oversees collaborative approaches and processes related to energy and environmental sustainability for the four LMHOs. Our goal is to reduce the environmental impacts and increase the resilience of our health care facilities. Just as we recognize that health is not simply the absence of disease, we are striving to go beyond simply reducing negative environmental impacts by seeking

solutions that restore, renew, and revitalize environmental health across our local and regional communities.



1.1 Report Purpose

The Environmental Performance Accountability Report is an annual report voluntarily compiled by the EES Team (on behalf of the four LMHOs) for transparency and accountability.

The purpose of this report is to summarize and relay our initiatives, progress and results for the 2017 calendar year, and to provide an overview of our team and the health organizations we serve.

Our target audience includes:

- Senior leadership in health care
- Internal health care staff
- All members of the Provincial Government and the communities in which we serve

1.2 A Note of Thanks

We're proud of what we've accomplished and of our ongoing efforts to reduce the energy and environmental impacts of our health care facilities and services, with the ultimate purpose of improving the health of our communities.

We thank you for taking the time to learn more about our team and our work. Your feedback is always appreciated, and we invite you to send any questions or comments to the relevant email address:

- greencare@fraserhealth.ca
- greencare@providencehealth.bc.ca
- greencare@phsa.ca
- greencare@vch.ca

- Energy & Environmental Sustainability Team
- Fraser Health Overview

2.0 WHO WE ARE

Created in 2010, the Energy and Environmental Sustainability Team (EES) has the core function of ensuring a collaborative energy and environmental sustainability approach across the Lower Mainland Health Care Organizations. EES is governed by the Lower Mainland Facilities Management and receives strategic direction from the Environmental Sustainability Advisory Committee.



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2.1 Energy & Environmental Sustainability Team

The Lower Mainland Health Care Organizations (LMHOs) have all adopted similar sustainability policies to help govern and bring accountability to environmental sustainability work across the four organizations. In addition, these policies provide a high-level statement of commitment for efforts to improve the sustainability of the LMHOs.

The Energy and Environmental Sustainability (EES) Team was created in 2010 to ensure a collaborative energy and environmental sustainability approach, and the core function of our team is to systematically embed environmental, economic and social sustainability policies, principles and processes across the LMHOs.

Team Vision

Transforming health care for a thriving environment of health and wellness.

To ensure our work is conducted as efficiently and effectively as possible, the EES Team is structured into two specialized but collaborative groups: 1) Energy Management and 2) Sustainable Systems. The Energy Management group is primarily focused on energy and carbon reduction along with climate resilience and adaptation. The Sustainable Systems group has a broad scope that supports energy reduction through culture change, environmentally safe chemical use, material waste reduction and education of staff on healthier modes of commuting.

LMHOs Sustainability Policy

The LMHOs will act as leaders with respect to environmental stewardship while engaging the health care community in a collaborative approach towards sustainability.

Ministry of Health

Lower Mainland Health Care Organizations

Fraser Health	Providence Health Care
Provincial Health Services Authority	Vancouver Coastal Health

Lower Mainland Facilities Management

Paul Becker Chief Facilities Management Officer & Chief Projects Officer
Mauricio Acosta Executive Director, Facilities Management, Business Performance & Corporate Support

Energy & Environmental Sustainability Team

Robert Bradley Interim Director of Energy & Environmental Sustainability

Energy Management Group

Alex Hutton
Energy Manager

Kori Jones
Energy Manager

Jeson Mak
Interim Energy Manager

Sabah Ali
Energy Coordinator

Alan Lin
Energy Coordinator

Jacob Vu
Energy Specialist

Richard Wellwood
Energy Specialist

Angie Woo
Climate Resilience & Adaptation Lead

Sustainable Systems Group

Glen Garrick
Sustainability Manager

Marianne Dawson
Sustainability Consultant

Ghazal Ebrhimi
Sustainability Consultant

Ashley Edworthy
Sustainability Consultant

Sonja Janousek
Sustainability Consultant

Eiselle Omampo
Transportation Demand Management Coordinator

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I'm very proud to lead the Energy and Environmental Sustainability Team. This dynamic team is made up of two collaborative groups: Energy Management Group and Sustainable Systems Group. Both teams are guided by a coordinated effort with a shared vision, goals, targets and approach. This enhances efficiency and leverages the collective knowledge of the team for the benefit of each health care organization.

Robert Bradley
Interim Director of Energy
and Environmental Sustainability



The Energy Management Group is focused primarily on reducing energy consumption and associated operating costs and carbon emissions; however, we also seek opportunities that achieve synergistic co-benefits such as improving occupant comfort, prolonging asset life cycle and increasing resilience. Our work can be summarized within five main areas: optimizing our existing buildings; influencing new construction and major renovations; conducting behaviour-change and education campaigns; affecting systemic change by embedding energy management into standard business practices; and achieving small steps towards larger leaps through innovation.

Alex Hutton
Energy Manager



The Sustainable Systems Group is focused on integrating sustainability within operational processes and systems. At a high level, we're striving for health care operations that won't compromise the natural environment or the ability of future generations to meet their needs. Our strategies include staff engagement and process changes to promote healthier ways of commuting and to reduce waste, energy, water and chemical use. Through our new Building Sciences initiative, we also create guidelines around construction design, promote green rating systems, conduct post-occupancy evaluations and support integrated project management.

Glen Garrick
Sustainability Manager

- Energy & Environmental Sustainability Team
- Fraser Health Overview



2.2. Fraser Health

Fraser Health is the largest health authority in B.C., delivering a wide range of health care services to more than 1.8 million people within 20 municipalities: Abbotsford, Anmore, Belcarra, Burnaby, Coquitlam, Delta, City of Langley, Township of Langley, Maple Ridge, New Westminster, Pitt Meadows, Port Coquitlam, Port Moody, Surrey, White Rock, Mission, Chilliwack, Harrison Hot Springs, Hope and Kent.

The communities served by Fraser Health are as diverse culturally as they are geographically and include First Nations residents associated with 32 bands, new Canadians and refugees.

Facilities and services are designed to provide each patient (from newborns to centenarians) with the right care at the right time and place, whether in hospital, in an outpatient clinic, in a centre for mental health and substance use, or at home.

The employees, physicians, volunteers and health care partners of Fraser Health are committed to values of respect, caring and trust in pursuit of their guiding vision: “Better health. Best in health care.”

To view a Carbon Neutral Action Report for Fraser Health click below:

Fraser Health CNAR [↓](#)

Key Stats^a

676,239_{m²}

Usable Facility Space

147

Distinct Buildings

18,332

Full-Time Equivalent Staff^b

a. As reported in the annual *Fraser Health Carbon Neutral Action Report*.

b. FTEs include all designated groups reported in *Health Sector Compensation Information System*: Physicians (doctors on staff), Executive/Excluded, Non-Union, and Bargaining Unit Employees (Community, Facilities, Health Science Professionals, Nurses, Residents).

- Goals of Local and Global Sustainability
- A Purpose-Driven Strategy
- Milestones and Awards

3.0 WHAT WE DO

The Energy and Environmental Sustainability (EES) Team is tasked with leading all energy and environmental sustainability work across the four Lower Mainland Health Care Organizations (Fraser Health, Providence Health Care, Provincial Health Services Authority, and Vancouver Coastal Health) with the goals of reducing the environmental impact of our facilities and services and aligning ourselves with global standards of sustainable development.

- Goals of Local and Global Sustainability
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3.1 Goals of Local & Global Sustainability

Reducing Our Environmental Impact to Improve Human Health

According to the World Health Organization, an estimated 24% of the burden of disease and 23% of all deaths can be linked to environmental factors.^c

It is estimated that the operation of Canadian hospitals is responsible for 11% of total public energy consumption and a related 8% of public greenhouse gas (GHG) emissions.^d Material health care waste (solid waste) sent to a landfill produces methane gas, another GHG, while incinerated health care waste has additional negative impacts on air quality. In general, the GHG impact on the environment has intensified climate change (and resulting heat waves, flooding, wildfires, and droughts), which is recognized as “the biggest global health threat of the 21st century.”^e

Health care practices also create a pronounced risk to environmental and human health through chemical usage and the disposal of cleaning supplies, lab chemicals or pharmaceuticals — which also pose a potentially compounding risk of infecting occupants with harmful microorganisms (that could be drug-resistant) and spreading the microorganisms from health care facilities into the environment.^f

In order to improve environmental and human health, it's essential for health care providers to reduce their energy use, water use, chemical use and production of material waste. Addressing external, associated activities that support health care operations is just as important as examining the internal system.

A large percentage of health care workers commute to work in single-occupancy vehicles, and a majority of these vehicles have internal combustion engines, which are significant contributors to air pollution and greenhouse gas emissions. Every year, 7,700 people die in Canada from air pollution.^g By increasing the number of healthy commutes (e.g., public transportation and active transportation), we'll make a positive impact on the environment and the quality of our air.

Moreover, cultural norms are a significant part of the problem and a key to meaningful change. Sitting, for example, is considered the “new cancer.”^h Human and environmental health will improve with small cultural shifts to combat our sedentary lifestyle — biking and walking vs. driving, and standing at desks vs. sitting.

As health care providers, it is our responsibility to understand the link between environmental and human health and to ensure our practices have a positive impact on these interconnected systems. The Energy and Environmental Sustainability Team works to reduce the impact of the Lower Mainland Health Care Organizations with the primary goal of improving the health of our communities. Our efforts are aligned with and contribute to local, regional and global strategies for improved human and environmental health.

c. *Public health, environmental and social determinants of health*

d. *“Green is Green” Improving the Health, Economic and Environmental Impact, Resilience and Sustainability of Canada’s Hospitals through Green Infrastructure*

e. *Tackling climate change: the greatest opportunity for global health*

f. *WHO Health Care Waste*

g. *Air pollution results in 7,700 premature deaths in Canada each year*

h. *Is Sitting The New Cancer?*

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3.2 A Purpose-Driven Strategy

The Lower Mainland Health Care Organizations (LMHOs) are purpose-driven in their long-term, forward-looking plans to improve human health by reducing the environmental impacts of health care facilities and services. The Energy and Environmental Sustainability (EES) Team (on behalf of the four LMHOs) serves this purpose with strategies that address not only health care sites and campuses but also the larger regional environment and the health of our communities.

Embedding Environmental Health and Wellness

At the core of our work, the EES Team has created [guidelines](#) for health care facility design, construction and operations to ensure that our strategies for environmental (and human) health and wellness are embedded into the design and processes of our facilities.

The following best practices in design and construction are considered in the creating of these guidelines:

1 **Leadership in Energy and Environmental Design for Health Care (LEED HC)**

LEED HC is a global green-building rating system that provides a framework for creating healthy, sustainable, energy- and cost-efficient health care buildings. A LEED certification is recognized globally as a sustainability achievement. The final designation (rating) is determined by the independent Green Building Council.

2 **WELL Building Standard**

The WELL Building Standard is another global rating system that empowers project teams to focus exclusively on human health and wellness in facility design. The WELL Building Standard brings together evidence-based medical and scientific research and best practices in design and construction.

3 **Healthy Built Environment**

The Healthy Built Environment Linkages Toolkit is maintained by the Population and Public Health team at the BC Centre for Disease Control, under the leadership of the BC Healthy Built Environment Alliance Steering Committee. The Toolkit is intended to support the inclusion of health considerations within community planning and design.

4 **EES Goals and Targets**

Facility design and construction guidelines are continuously aligned with the EES Goals and Targets. This is especially important noting the evolving nature of Climate Resilience, energy conservation, and carbon reduction work and best practices across the region and the LMHOs.”



- Goals of Local and Global Sustainability
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Development of the GreenCare Initiative

To address the LMHOs cross-organizational commitment to energy and environmental sustainability, the EES Team developed the GreenCare initiative ([Section 4.0](#)) and related strategic framework to organize and guide collaborative efforts between the LMHOs and across B.C.

Through the various GreenCare strategies and programs, the Lower Mainland Health Care Organizations strive to:

- Demonstrate corporate and grassroots commitment by becoming regional and national leaders in energy and environmental sustainability.
- Encourage and embed conservation by reducing utility and carbon costs through changes in behaviour and key decision-making.
- Develop community sharing by creating a sense of teamwork, shared goals, best practices and values among employees.
- Change work culture by linking personal health and healing to environmentally conscious work attitudes and behaviours.

GreenCare Vision Statement

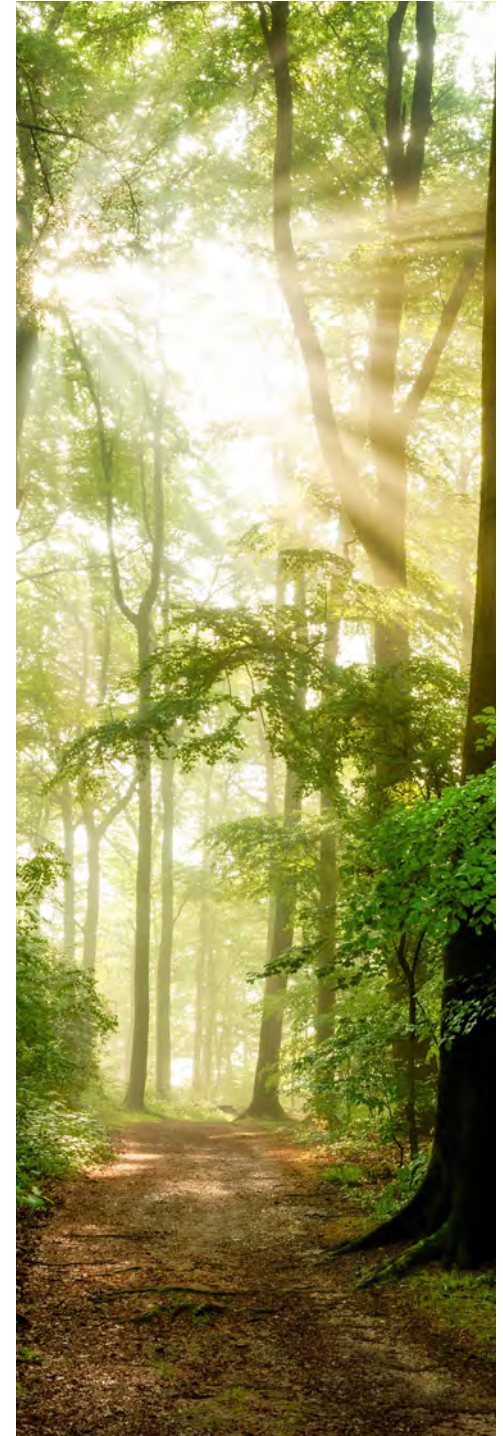
To promote an environmentally conscious culture that is actively aware and engaged in creating sustainable solutions for healthy lives and a healthy community.

Environmental Sustainability Policy

The LMHOs will act as leaders with respect to environmental stewardship while engaging the health care community in a collaborative approach towards sustainability.

Monitoring of Core Sites

Across all four LMHO's, an estimated average of 90% of total square meters of facility space in our health care organizations are monitored and/or metered by our team for either energy management, water management or recycling renewal. We refer to these buildings and campuses as "core sites." The LMHOs strive to ensure that all sites, no matter the facility or staff size, are adequately monitored for energy, water and waste.



- Goals of Local and Global Sustainability
- A Purpose-Driven Strategy
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3.3 Milestones and Awards

Fraser Health

2009

- BC Hydro recognition of most electrical energy savings in their Commercial Energy Program

2010

- BC Hydro Power Smart Energy Manager of the Year Award
- Recycling Renewal Program launched
- Green+Leaders created

2011

- Sustainability Policy adopted
- BC Hydro top ranked overall public sector Power Smart Partner from Apr-10 to Jun-11

2012

- BC Hydro Power Smart Leadership Excellence Award
- BC Hydro top ranked health sector Power Smart Partner from Apr-11 to Jun-12

2013

- BC Hydro Outstanding Service Award, Green+Leaders
- GreenCare Community website launched

2014

- BC Hydro Power Smart Leadership Excellence Award

2015

- Above and Beyond Collaborative Partnerships Award: Energy & Environmental Sustainability Team
- Launch of the Green Revolving (Facilities) Fund

2016

- 100% implementation of the Recycling Renewal Program across all acute and residential care health care sites
- Launch of the Climate Resilience & Adaptation Program

- Strategic Framework
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4.0 OUR GREENCARE INITIATIVE

Led by the Energy and Environmental Sustainability (EES) Team, the GreenCare initiative is an umbrella for a wide range of energy and environmental sustainability strategies, programs and projects to reduce the environmental impact of health care operations and improve the resiliency of health care facilities and human and environmental health.

- Strategic Framework
- Focus Areas
- Goals
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4.1 Strategic Framework

The GreenCare Strategic Framework addresses the Lower Mainland Health Care Organizations' (LMHOs) collective commitment to improving environmental and human health while encouraging all internal departments, staff and key external stakeholders to work together to accomplish a culture of conservation.

The Strategic Framework includes three goals, four principles, five focus areas and nine programs, as well as five main groups of partners and collaborators (illustrated in the Strategic Framework diagram to the right).

GreenCare Goals

- 1 Healthy Communities
- 2 Healthy Workplaces
- 3 Healthy Environment

GreenCare Principles

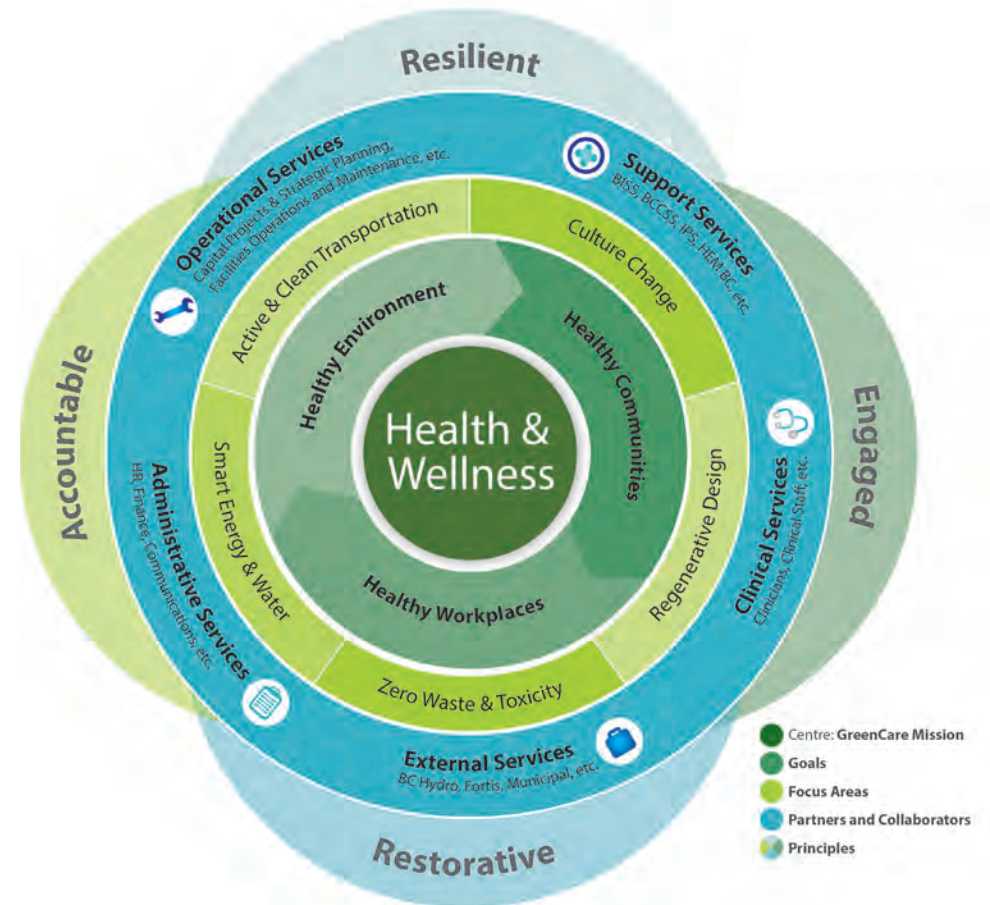
- 1 Resilient
- 2 Accountable
- 3 Restorative
- 4 Engaged

GreenCare Focus Areas

- 1 Smart Energy & Water
- 2 Zero Waste & Toxicity
- 3 Regenerative Design
- 4 Active & Clean Transportation
- 5 Culture Change

GreenCare Programs*

- 1 Greenhouse Gas Emissions Management
- 2 Climate Resilience and Adaptation
- 3 Commuter Services
- 4 Energy Management
- 5 Environmentally Preferable Purchasing
- 6 Green+Leaders
- 7 GreenCare Community
- 8 Recycling Renewal
- 9 Water Management



*The EES team is in the process of developing website pages for all the GreenCare programs. Links have been provided for the programs in which website program pages have been completed.

- Strategic Framework
- Focus Areas
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4.2 Focus Areas

The GreenCare Strategic Framework outlines the following five Focus Areas and Associated Goals that the EES Team (on behalf of the four LMHOs) leads efforts towards, in service of the GreenCare vision.



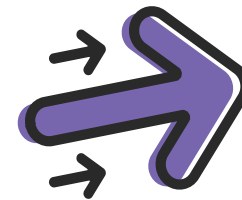
Smart Energy & Water

Minimize energy and water consumption as well as GHG emissions to reduce costs and environmental impacts, helping to ensure the health, wellness, and resiliency of our living environments.



Regenerative Design

Achieve a built environment that is “net-positive” and climate resilient, and enriches health and wellness.



Culture Change

Integrate the environmental impact of health care operations, and its connection to the health of populations, into decision-making priorities, workplace practices and organizational values.



Zero Waste & Toxicity

Minimize waste generated and toxic chemicals used by the health care system and supporting operations.



Active & Clean Transportation

Ensure a health care system in which employees travel between sites in a manner that reduces GHG-related pollutants, minimizes the need for on-site parking and increases overall health and wellness.

The EES Team’s programs and achievements are discussed in detail under each of these five Focus Areas in [Section 5.0](#).

- Strategic Framework
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4.3 Goals

Each of the five Focus Areas has an Associated Goal and measurable Key Performance Indicators (KPIs) for that Goal. The Goals and KPIs provide a baseline, measure and direction for reaching specific 2020 and 2030 targets. The EES Team established these goals, KPIs and

targets with the support and governance of the approval and governance of the **Environmental Sustainability Advisory Committee** (a collective of key senior executives from each of the four LMHOs).

Goals by Focus Area

Smart Energy & Water	<ul style="list-style-type: none"> ▪ Reduce Energy Use Intensity (EUI) of core sites. ▪ Reduce absolute In-Scope GHG emissions. ▪ Reduce absolute In-Scope GHG emissions intensity. ▪ Reduce Water Use Intensity (WUI) of core sites.
Zero Waste & Toxicity	<ul style="list-style-type: none"> ▪ Increase waste diversion rates at existing acute and residential care sites. ▪ Increase waste diversion rates at all new health care construction projects. ▪ Decrease food scraps in the garbage waste stream.
Regenerative Design	<ul style="list-style-type: none"> ▪ Promote performance-based sustainability requirements for new construction projects (minimum Leadership in Energy Environmental Design Gold for Health Care certification). ▪ Develop one regional climate resilience report and one climate adaptation plan. ▪ Develop Resilience Design Guidelines for Health Infrastructure.
Active & Clean Transportation	<ul style="list-style-type: none"> ▪ Improve health care staff commute via cleaner and healthier means (i.e., other than single occupancy vehicles). ▪ Increase portion of core sites that provide end-of-trip bicycle facilities/storage options.
Culture Change	<ul style="list-style-type: none"> ▪ Support overall awareness by maintaining a specific number of posted good-news stories on various internal communication channels. ▪ Increase the number of staff directly trained in energy and environmental sustainability workplace practices. ▪ Support innovation and organizational improvement through the funding of staff initiated green sustainability projects.

- Strategic Framework
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4.4 2017 GREENCARE DASHBOARD

Each year the EES Team produces a scorecard, which we refer to as the GreenCare Dashboard, to evaluate our team’s progress in meeting GreenCare’s 2020 targets.

Graded by the Director of Energy & Environmental Sustainability, the following 2017 Dashboard uses a “traffic light” measurement for each of our Key Performance Indicators to communicate organizational performance and overall pace towards achieving each specific target by 2020.

To learn more about this dashboard and GreenCare, please go to bcgreencare.ca

Goals	Key Performance Indicators (KPIs) and Baseline (if applicable)	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance
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Smart Energy & Water

Minimize energy and water consumption and GHG emissions to reduce costs and environmental impacts, helping to ensure the health and wellness of our living environments.

Reduce Energy Use Intensity (EUI) of core sites. ^a	EUI (ekWh/m ² /year) (2007 Baseline)	11.9%	15%	●	0.9%	5%	●	8.8%	12%	●	10.7%	15%	●
Reduce absolute in-scope GHG emissions. ^b	GHG emissions (tCO ₂ e/year) (2007 Baseline)	-10.8%	5%	●*	4.0%	10%	●	22.7%**	25%	●	11.8%	25%	●
Reduce absolute in-scope GHG emissions ^b intensity. ^c	GHG emissions intensity (tCO ₂ e/year/m ²) (2007 Baseline)	11.8%	15%	●	6.5%	15%	●	28.2%	30%	●	23.9%	30%	●
Reduce Water Use Intensity (WUI) of core sites. ^a	Water Use Intensity (m ³ /m ² /year) ⁵ (Baseline 2010)	20.5%	20%	●	7.5%	15%	●	1.4%	10%	●	7.3%	10%	●



Zero Waste & Toxicity

Minimize waste generated and toxic chemicals used by the health care system and supporting operations.

Increase waste diversion rates at existing acute and residential care sites. ^d	Percentage of waste diverted (annual average)	39%	50%	●	41%	50%	●	31%	50%	●	38%	50%	●
Increase waste diversion rates at all new health care construction projects.	Percentage of waste diverted (annual average)	88.6%	80%	●	No projects	80%	●	78.5%	80%	●	88.4%	80%	●
Decrease food scraps in the garbage waste stream. ^e	Percentage of food waste in waste streams (annual average)	9.7%	<5%	●	Not measured ^f	<5%	●	9%	<5%	●	16.0%	<5%	●

- Work on track, ahead of schedule or exceeding
- Work on track but requires monitoring
- Work in progress but falling behind schedule

a. Facilities that are actively monitored for energy and water efficiency (primarily owned and operated sites).

b. "Absolute" emissions refers to total emissions regardless of growth change. "In-scope" emissions are from owned and leased buildings, fleet travel and paper use (as defined in relation to the GHG Reduction Targets Act).

c. It is recognized that water consumption is more directly influenced by staff count per facility. Due to the uncertain and changing nature of staff counts, for the time being we will use facility space for the intensity metric.

d. Waste diversion data does not include segregated bio-medical waste.

e. Food scraps in the garbage waste stream are audited every two years. The next scheduled audit period is in 2018. It is assumed performance has not changed from 2016.

f. The 2016 audit of PHC food scraps was too narrow in scope to be considered valid for the entire organization.

* Fraser Health's absolute emissions have gone up in relation to expanded services including a significant increase in facilities' space and staffing, but overall intensity has gone down.

** PHSA's carbon footprint decreased significantly in 2013, largely due to the decommissioning of the Riverview property.

GreenCare Focus Areas

Fraser Health

Providence Health Care

Provincial Health Services Authority

Vancouver Coastal Health

Goals	Key Performance Indicators (KPIs) and Baseline (if applicable)	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance
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Regenerative Design

Achieve a built environment that is energy net-positive, is climate resilient, and enriches health and wellness.

Promote performance-based sustainability requirements for new construction projects (minimum LEED Gold for Health Care certification).	Percentage of projects with requirements	100%	100%	●	100%	100%	●	100%	100%	●	100%	100%	●
Develop one regional climate resilience report and one climate adaptation plan.	Number of reports	Work initiated in 2017	1 LMHO Report	●	Work initiated in 2017	1 LMHO Report	●	Work initiated in 2017	1 LMHO Report	●	Work initiated in 2017	1 LMHO Report	●
Develop Resilience Design Guidelines for Health Infrastructure.	Number of plans or reports/organization	Work initiated in 2017	2 set of LMHO guidelines	●	Work initiated in 2017	2 set of LMHO guidelines	●	Work initiated in 2017	2 set of LMHO guidelines	●	Work initiated in 2017	2 set of LMHO guidelines	●



Active & Clean Transportation

Ensure a health care system in which employees commute/travel between sites in a manner that reduces GHG-related pollutants, minimizes the need for onsite parking, and increases overall health and wellness.

Improve health care staff commutes via cleaner and healthier means (i.e., other than Single Occupancy Vehicles).	Percentage of annual staff commute via cleaner and healthier means (2016 Baseline)	26.3%	35%	●	58.2%	65%	●	54.3%	60%	●	51.7%	60%	●
Improv portion of core sites that provide end-of-trip (EOT) bicycle facilities/storage options. ^g	Percentage of core sites with EOT facilities	44.0%	50%	●	28.6%	50%	●	62.5%	75%	●	61.9%	75%	●

- Work on track, ahead of schedule or exceeding
- Work on track but requires monitoring
- Work in progress but falling behind schedule

**GreenCare
2017**

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^g. End-of-trip facilities must include a minimum of one on-site shower/ changing facility and a minimum of bicycle secure storage for 5% of on-site staff.

Goals	Key Performance Indicators (KPIs) and Baseline (if applicable)	Fraser Health			Providence Health Care			Provincial Health Services Authority			Vancouver Coastal Health		
		2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance	2017 Results	2020 Targets	"Traffic Light" Performance



Culture Change

Integrate the environmental impact of health care operations and its connection to the health of populations into decision-making priorities, workplace practices and organizational values across the Lower Mainland Health Care Organizations (LMHOs).

<p>Awareness & Reinforcement: Support overall awareness by maintaining a specific number of posted good news stories.</p>	Number of stories per year	17	24	●	16	12	●	16	24	●	16	24	●
<p>Knowledge: Increase the number of staff directly trained in energy and environmental sustainability work place practices.^h</p>	Percentage of total staff (annual)	2% <small>(371 total staff since 2012)</small>	5%	●	1.8% <small>(86 total staff since 2012)</small>	5%	●	4.4% <small>(401 total staff since 2012)</small>	5%	●	1.4% <small>(22 total staff since 2012)</small>	5%	●
<p>Desire & Ability: Support innovation and organizational improvement through the funding of staff initiated green sustainability projects.</p>	Number of projects per year	3	10	●	2	5	●	2	10	●	2	10	●

- Work on track, ahead of schedule or exceeding
- Work on track but requires monitoring
- Work in progress but falling behind schedule

^h. This includes all staff trained under the Green+Leaders program, Recycling Champions program and Facilities EnergyWise program.

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5.0 FIVE GREENCARE FOCUS AREAS

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5.1 SMART ENERGY & WATER

Minimize energy and water consumption and greenhouse gas (GHG) emissions to reduce costs and environmental impacts, helping to ensure the health and wellness of our living environments.



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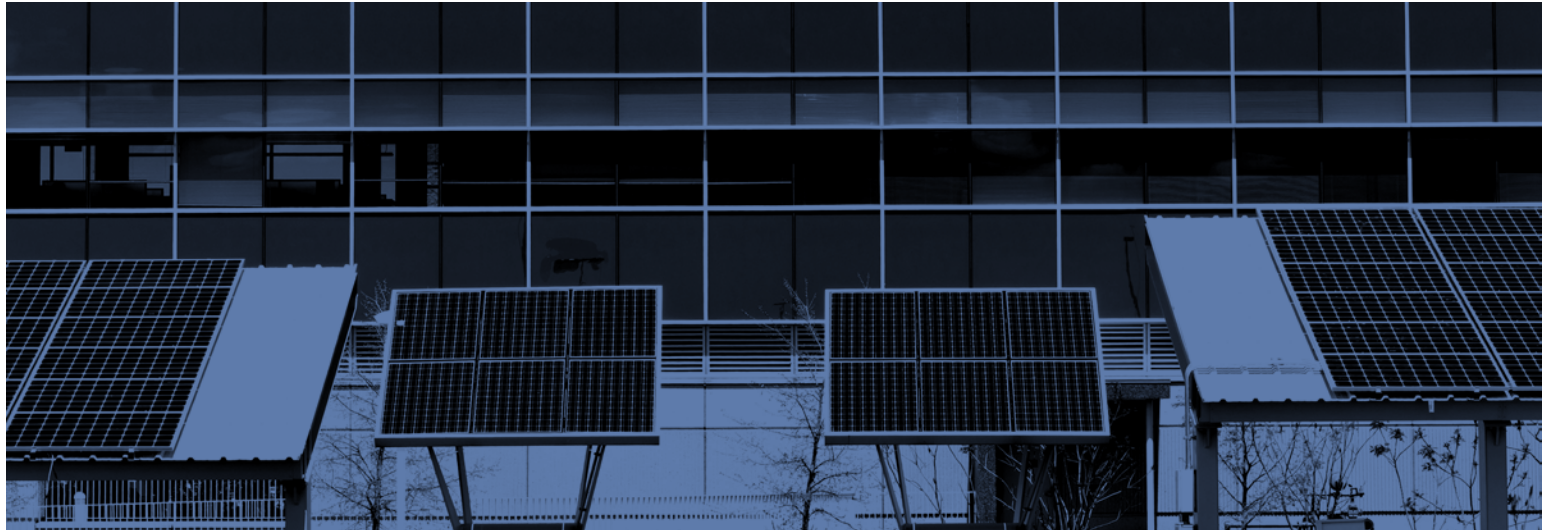
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Smart Energy & Water

The use of energy and water — what we use these resources for and how much we consume — affects human health through its impact on the environment. In generating energy, fossil fuel combustion pollutes the air we breathe and contributes to a negative impact on the environment and, consequently, human health.ⁱ

Achieving the Smart Energy & Water goal means stewarding these resources and their utilities. The Lower Mainland Health Care Organizations are continually looking for opportunities to reduce the amount and intensity of energy and water use and

greenhouse gas emissions from health care operations. Efficiency measures (such as energy-efficient lighting) and water-conserving infrastructure do more with less and thereby lower the organizations' environmental footprint without compromising patient care or employee comfort.

Our Goals

- 1 Reduce Energy Use Intensity (EUI) of core sites.
- 2 Reduce absolute In-Scope GHG emissions.
- 3 Reduce absolute In-Scope GHG emissions intensity.
- 4 Reduce Water Use Intensity (WUI) of core sites.

i. Pollution from Fossil-Fuel Combustion is the Leading Environmental Threat to Global Pediatric Health and Equity: Solutions Exist

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Our Progress

The following table is an overview of our progress based on 2020 targets. A quantitative analysis of our initiatives and progress is provided in [Section 5.1.3: Statistics](#).

Smart Energy & Water			2020 Targets				2017 Results			
Goals	Key Performance Indicators (KPIs) and Baseline (if applicable)	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	
1	Reduce Energy Use Intensity (EUI) of core sites. ^a	EUI (ekWh/m ² /year) (2007 Baseline)	15%	5%	12%	15%	11.9%	0.9%	8.8%	10.7%
2	Reduce absolute In-Scope GHG emissions. ^b	GHG emissions (tCO ₂ e/year) (2007 Baseline)	5%	10%	25%	25%	-10.8%*	4.0%	22.7%	11.8%
3	Reduce absolute In-Scope GHG emissions ^b intensity.	GHG emissions intensity (tCO ₂ e/year/m ²) (2007 Baseline)	15%	15%	30%	30%	11.8%	6.5%	28.2%	23.9%
4	Reduce Water Use Intensity (WUI) ^c of core sites. ^a	Water Use Intensity (m ³ /m ² /year) ^c (Baseline 2010)	20%	15%	10%	10%	20.5%	7.5%	1.4%	7.3%

* Fraser Health's absolute emissions have gone up in relation to expanded services including a significant increase in facilities' space and staffing, but overall intensity has gone down.

a. Facilities that are actively monitored for energy and water efficiency (primarily owned and operated sites).

b. In-scope emissions are from owned and leased buildings, fleet travel and paper use (as defined in relation to the Province's GHG Reduction Targets Act).

c. It is recognized that water consumption is more directly influenced by staff count per facility. Due to the uncertain and changing nature of staff counts, for the time being we will use facility space for the intensity metric.

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5.1.1 Programs

Program 1

Energy Management

Program 2

**Greenhouse Gas
Emissions Management**

Program 3

Water Management



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Program 1 Energy Management

Health care is one of the most energy-intensive sectors of the economy, which makes responsible energy management a critical area of environmental focus. The Energy Management program seeks to reduce reliance on fossil fuels and overall energy consumption, thereby reducing negative environmental impacts and supporting human health.

The program develops strategic partnerships and strong relationships with a wide range of stakeholders, particularly maintenance and operations teams, consultants and utility providers, to identify and implement energy reduction opportunities. It also undertakes measurement and reporting on key energy performance indicators and benchmarks, connects with internal sustainability

coordinators on systemic and behavioural change initiatives, and monitors and tracks project funding.

A few initiatives included in our energy reduction strategy:

- Energy studies to determine project opportunities
- Boiler plant upgrades and district energy solutions
- Control system optimization
- Heat recovery chiller installations
- Behavioural change pilot campaigns for energy conservation

Program staff partner with FortisBC and BC Hydro to attract funding support for energy conservation and efficiency projects. The incentives received from industry partners are used to supplement the project

funding. The implementation of these projects directly reduces operating expense and environmental impact of the Lower Mainland health care sites.

The Energy Management program seeks to reduce reliance on fossil fuels and overall energy consumption, thereby reducing negative environmental impacts and supporting human health.

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Program 2 **Greenhouse Gas Emissions Management**

The focus of the Greenhouse Gas Emissions Management program is to reduce greenhouse gas (GHG) emissions to net-zero or below. Of the total measured emissions generated by the Lower Mainland Health Care Organizations (LMHOs), over 95% are from buildings while the remaining 5% are from supplies (paper usage) and transportation (fleet and other vehicles) combined. The GreenCare goals and targets for carbon neutral operations will be achieved, generally, by reducing GHG (carbon) emissions and purchasing carbon offsets.

Emission-Reduction Strategies for Buildings

- Reduce operational energy (electrical and natural gas) consumption.
- Optimize existing plants and controls.
- Build new facilities to aggressive performance standards.
- Utilize district energy and off-site renewable energy generation.
- Embed energy management principles into operating standards.
- Educate and engage employees on energy conservation.
- Reinvest energy savings into projects for further reductions.

Emission-Reduction Strategies for Transportation, Supplies and Clinical Processes

- Reduce fleet size and means of fuel consumption.
- Install bicycle infrastructure and encourage clean means of commuting.
- Install electric vehicle charging stations to encourage staff use of electric vehicles.
- Reduce the consumption of supplies such as paper.
- Reduce or recapture anesthetic agents (currently not considered a part of the LMHOs' carbon footprint).

The Greenhouse Gas Emissions Management program supports and works alongside B.C.'s provincial mandate for carbon neutrality across all public sector organizations. Each health care organization is required by the Province to produce an annual Carbon Neutral Action Report (CNAR) that provides a measure of their carbon footprint along with the steps taken to reduce and neutralize that footprint.

Download the Carbon Neutral Action Reports (CNAR) for the Lower Mainland Health Care Organizations below:

Fraser Health CNAR ↕

Providence Health Care CNAR ↕

Provincial Health Services Authority CNAR ↕

Vancouver Coastal Health CNAR ↕

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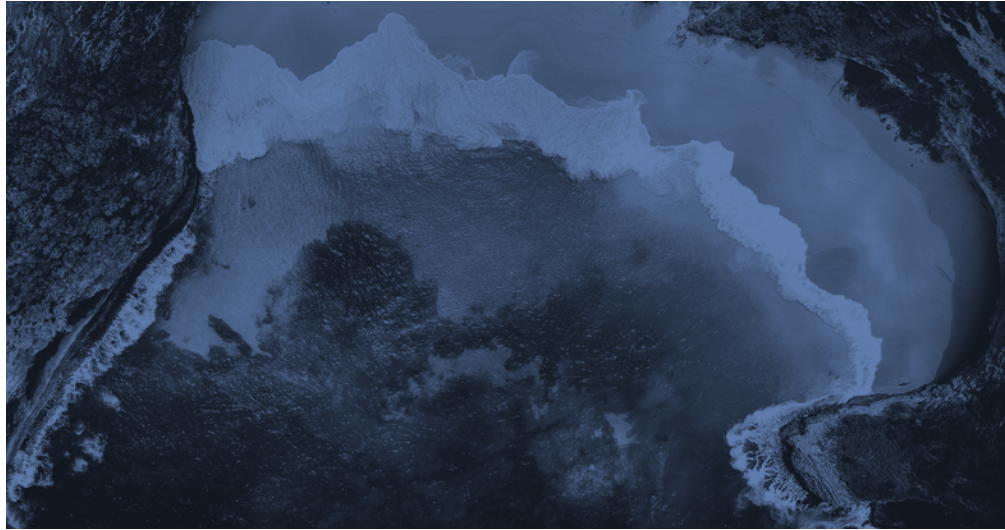
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Program 3

Water Management

The Water Management program has been developed to actively plan, develop, distribute and optimize the use and possible reuse of water resources for the Lower Mainland Health Care Organizations (LMHOs).

Focused largely on conservation, this program looks to optimize landscape irrigation, eliminate

once-through cooling systems, capture/reuse rainwater, optimize water use through behavioural change, and manage sewage and wastewater with the eventual goal to recycle or reuse greywater where applicable.

The management of water use is a growing priority not only for health care organizations but for all B.C. residents. In 2016, for example, the province registered only 1.3% of the usual amount of snowpack in the mountains,^j and many regions and cities,

including Vancouver, had to implement Stage 3 and 4 water restrictions.^k The LMHOs' Water Management program is an integral part of the Province's strategy to address the reoccurring issue of water shortage across B.C.

j. *B.C. preparing for another year of severe drought*

k. *New water restrictions explained*

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5.1.2 Good News Story

Fraser Health's Story



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Fraser Health's Story **Collaborative Project Yields Results**

What began with the installation of a new condensing boiler and upgrades to controls on the ventilation system at Ridge Meadows Hospital evolved into a multi-phase collective approach to energy efficiency.

Project phases at Ridge Meadows Hospital

- Phase 1 (2015): Installation of a new condensing boiler and upgrades to controls on the ventilation system
- Phase 2 (2016): Installation of new chillers, heat pumps and cooling towers; addition of hot water to equipment installed in Phase 1

to reduce boiler temperatures and improve condensing

- Phase 3 (2018): Installation of new domestic hot water heat exchangers and a boiler stack economizer that drops the boiler output temperatures

Energy and cost savings

After a full year of measurement and verification, the project's projected savings of 5,000 GJ natural gas and 183,000 kWh in electricity were achieved, for a total greenhouse gas emission reduction of over 250

tCO₂e (a 25% reduction from 2015 levels).

Ridge Meadows also experienced reduced maintenance time and costs, improved air quality with a higher level of oxygen and better control of temperatures.

Since the implementation of this three-phase project at Ridge Meadows, the Energy and Environmental Sustainability (EES) Team has been meeting quarterly with the Facility Maintenance Operations (FMO) department to review the hospital's energy performance.

Collaboration

Valuable relationships have been formed and strengthened over the course of project implementation. Through this project, the EES Team and the FMO department have demonstrated successful collaboration, with positive implications for many future collaborations.

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5.1.3 Statistics

The following data tables are presented under each of our four Key Performance Indicators (KPIs) for Smart Energy & Water to provide quantitative analyses of our initiatives and progress.

Goals

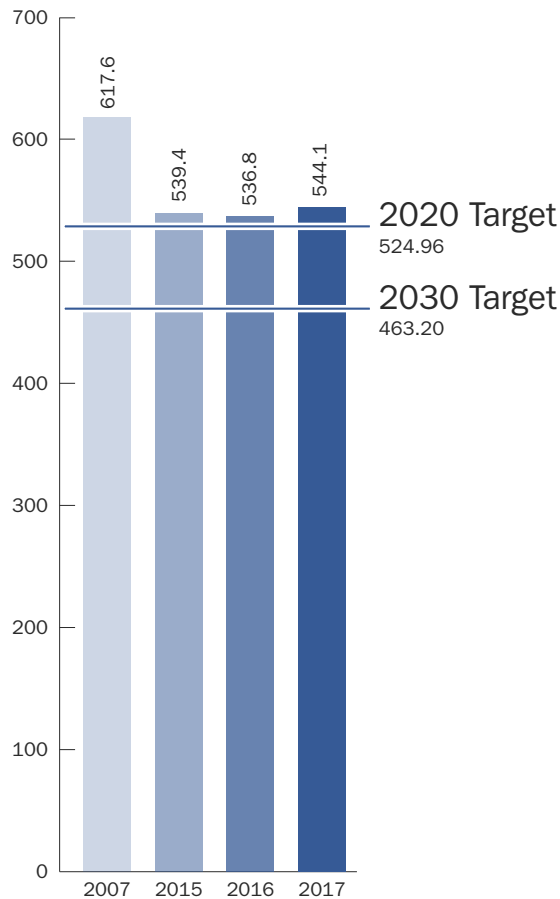
- 1 Reduce Energy Use Intensity (EUI) of core sites.
- 2 Reduce absolute In-Scope GHG emissions.
- 3 Reduce absolute In-Scope GHG emissions intensity.
- 4 Reduce Water Use Intensity (WUI) of core sites.



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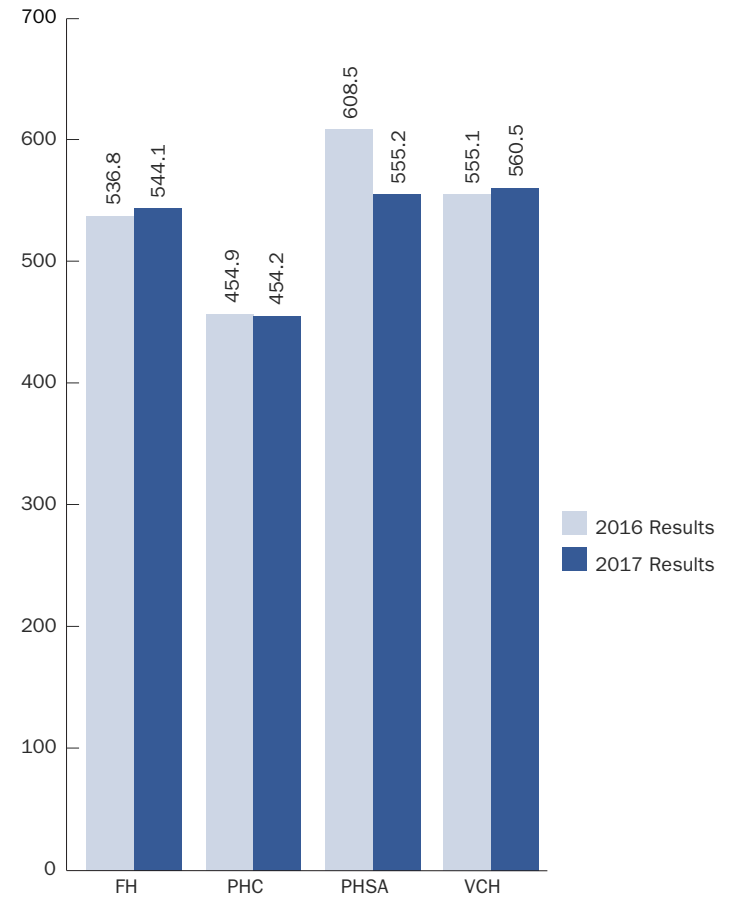
1. Reduce Energy Use Intensity (EUI) of core sites.

Energy use intensity (EUI) (ekWh/m²)^a



a. For core sites only

Lower Mainland Health Care Organizations Energy Use Intensity (EUI) comparison table^a

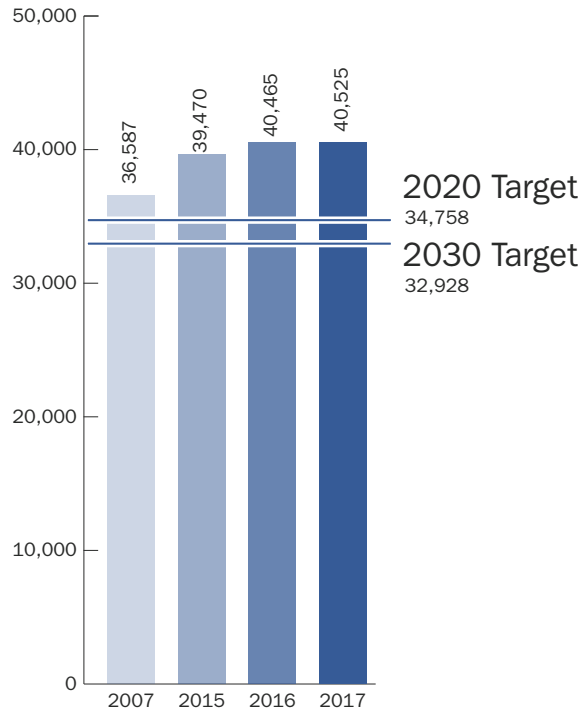


a. Data includes electrical, natural gas and fuel oil. Data is also normalized according to weather. Data is for core sites only.

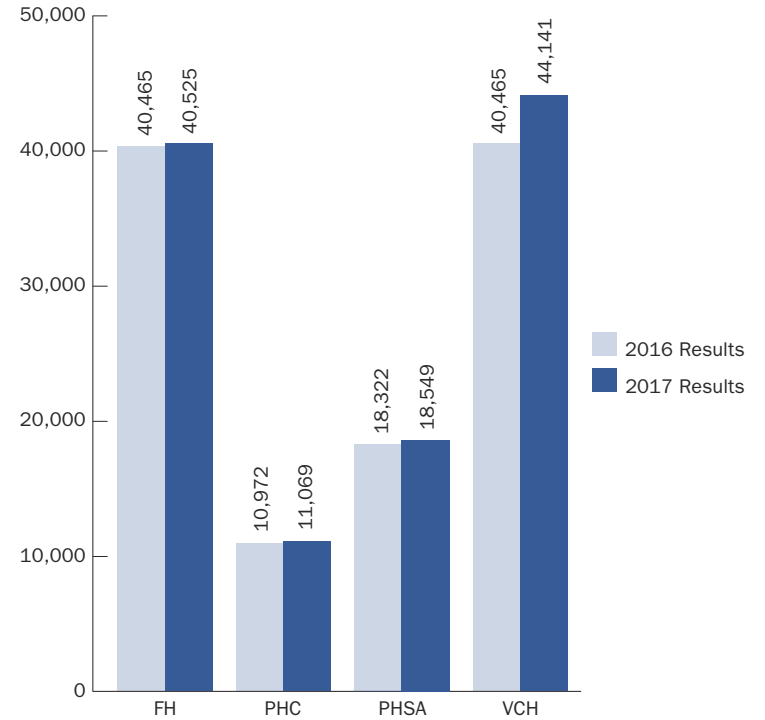
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2. Reduce absolute in-scope GHG emissions.

Carbon footprint (needing offsetting) In tCO₂e^a



Lower Mainland Health Care Organizations Carbon Footprint Comparison Table

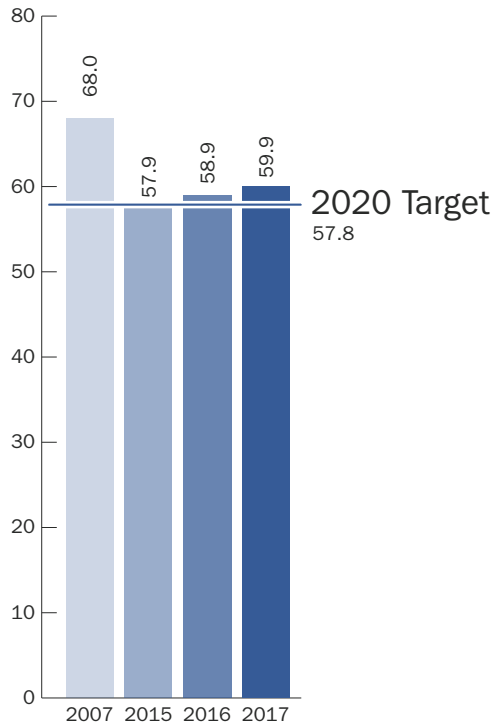


a. The carbon footprint is derived by analyzing the data from all LMHO sites. Not just sites determined to be core.

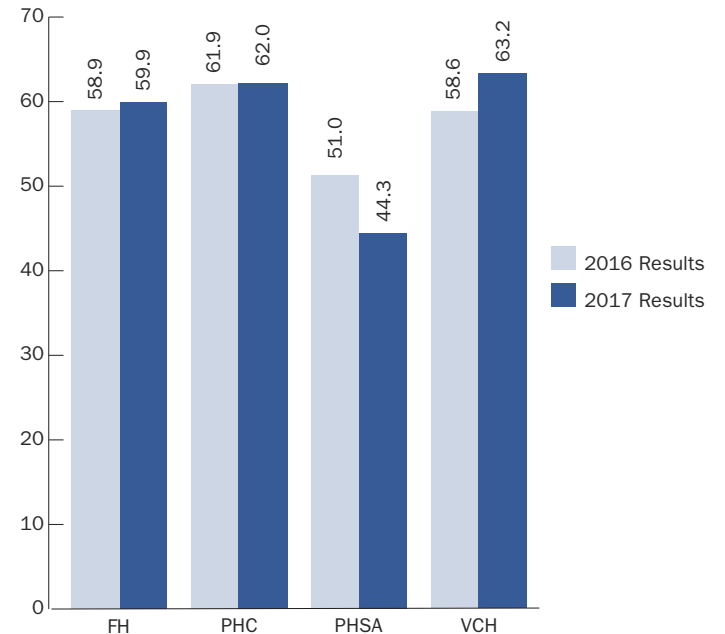
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3. Reduce absolute in-scope GHG emissions intensity.

CO₂ footprint intensity (kgCO₂e/usable sq. metre of facility space)^a



Lower Mainland Health Care Organizations Carbon Footprint Comparison Table

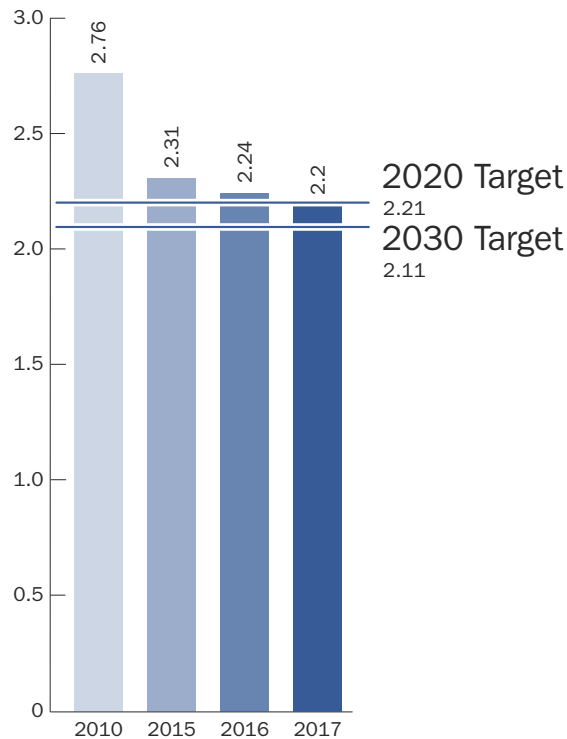


a. The carbon footprint is derived by analyzing the data from all LMHO sites. Not just sites determined to be core.

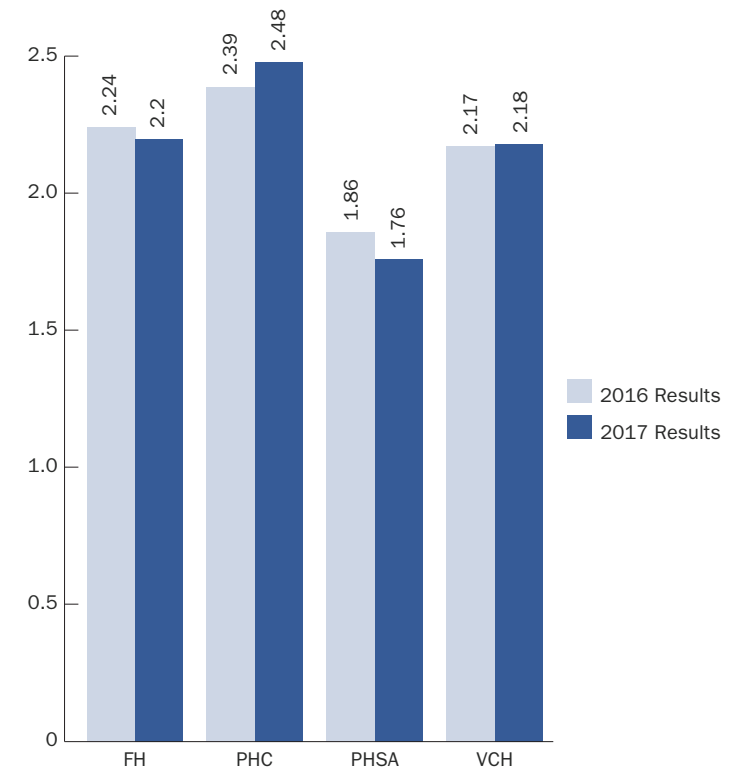
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4. Reduce Water Use Intensity (WUI) of core sites.

Building water performance index (BWPI) (m³/yr/m²)



Lower Mainland Health Care Organizations
Comparison Table - Building Water Performance
Index (BWPI) (m³/yr/m²)



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5.2 ZERO WASTE & TOXICITY

Minimize waste generated and toxic chemicals used by the health care system and supporting operations.



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Zero Waste & Toxicity

In health care settings, reducing waste and exposure to toxins produces better health outcomes for staff and patients, decreasing the risk of disease. In the wider environment, scaling down the use of toxic chemicals and waste decreases greenhouse gas emissions and negative impacts on water, soil and air, thereby reducing associated health impacts such as respiratory and cardiovascular disease, cancer, endocrine disruption and birth defects.

Achieving our Zero Waste & Toxicity goal requires responsible waste management. The Lower Mainland Health Care

Organizations are reducing the production of waste in operations and increasing waste diversion rates for operations and new construction by focusing on the recycling, reuse and reduction of materials through changes to operational processes. This work is assisted by a Recycling Renewal Program and an Environmentally Preferable Purchasing program.

Our Goals

- 1 Increase waste diversion rates at existing acute and residential care sites.
- 2 Increase waste diversion rates at all new health care construction projects.
- 3 Decrease food scraps in the garbage waste stream.

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Our Progress

The following table is an overview of our progress based on 2020 targets. A quantitative analysis of our initiatives and progress is provided in [Section 5.2.3: Statistics](#).

Zero Waste & Toxicity			2020 Targets				2017 Results			
Goals	Key Performance Indicators (KPIs) and Baseline (if applicable)	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	
1	Increase waste diversion rates at existing acute and residential care sites. ^a	% of waste diverted (annual average)	50%	50%	50%	50%	39%	41%	31%	38%
2	Increase waste diversion rates at all new health care construction projects.	% of waste diverted (annual average)	80%	80%	80%	80%	88.6%	No Projects	78.5%	88.4%
3	Decrease food scraps in the garbage waste stream. ^b	% of food waste in waste streams (annual average)	<5%	<5%	<5%	<5%	9.7%	Not Measured	9%	16.0%

a. Waste diversion data does not include segregated bio-medical waste.

b. Food scraps in the garbage waste stream are audited every two years. The next schedule audit period is in 2018. It is assumed performance has not changed from 2016.

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5.2.1 Programs

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Recycling Renewal

Program 2

**Environmentally
Preferable Purchasing**



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Program 1 Recycling Renewal

The objective of the [Recycling Renewal Program](#) is to unify the effort to reduce health care waste and improve human and environmental health in the region. The ultimate goal is a health care system that significantly reduces waste sent to landfills or incinerators and fully optimizes reduction, reuse and recycling strategies. The program has been implemented at 56 hospital and residential sites.

The program provides health care sites with recycling equipment and signage as well as staff education. As a standardized recycling program, it operates in the same way at every site, making it easier for staff, physicians, patients, volunteers and visitors to recycle correctly. Clear signage attached to each bin helps to reduce confusion and error at the time of disposal.

Recycling Renewal addresses three main waste streams:

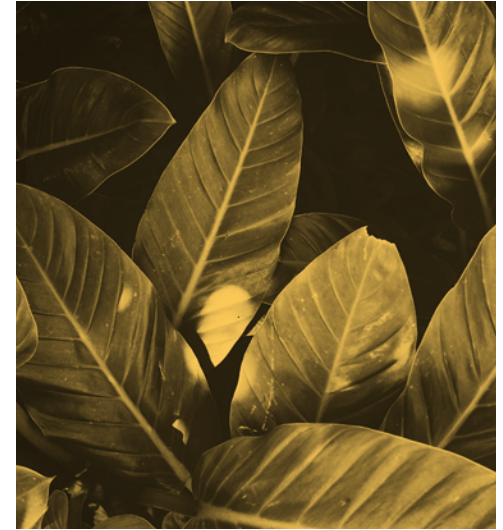
- Mixed containers
- Mixed paper
- Refundable beverage containers

The program assists the Lower Mainland Health Care Organizations in reaching the GreenCare goals and targets. By 2020, the target is to increase waste diversion rates at existing acute and residential care sites by 50%. This target aligns with Metro Vancouver's zero waste targets.

The Recycling Renewal Program is endorsed and supported by staff representatives who receive special training to become "Recycling Champions" for their department and site. In 2017, no new Recycling Champions were recruited while the training objectives, process and materials were re-evaluated to ensure effectiveness and process improvement. The recycling champion model is being assessed and new engagement opportunities are being considered.

The ultimate goal is a health care system that significantly reduces waste sent to landfills or incinerators and fully optimizes reduction, reuse and recycling strategies.

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Program 2 **Environmentally Preferable Purchasing**

The Environmentally Preferable Purchasing (EPP) program prioritizes less harmful products over competing products and reduces the negative impacts on human health and the environment. It can also reduce waste disposal costs, create a healthier indoor environment for employees and patients, and improve worker safety.

The use of environmentally friendly goods and services is a key factor in the overall sustainability of the Lower Mainland Health Care Organizations (LMHOs). Health care, like many other industries, is challenged to limit the negative environmental and health impacts that result from its use of energy and water, its generation of waste, and its exposure to toxins.

In 2017, a study was undertaken to explore the benefits of a switch from general cleaners to an aqueous ozone cleaning system at Vancouver Coastal Health (VCH) and (Providence Health Care (PHC) acute and residential care facilities. Possible results of a switch include a 70% reduction in chemicals of concern disposed, 90% reduction in water use, an 83% reduction in plastic containers, as well as reduced risks to human health, enhanced cleaning performance and the potential for reductions in purchasing costs related to product, water, recycling and labour.

Objectives for Environmentally Preferable Purchasing

- 1 Work collaboratively with BC Clinical and Support Services (BCCSS) to identify current EPP practices, gaps and opportunities for action.
- 2 Raise awareness about EPP amongst health care leadership, Green+Leaders, Recycling Champions and other interested

health care staff, and provide them with the tools to take action in their own workplaces.

- 3 Identify and develop purchasing strategies and processes that help reduce waste and chemicals of concern from health care operations.
- 4 Develop and communicate best practice/success stories based on the inclusion of environmental criteria in purchasing processes.

The Energy and Environmental Sustainability Team plans to expand EPP work in 2018 by creating a provincial working group with BCCSS and Sustainability Departments across B.C.'s health organizations with the objective of collectively learning about purchasing processes in the LMHOs, as well as identifying existing EPP practices, gaps, opportunities for action, targets and key performance indicators.

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Fraser Health's Story



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Photo: St. Michael's Hospital Pharmacy team holding reams of paper they no longer use. Left to right: Brenda Wright, Clinical Pharmacy Technician; Alison Alleyne, PharmD, Clinical Coordinator SMH; Lisa Geddes, Clinical Pharmacy Technician

Fraser Health's Story

The Paperless Pharmacy

At Surrey Memorial Hospital Pharmacy, clinical monitoring forms and patient census reports used to be auto-printed every morning. Pharmacy technicians had to monitor and fix paper jams continually; meanwhile, clinical pharmacists accessed only two-thirds of all the printed paper.

The Zero Waste & Toxicity team worked with PHA Information Systems (PHA-IS) to create an electronic filing system that electronically compiles forms and reports on a secure and accessible drive. Clinical pharmacists can now choose to print individual patient forms or reports only when intensive notes and follow-ups are required.

Identifying an opportunity

The pharmacy's clinical team saw the opportunity to reduce waste and decided to pursue it. They suspected that their paper use could be reduced by altering their process: instead of automatically printing reports that were shredded minutes later, they could, instead, download the reports and view them on-screen. With the expertise of PHA-IS, this new process was implemented.

Implementation

The process took a little over a month to implement and test as staff members refined the system by working through glitches. Some pharmacists have resisted the initiative and continue to print reports for various reasons, including the need to have information on hand during patient care interdisciplinary rounds to answer medication-related questions. To go truly paperless, these pharmacists will need to access reports on computer tablets during their rounds.

Benefits

The pharmacy's new electronic filing system saves about one thousand pieces of paper a day.

Additional environmental and economic savings come with this reduction in printing: the pharmacy now uses less toner, produces a smaller amount of confidential paper (which requires shredding) and, ultimately, generates less paper for recycling.

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5.2.3 Statistics

The following data tables are presented under each of our three Key Performance Indicators (KPIs) for Zero Waste & Toxicity to provide quantitative analyses of our initiatives and progress.

Goals

- 1 Increase waste diversion rates at existing acute and residential care sites.
- 2 Increase waste diversion rates at all new health care construction projects.
- 3 Decrease food scraps in the garbage waste stream.

Audits of food scraps waste are conducted every two years. These audits are conducted at only a few sites — as “spot audits” per health care organization — and, for reporting purposes, are generalized across the entire health care organization.

In 2016, conducted spot audits to measure food waste in the garbage stream. These audits indicated that food waste ranged from 5-29% in the general waste stream across the 11 Lower Mainland Health Care Organization sites audited.

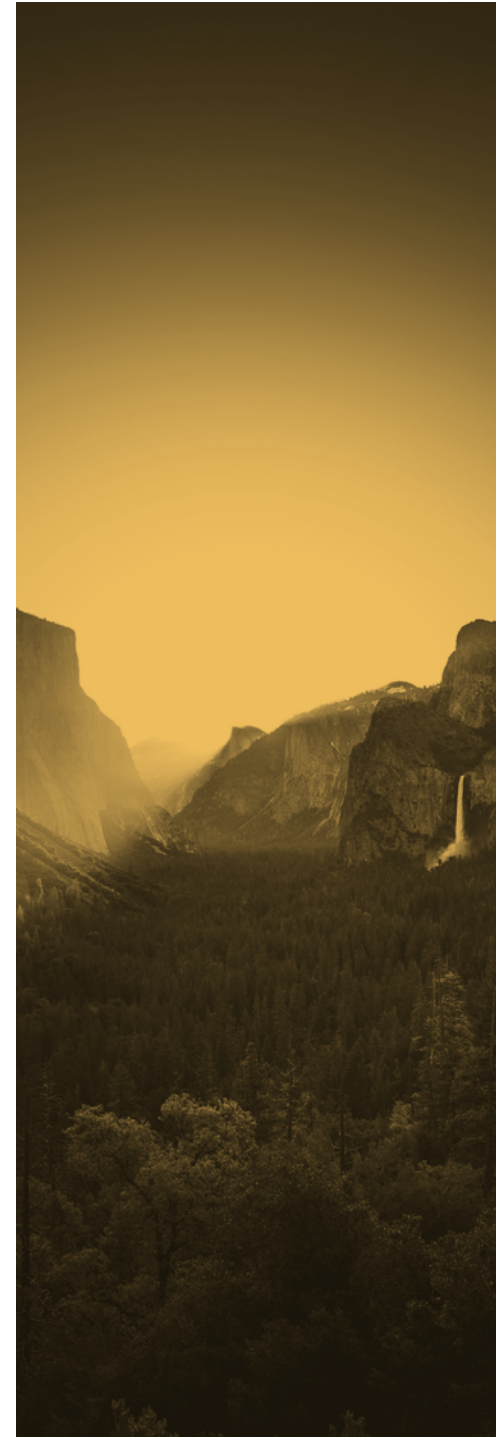
At Provincial Health Services Authority, only BC Children’s and Women’s Hospital was audited, revealing 9.0% of their garbage contained food scraps.

At Fraser Health, audits were undertaken at five facilities, revealing an average of 9.7% food waste in the general waste stream.

At Vancouver Coastal Health, five facilities were audited, showing an average of 16.0% food waste in the general waste stream.

No audits were undertaken at Providence Health Care.

By decreasing food scraps/organics in the garbage waste stream, the LMHOs will reduce both methane gas contributions and pressure on landfills. This target is aligned with the Metro Vancouver ban on food scraps in landfill.



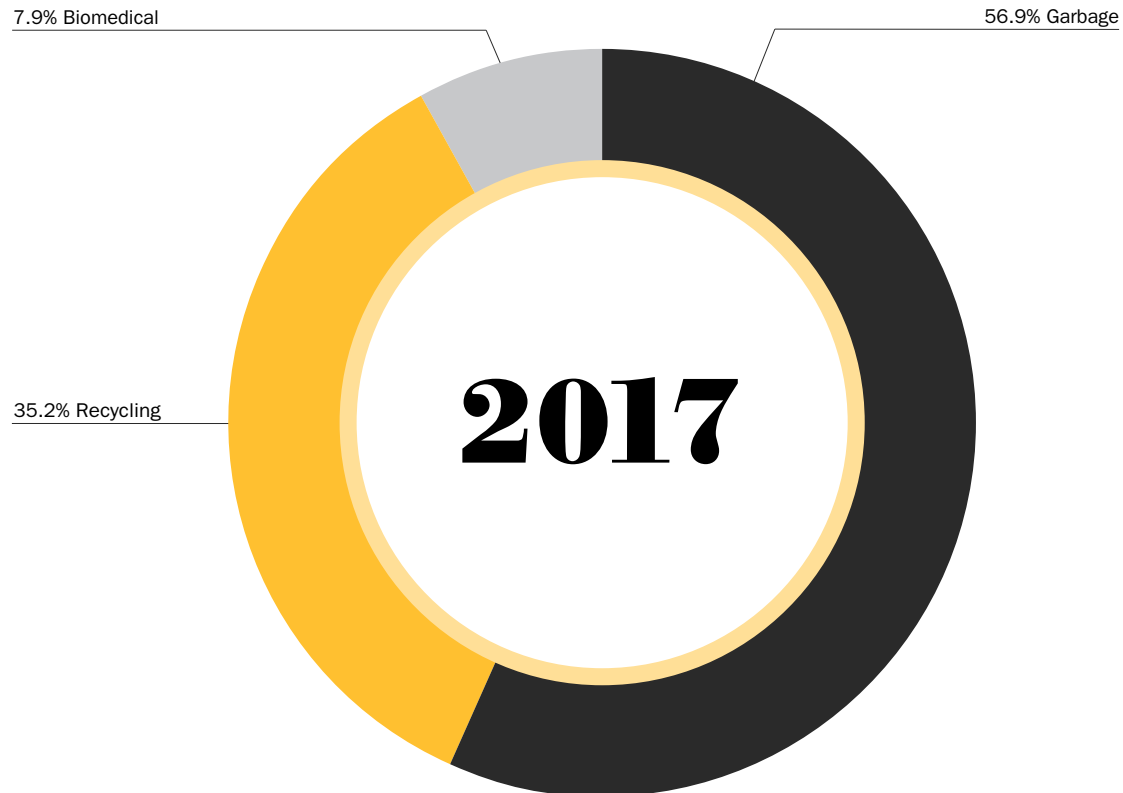
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LOWER MAINLAND HEALTH CARE ORGANIZATIONS COMPARISON TABLE

GOALS, KEY PERFORMANCE INDICATORS AND TARGETS

Waste Proportions for Lower Mainland-Owned Facilities^a

The following data tables are presented under each of our four Key Performance Indicators (KPIs) for Smart Energy & Water to provide quantitative analyses of our initiatives and progress.



a. Includes all Lower Mainland health care acute and residential care facilities.

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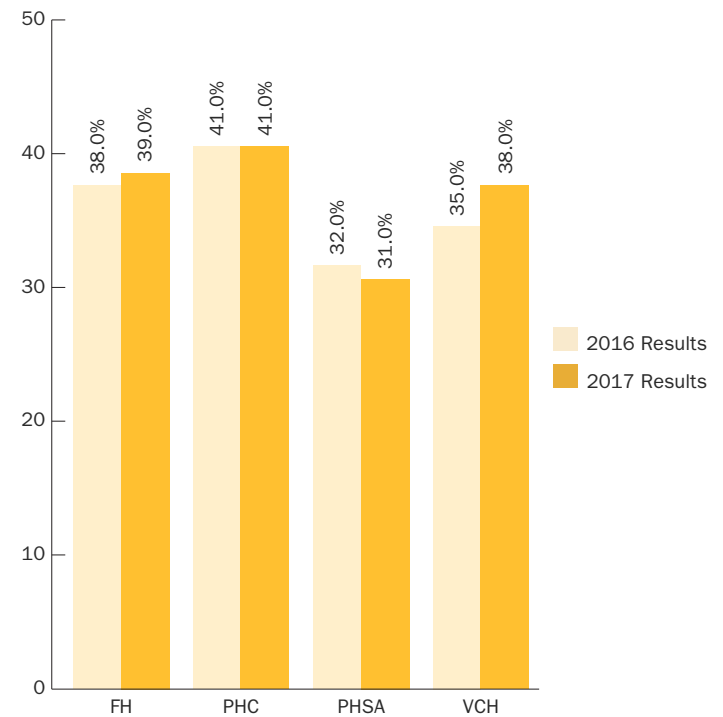
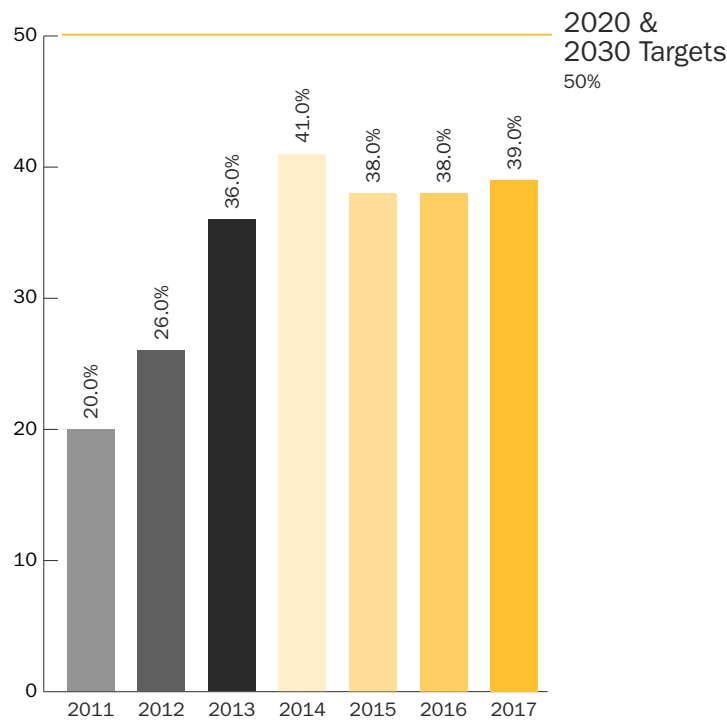
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5. Increase waste diversion rates at existing acute and residential care sites.

Waste Diversion Rates (Recyclables & Organics) at Acute and Residential Care Sites^a

Lower Mainland Health Care Organizations Waste Diversion Rates Comparison Table



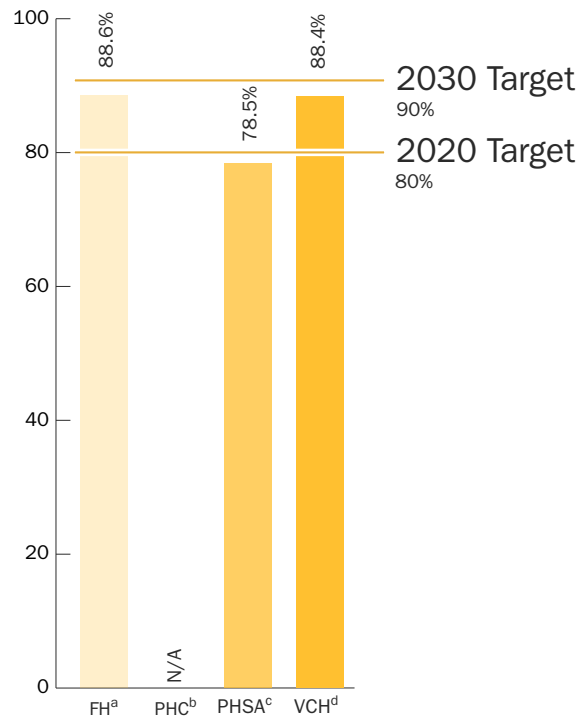
a. Includes all Lower Mainland health care acute and residential care facilities.

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LOWER MAINLAND HEALTH CARE ORGANIZATIONS COMPARISON TABLE

GOALS, KEY PERFORMANCE INDICATORS AND TARGETS

6. Increase waste diversion rates at all new health care construction projects.



- a. FH had two new construction projects in 2016 and no new construction project in 2017.
- b. PHC had no new construction projects in 2016 or 2017.
- c. PHSA had two new construction projects completed in 2016 and no new construction projects in 2017.
- d. VCH had two new construction projects completed in 2016 and one new construction project in 2017.



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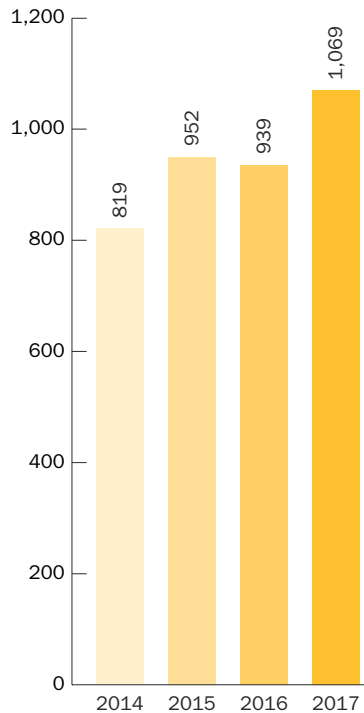
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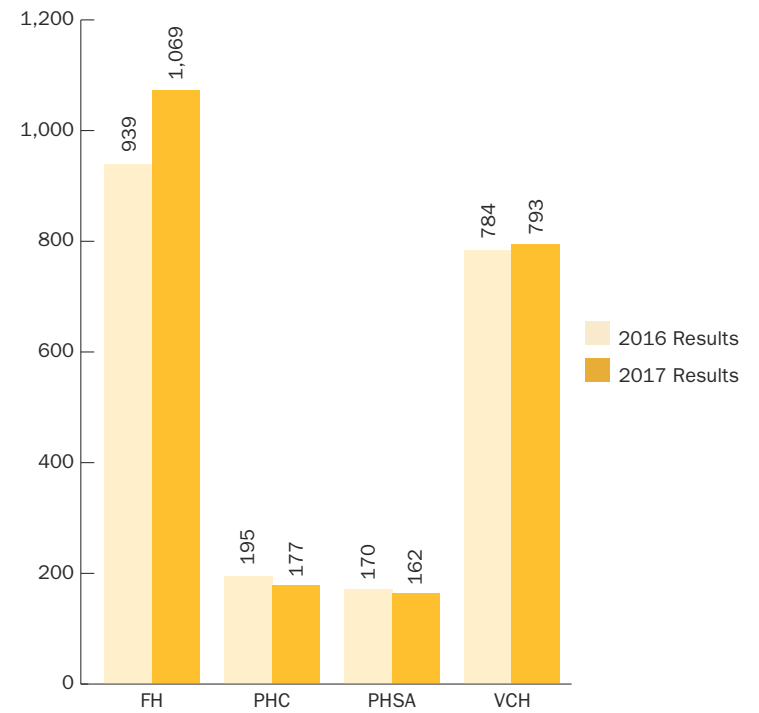
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7. Decrease food scraps in the garbage waste stream.

Total Organics Recycling Weight (tonnes)^a



Lower Mainland Health Care Organizations Total Organics Recycling Weight Comparison Table



a. Includes (core) Lower Mainland health care acute and residential facilities.

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5.3 REGENERATIVE DESIGN

Achieve a built environment that is energy net-positive,
is climate resilient and enriches health and wellness.



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Regenerative Design

This focus area is inspired by Regenerative Development, “a whole systems approach that partners people and their places, working to make both people and nature stronger, more vibrant and more resilient.”

In the context of this report, Regenerative Design refers to the creation of sustainable and resilient built environments that enhance the health and wellness of the people they serve, as well as the ecosystems they inhabit. For the Lower Mainland Health Care Organizations, these efforts can loosely be grouped into two areas:

- 1 Ensuring resilience to climate change
- 2 Creating a net-positive built environment

Climate resilience is an emerging field that impacts facility design and operations. The goal is to ensure that existing buildings are resilient to the negative factors of a changing climate and that new building design decisions are made to further strengthen the quantity and quality of emissions reductions and adaptation strategies.¹

The term “net-positive” is used with the intention to make this topic more accessible by focusing on the simple idea of a positive impact, rather than just reducing harm. A net-positive facility enhances the vitality of staff and clients (e.g., through natural daylight, access/views to green space, and fresh air), and the surrounding ecosystem (e.g., by restoring the natural patterns of water infiltration).

As a step towards the aspirational goal of creating net-positive facilities, performance-based green building rating systems, such as certification in Leadership in Energy and Environmental Design (LEED), are pursued.

Regenerative development is grounded in a deep understanding of the integral and interdependent nature of living systems — social and biotic — and the complex and emergent process by which they co-evolve. It draws

inspiration from the self-healing and self-organizing capacities of nature and works to restore these capabilities when they are missing or disrupted, whether in ecological or human living systems. (Regeneration Group)

Goals

- 1 Promote performance-based energy and environmental sustainability rating certification for new construction projects.
- 2 Develop one regional climate resilience report and one climate adaptation plan.
- 3 Develop Resilience Design Guidelines for Health Infrastructure plan.

1. <http://www.wri.org/our-work/topics/climate-resilience>

Our Progress

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Regenerative Design & Climate Resilience

2020 Targets

2017 Results

Goals		Key Performance Indicators (KPIs) and Baseline (if applicable)	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health
1	Promote performance-based energy and environmental sustainability rating certification for new construction projects.	% of projects with requirements	100%	100%	100%	100%	100%	100%	100%	100%
2	Develop one regional climate resilience report and one climate adaptation plan.	Complete/In Progress/Incomplete	1				Work initiated in 2017	Work initiated in 2017	Work initiated in 2017	Work initiated in 2017
3	Develop Resilience Design Guidelines for Health Infrastructure.	Complete/In Progress/Incomplete	1				Work initiated in 2017	Work initiated in 2017	Work initiated in 2017	Work initiated in 2017

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LEED Projects - Lower Mainland Facilities Consolidation

Registration Date	Certification Date	HA	Project Name	Certification Level	Project City	Project Size M2
2004-12-06	2010-03-19	FH	Czorny Alzheimer Centre	Certified	Surrey	3,107
2005-03-14	2009-09-10	FH	Abbotsford Regional Hospital and Cancer Centre	Gold	Abbotsford	60,000
2005-03-14	2007-09-14	FH	Cottonwood Lodge - A Fraser Health Residential Mental Health Facility	Gold	Coquitlam	1,387
2005-05-02	2008-12-17	FH	CareLife Maple Ridge	Silver	Maple Ridge	9,777
2005-11-04	2012-10-11	FH	Creekside Withdrawal Management Centre	Certified	Surrey	2,415
2006-08-08	2010-06-23	FH	Good Samaritan Canada, Victoria Heights Assisted Living	Certified	New Westminster	8,668
2008-07-15	2012-09-19	FH	Jim Pattison Outpatient Care & Surgery Centre	Gold	Surrey	32,179
2008-09-23	2012-10-11	FH	Maxxine Wright Place	Gold	Surrey	4,406
2008-10-06	2011-04-19	FH	Chilliwack Hospital Redevelopment	Certified	Chilliwack	3,278
2010-04-20	2013-04-22	FH	Czorny Alzheimer Centre - Phase 2	Gold	Surrey	3,158
2010-05-21	2014-11-26	FH	Surrey Memorial Hospital Critical Care Tower	Gold	Surrey	57,900
2010-08-06	TBD	FH	Cypress Lodge CTR	TBD	Coquitlam	1,371
2012-08-22	2015-07-20	FH	Mission Community Health Project - Complex Residential Care	Gold	Mission	12,962
2016-01-26	TBD	FH	Delta Hospital Lab & Medical Imaging Expansion Project	TBD	Delta	1,770
2017-03-24	TBD	FH	Royal Columbian Hospital Redevelopment Project - Phase One	TBD	New Westminister	18,115
2005-05-31	2006-11-09	PHC	St. Paul's Hospital 9A Mental Health Unit (Providence Health Care Society)	Certified	Vancouver	799
2011-05-09	TBD	PHC	West Wing Renovation	TBD	Vancouver	636
2004-12-23	2005-07-22	PHSA	BC Cancer Research Centre	Gold	Vancouver	21,677
2005-03-15	2011-11-03	PHSA	Child, Adolescent and Women's Mental Health Building	Silver	Vancouver	6,280
2009-05-12	2014-06-19	PHSA	British Columbia Cancer Agency Centre for the North	Gold	Prince George	5,035
2011-03-26	2013-06-20	PHSA	BC Children's & BC Women's Redevelopment Project Clinical Support Building	Gold	Vancouver	2,319
2012-07-10	2015-03-17	PHSA	BC Children's and Women's Health Centre Child Care Center	Gold	Vancouver	684
2014-01-02	TBD	PHSA	Children's and Women's Redevelopment Project - Teck Acute Care Centre	TBD	Vancouver	57,101
2009-08-11	2014-01-13	VCH	Sechelt (St. Mary's) Hospital	Gold	Sechelt	5,300
2012-01-31	2016-04-15	VCH	Lions Gate Hospital - HOpe Centre	Gold	North Vancouver	8,805
2013-05-07	TBD	VCH	Joseph and Rosalie Segal Family Centre	TBD	Vancouver	12,251
2016-10-20	TBD	VCH	Creekstone Residential Care Facilities	TBD	North Vancouver	13,354
2016-10-20	TBD	VCH	Hamilton Village Residential Care Facility	TBD	Richmond	8,200
2016-10-20	TBD	VCH	Silverstone Residential Care & Hospice Facility	TBD	Sechelt	8,600
2011-10-27	TBD	VCH	Djavad Mowafaghian UBC Centre for Brain Health	TBD	Vancouver	13,466

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5.3.1 Programs

Program 1
**Climate Resilience
and Adaptation**



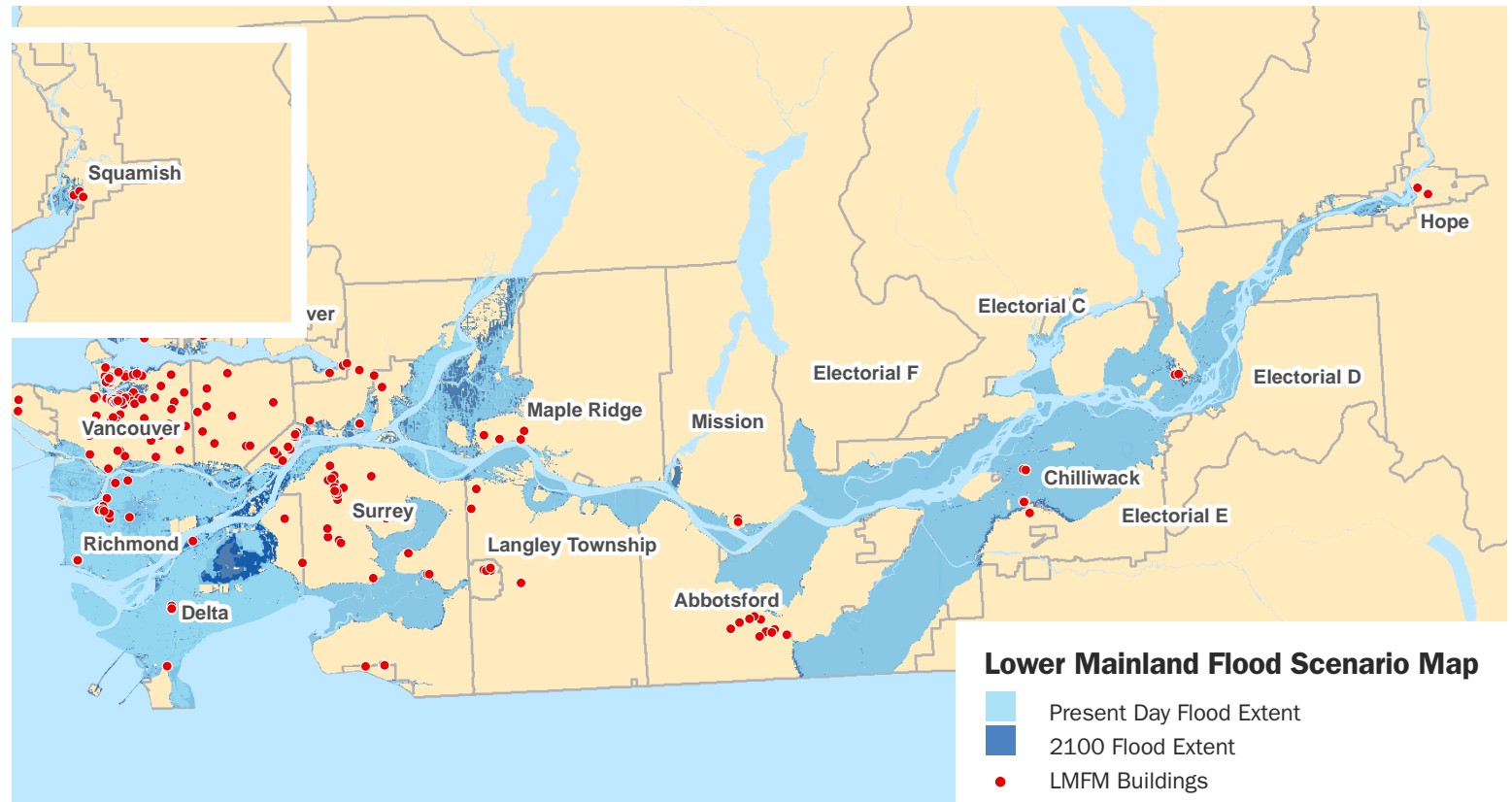
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Program 1 Climate Resilience and Adaptation

The Climate Resilience & Adaptation program, launched in early 2016, is focused on reducing the risks and impacts of climate change on our health campuses, our health organizations and, most importantly, on the health services we support and the communities we serve (Figure 1).

Reliable health service delivery is underpinned by buildings and infrastructure that are resilient to climatic events such as

heat waves, heavy rainfall and intense storm surges. With our growing body of knowledge and experience in resilience, we are increasing our capacity to design and operate our expanding and diversifying portfolio of facilities, even as our summers become warmer and drier and our winters become wetter and stormier.



Health Facilities & Flood Hazard Extent – Current and Future (2100). Source: Fraser Basin Council, 2015. Credit: J. Yip, 2017.

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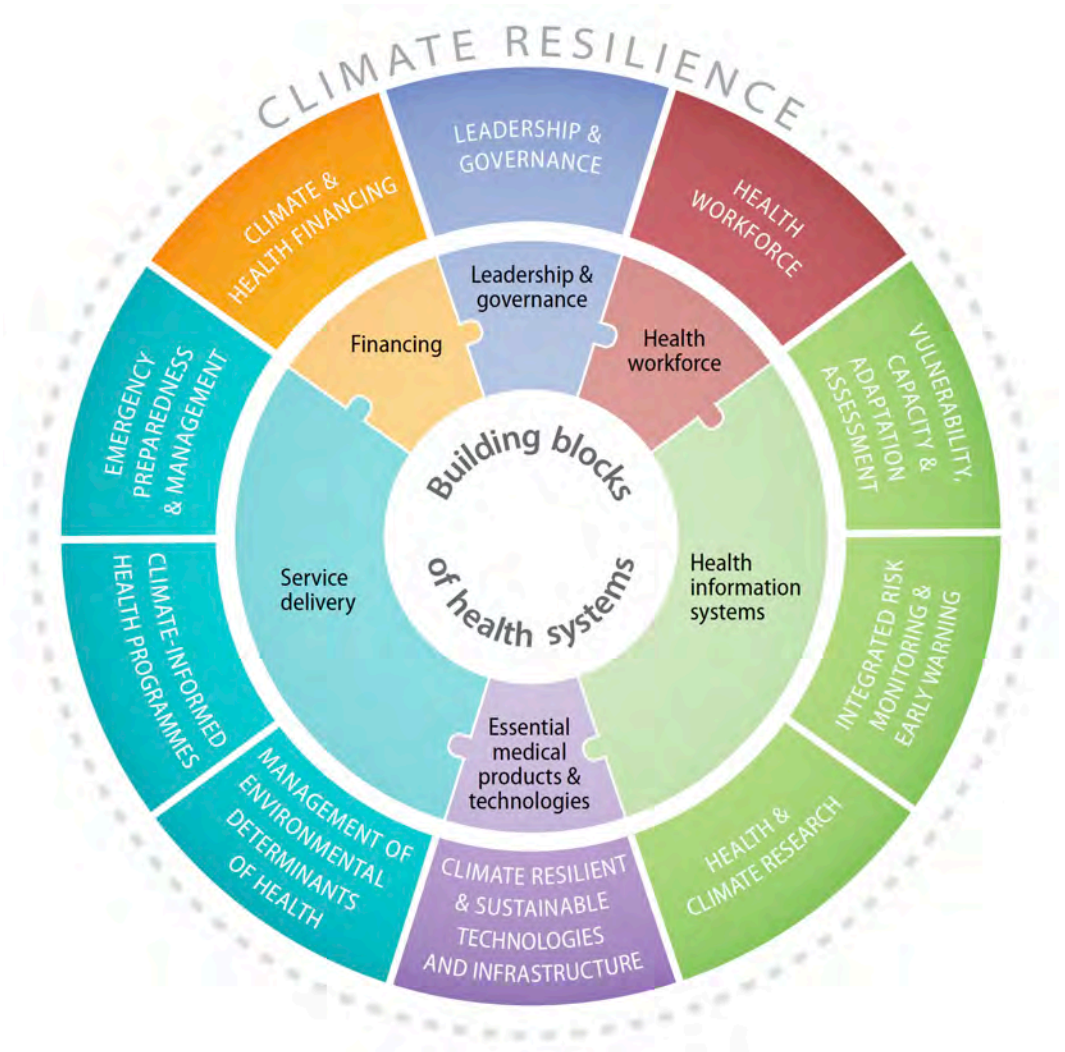
Improving climate resilience using an adaptive management approach has cascading benefits, and working with other departments to improve health system resilience²¹ (Figure 2) helps to ensure that we achieve health co-benefits for patients, staff and communities.

Collaborating with researchers enables our program to develop nature-based and low-carbon adaptation options that further reduce our greenhouse gas emissions as we adapt to our new climate reality and prepare for an uncertain future. Teaming up with local and regional governments helps to scale our positive impacts and generate co-benefits beyond the boundaries of our campuses and the lifespans of our health buildings.

To inform and shape our adaptation plans, we collaborate with internal departments and external organizations to create tools for investing in resilience and for tracking progress. One of our key decision-support tools for health infrastructure, with “business-as-usual”, “continuous improvements” and “gold standard” options for extreme heat and floods, mirrors potential climate pathways over the next decades. Our climate impact and resilience Key Performance Indicators (KPIs) help to ensure that we continually reduce climate impacts on our health campuses as we strengthen our climate resilience over time.

Our program continuously grows and transforms to incorporate international best practices, evolving standards and codes, and innovative adaptation options.

WHO Operational Framework for Climate Resilient Health Systems, 2015



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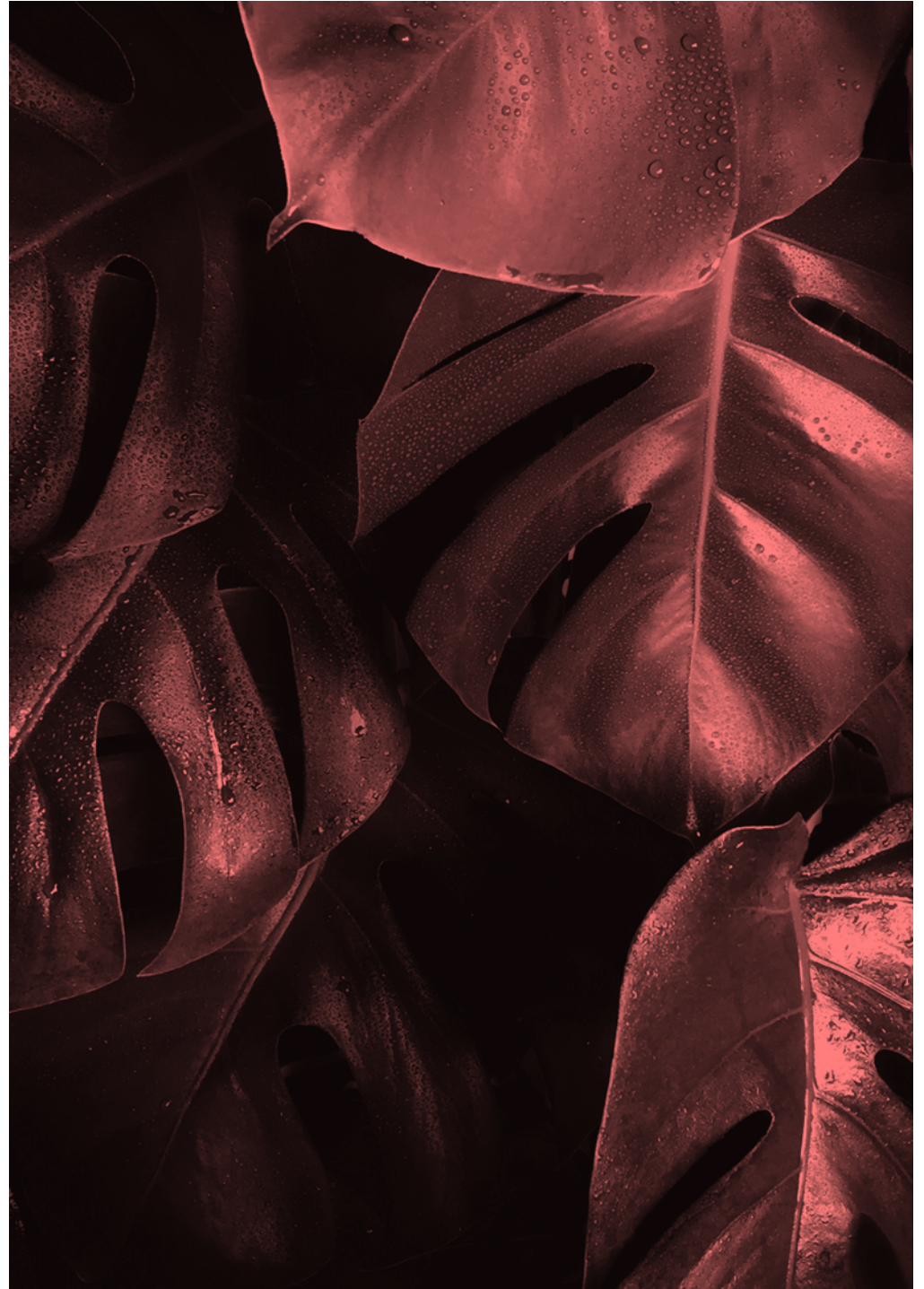
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5.3.2 Good News Story

Fraser Health's Story



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Fraser Health's Story Climate Change

In 2015, an especially strong windstorm in late summer knocked out power to eleven Fraser Health facilities. Nearly two years later, wildfires raging in the B.C. interior produced smoke and ash that adversely affected air quality in other regions, including the Fraser Valley. Both events were unexpected and unprecedented in B.C., and both events highlighted the critical importance of social resilience in Fraser Health service delivery areas.

People step in when buildings fail

Strong relationships between health facility staff and their community networks helped

to provide speedy alerts and backstop solutions when physical infrastructure at Fraser Health was strained. Looking ahead to “new normals” in temperature, precipitation, humidity and wind, we aim to build on strong relationships and broaden our networks to ensure a diversity of options in an uncertain future.

Ongoing learning

Fraser Health's maintenance and operations staff are continually learning from new experiences to improve the physical resilience of buildings and equipment, and to better prepare for “climate shocks” by strengthening relationships with emergency management. In 2017, the Climate Resilience & Adaptation program brought the National Research Council^m on board, with support

from Health Canada's Climate Change and Innovation Bureauⁿ, to study the impacts of past extreme-heat events and to model future events at Fraser Canyon Hospital (located in one of B.C.'s most extreme-heat-exposed communities). Recommendations will be integrated into a Site Resilience Plan by 2020.

Nature-based resilience and adaptation options with health co-benefits are being explored collaboratively with Fraser Health Population & Public Health, the University of British Columbia and the municipalities of Surrey, Vancouver and North Vancouver. One example of a nature-based option that improves building resilience as well as social and physical human resilience is the use of tree canopies on and around health care facilities to improve air quality, social cohesion and mental health.

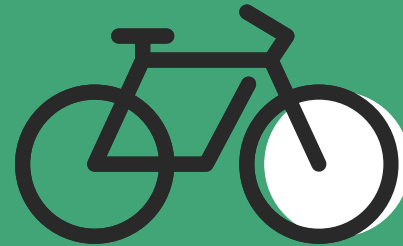
^m. *The National Research Council Canada and Infrastructure Canada take the lead in preparing Canada's buildings and infrastructure for climate resiliency*

ⁿ. *Climate Change and Health*

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5.4 ACTIVE & CLEAN TRANSPORTATION

Ensure a health care system in which employees commute/travel between sites in a manner that reduces greenhouse gas-related pollutants, minimizes the need for on-site parking and increases overall health and wellness.



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Active & Clean Transportation

Active transportation (walking and cycling) helps to reduce the risk of disease, the effects of psychological stress and the negative physical impact of a sedentary lifestyle. Clean transportation (walking, cycling, carpooling and transit) reduces greenhouse gas emissions and contributes to environmental and human health by reducing consumption of fossil fuels and resulting air pollution. If employees of the Lower Mainland Health Care Organizations (LMHOs) were to commute to work one day a week in an active and clean manner, approximately 3,000 fewer tonnes of carbon dioxide would enter the environment.

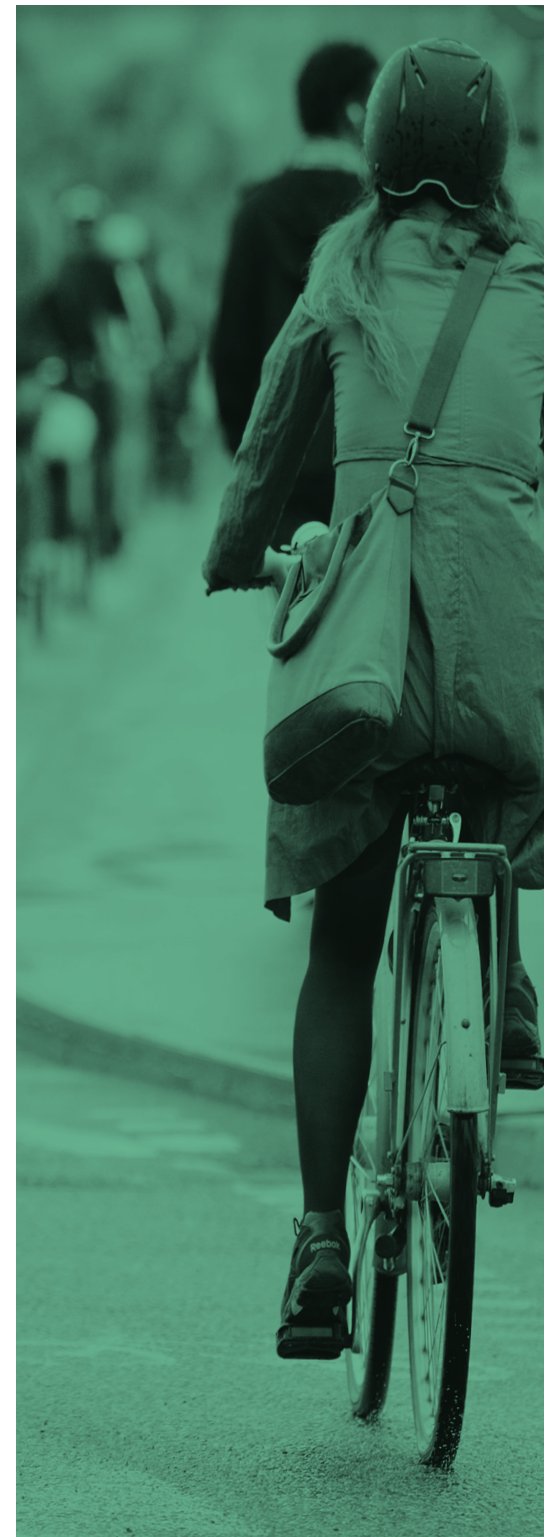
To achieve our Active & Clean Transportation goal, we need to ensure that employees are supported in their choice to use active and clean transportation. The LMHOs are committed to providing the following infrastructure that supports the use of sustainable modes of transportation:

- Rideshare networking to reduce the number of cars on the road
- Transit shuttles to facilitate transit commutes

- End-of-trip (EOT) facilities to make cycling more comfortable
- Electric vehicle charging stations to encourage the use of cleaner vehicles

Goals

- 1 Improve health care staff commutes via cleaner and healthier means (i.e., other than single occupancy vehicles).
- 2 Increase portion of core sites that provide end-of-trip (EOT) bicycle facilities/storage options.



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Our Progress

The following table is an overview of our progress based on 2020 targets. A quantitative analysis of our initiatives and progress is provided in [Section 5.4.3: Statistics](#).

Active & Clean Transportation			2020 Targets				2017 Results			
Goals	Key Performance Indicators (KPIs) and Baseline (if applicable)	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	
1	Improve health care staff commute via cleaner and healthier means (i.e., other than single occupancy vehicles).	% of annual staff commute via cleaner and healthier means (2016 Baseline)	35%	65%	60%	60%	26.3%	58.2%	54.3%	51.7%
2	Increase portion of core sites that provide end-of-trip (EOT) bicycle facilities/storage options. ^a	% of core sites with EOT facilities	50%	50%	75%	75%	44.0%	28.6%	62.5%	61.9%

a. End-of-trip facilities must include a minimum of one on-site shower/changing facility and a minimum of secure bicycle storage for 5% of on-site staff.

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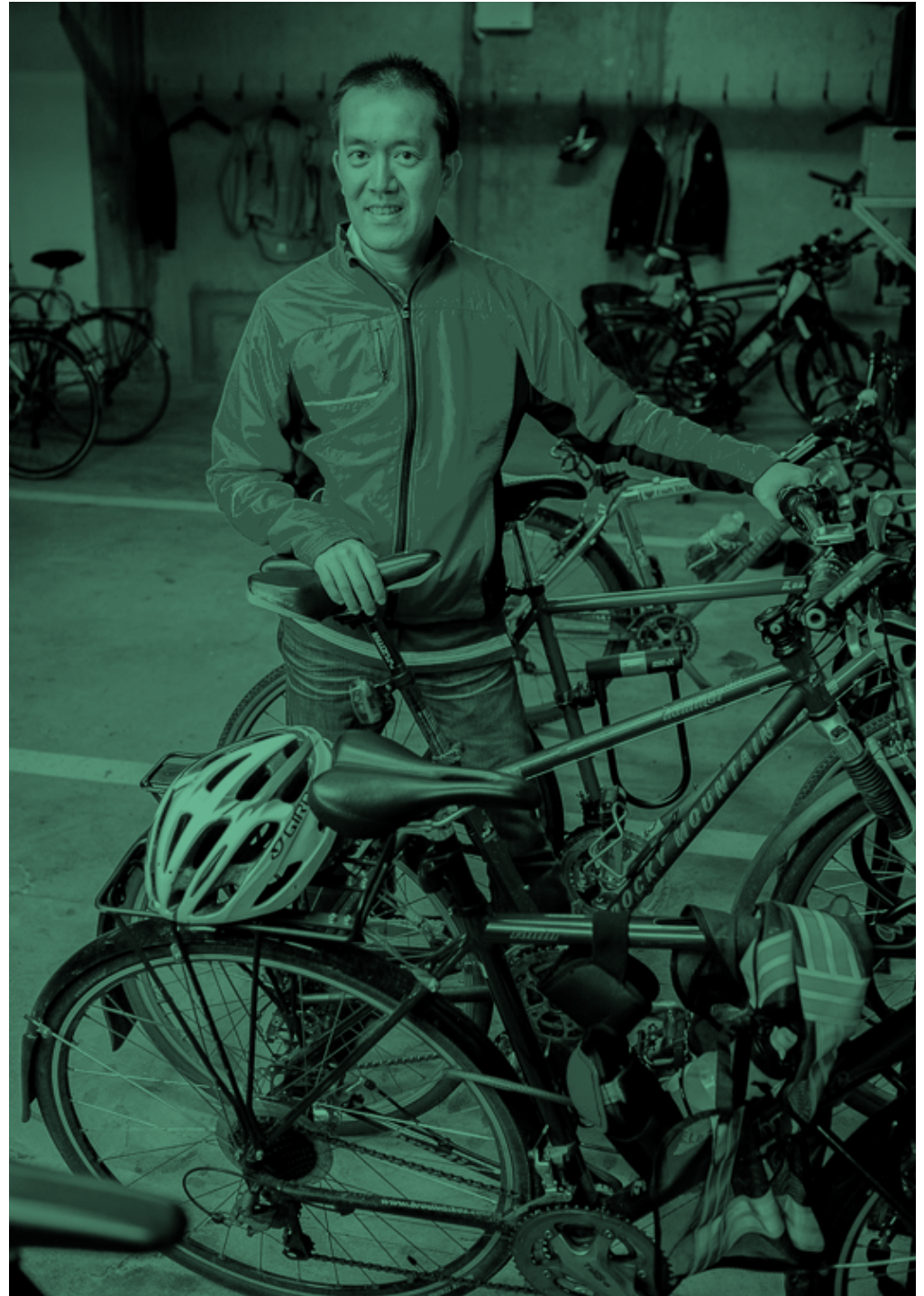
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5.4.1 Programs

Program 1

Commuter Services Program



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Program 1 **Commuter Services**

The Commuter Services Program encourages employees to use active and sustainable modes of transportation to get to work and to travel between sites.

These modes contribute to health by offering the benefit of exercise and stress reduction and by reducing greenhouse gas emissions, road congestion and parking demand, thereby contributing to a cleaner, pedestrian-friendly environment.

Ongoing initiatives of the Commuter Services Program include carpool/rideshare matching, electric vehicle charging stations, inter-hospital shuttle services, public transit support, bicycle storage services, and a “bike/walk/ride” GreenCare Community Group that brings staff together to share information about events and campaigns with interested employees. Employee participation in one or more of these initiatives helps the Lower Mainland Health Care Organizations (LMHOs) meet the GreenCare goals and targets for Active & Clean Transportation.

The annual Bike to Work Week event, which is organized by HUB (an external, Vancouver organization dedicated to the promotion of cycling), sees great participation by employees of the LMHOs and helps us meet our Active & Clean Transportation targets. In 2017, Provincial Health Services Authority received the Best in Health Cycling Award (2017 spring and autumn) for its employee participation in HUB’s 2017 Bike to Work Week competition.

Health care staff participation in the 2017 spring and autumn Bike to Work Week challenges:

HA	# of Registered Riders	Total Logged Trips	Total KMs	KGs of GHGs Avoided
Fraser Health	81	779	9,208.68	1,996
Providence Health Care	50	438	3,676.45	798
Provincial Health Services Authority	249	3,078	26,292.70	5,699
Vancouver Coastal Health	244	2,619	19,954.56	4,327

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5.4.2 Good News Story

Fraser Health's Story



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Fraser Health's Story

Fast Electric Vehicle Charging Stations

Chilliwack General Hospital (CGH) made a commitment to install new electric vehicle charging stations. The two fast (Level 2) electric vehicle charging stations were installed between late 2016 and early 2017 at the Emergency Main Entrance Parking Lot of Chilliwack General Hospital.

Facilitating clean vehicle use for staff and visitors

The new fast vehicle charging stations are accessible all day and every day to staff and the public. They offer free parking, but only electric vehicles — battery electric or plug-in hybrid electric vehicles — that are actively charging can occupy these stalls; once fully charged, or once the three-hour time limit has expired, electric vehicles must relocate to a regular stall where parking fees are in effect. No internal combustion engine vehicles are allowed to occupy either of the two charging station stalls at any time.

Results and future considerations

After one year of implementation, 55 unique electric vehicles used the fast vehicle charging stations at Chilliwack General Hospital for more than 834 charging sessions.

These charges collectively provided 7,643 kWh of electrical charge.

Electric charging is provided for free, but current parking fees will apply in the coming two years. If demand continues to grow, additional charging stations will be considered for installation at the Chilliwack General Hospital campus and other locations across Fraser Health.

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5.4.3 Statistics

The following data tables are presented under each of our two Key Performance Indicators (KPIs) for Active & Clean Transportation to provide quantitative analyses of our initiatives and progress.

Goals

- 1 Improve health care staff commutes via cleaner and healthier means (i.e., other than single occupancy vehicles).
- 2 Increase portion of core sites that provide end-of-trip (EOT) bicycle facilities/storage options.



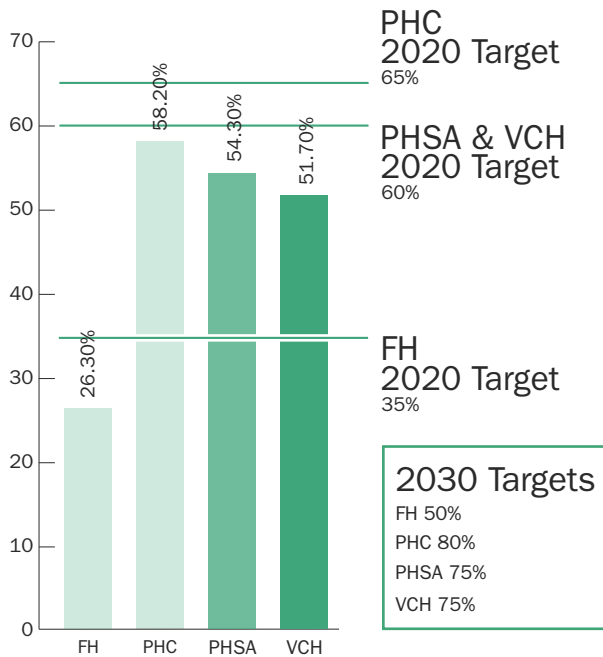
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GOALS, KEY PERFORMANCE INDICATORS AND TARGETS

11. Improve health care staff commutes via cleaner and healthier means (i.e., other than single occupancy vehicles).

Percentage of annual staff that commute via cleaner and healthier means (2016 baseline)



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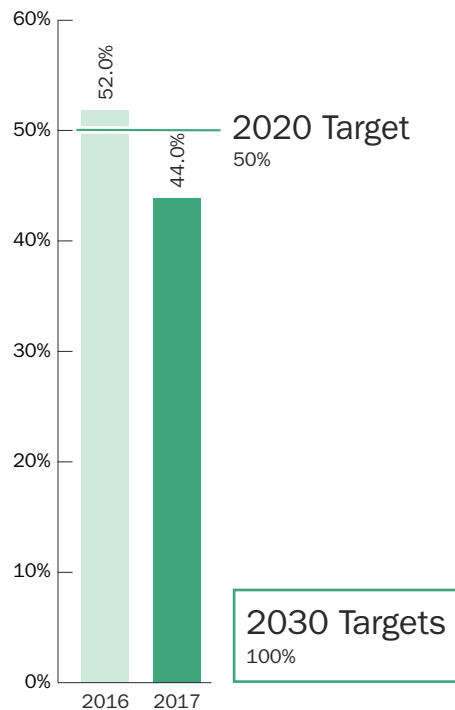
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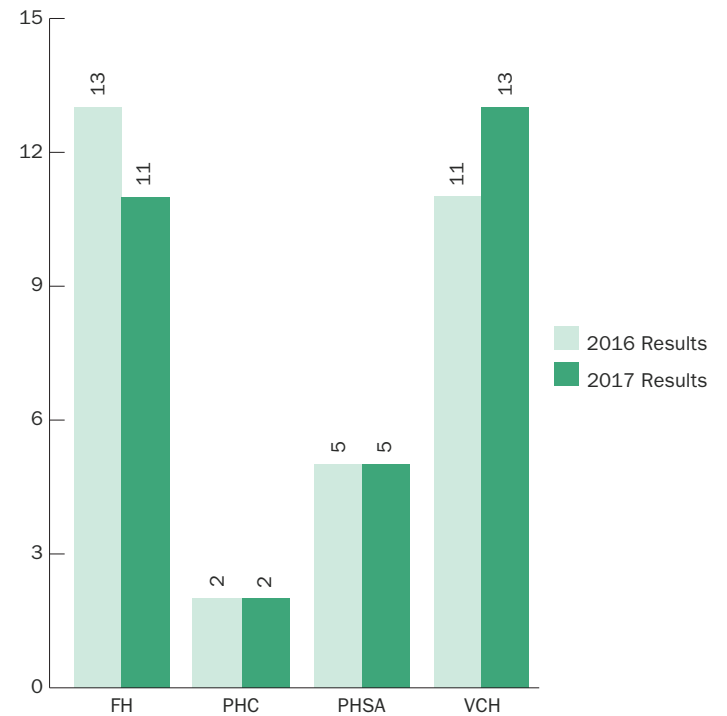
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12. Increase portion of core sites that provide end-of-trip (EOT) bicycle facilities/storage options

Percentage of core sites with EOT bicycle facilities



Lower Mainland Health Care Organizations Comparison Table: Number of Health Care Sites with EOT Bicycle Facilities^a

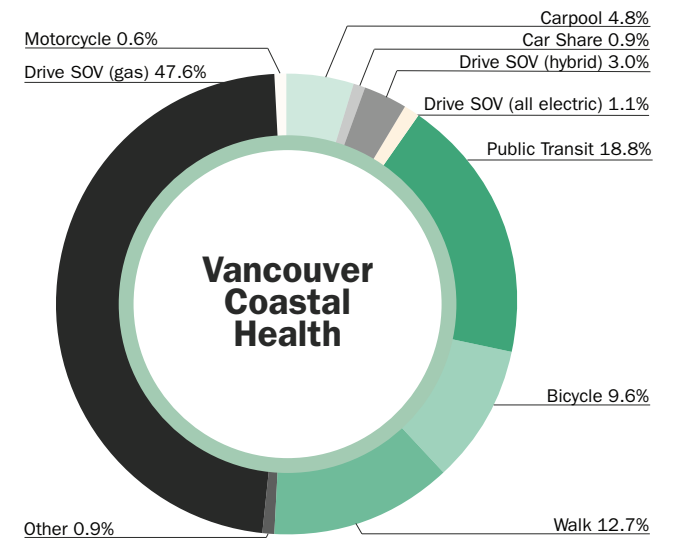
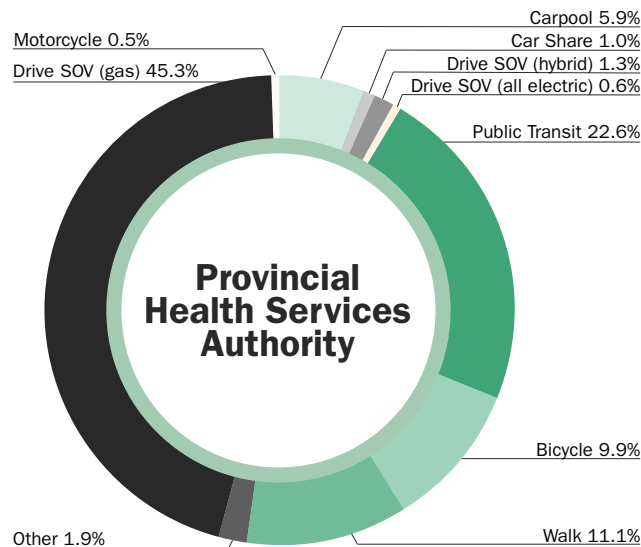
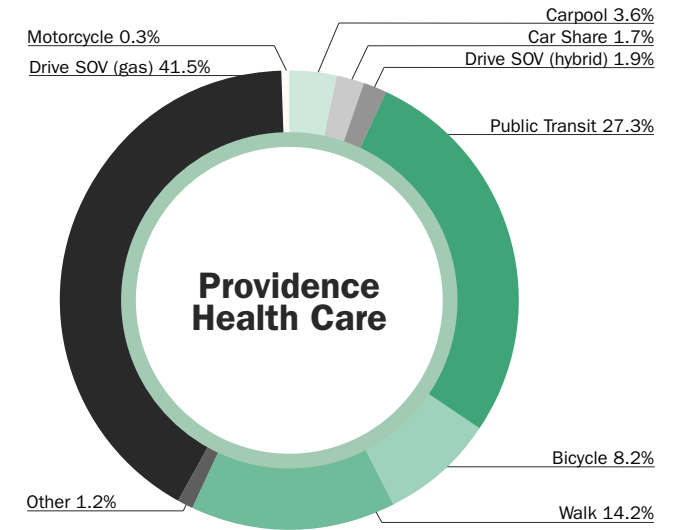
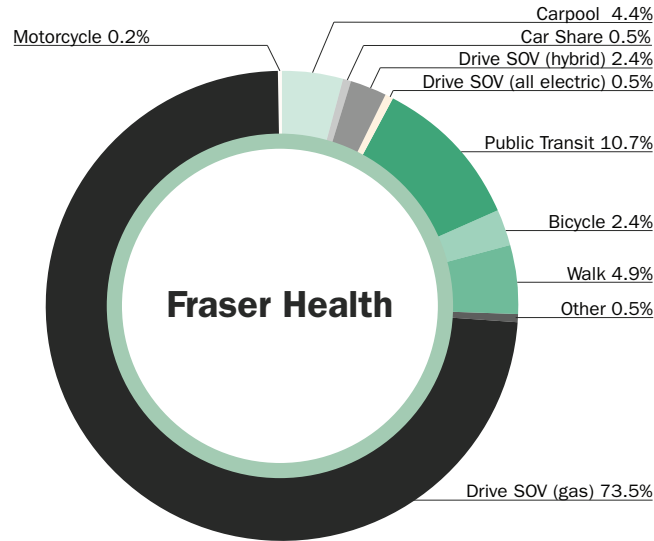


a. Includes all energy, water and waste monitored at (core) lower mainland health care acute and residential care facilities.

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LOWER MAINLAND HEALTHCARE ORGANIZATIONS COMPARISON TABLE
GOALS, KEY PERFORMANCE INDICATORS AND TARGETS

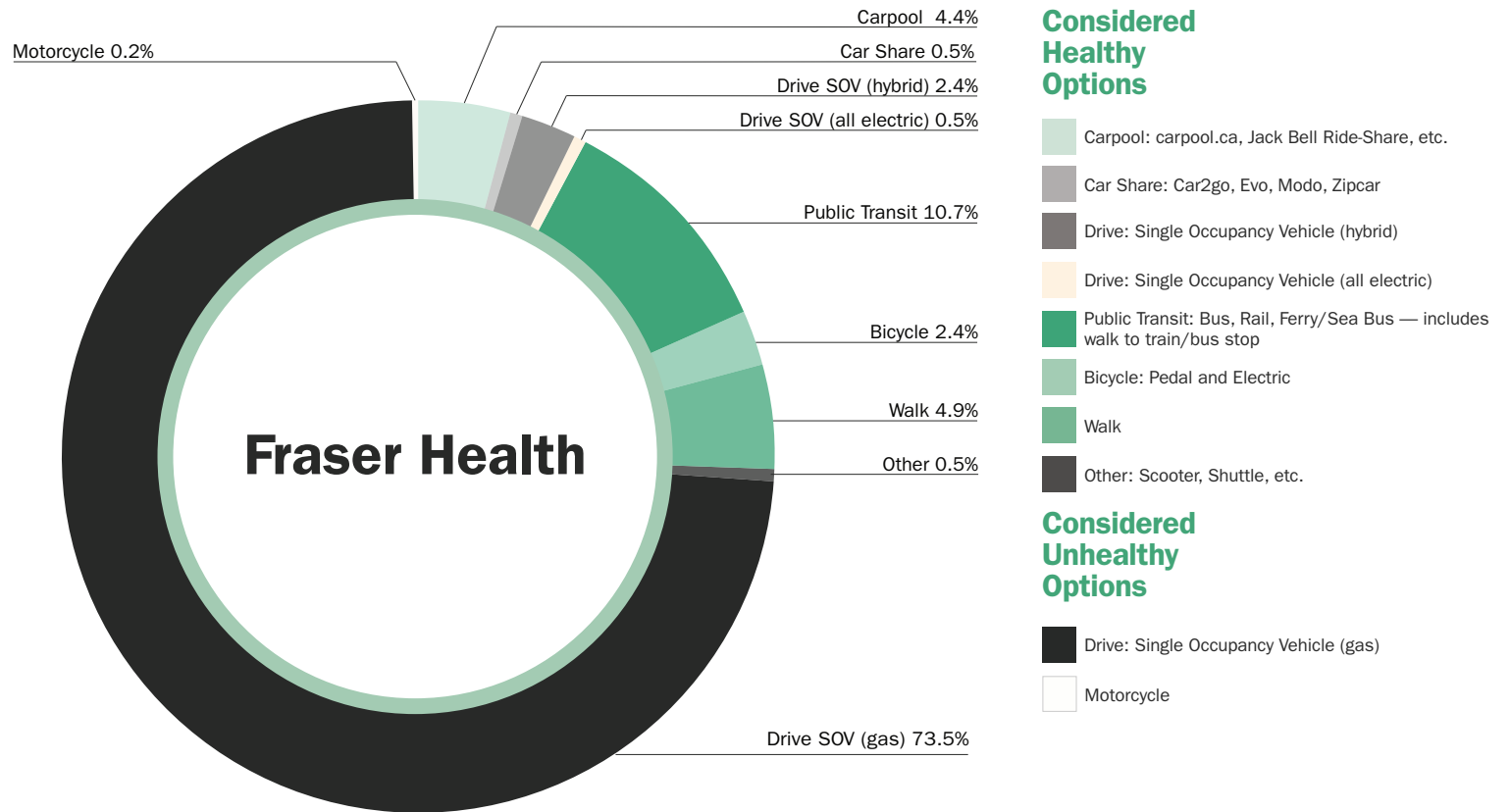
Staff Commute: Percentage of Time Per Mode^a (2016)



a. Reported as a percentage of time that staff used this mode for commuting to work. This is determined by adding up all the percentages and then dividing the sum by 100% of all relevant respondents.

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Staff Commute: Percentage of Time Per Mode^a (2016)



Considered Healthy Options

- Carpool: carpool.ca, Jack Bell Ride-Share, etc.
- Car Share: Car2go, Evo, Modo, Zipcar
- Drive: Single Occupancy Vehicle (hybrid)
- Drive: Single Occupancy Vehicle (all electric)
- Public Transit: Bus, Rail, Ferry/Sea Bus — includes walk to train/bus stop
- Bicycle: Pedal and Electric
- Walk
- Other: Scooter, Shuttle, etc.

Considered Unhealthy Options

- Drive: Single Occupancy Vehicle (gas)
- Motorcycle

a. Reported as a percentage of time that staff used this mode for commuting to work. This is determined by adding up all the percentages and then dividing the sum by 100% of all relevant respondents.

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5.5 CULTURE CHANGE

Integrate the environmental impact of health care operations, and its connection to the health of populations, into decision-making priorities, workplace practices and organizational values across the Lower Mainland Health Care Organizations.



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Culture Change

A culture of environmental sustainability in the workplace benefits employees, operations and the larger community. An organization's values penetrate all aspects of business, from patient care and employee retention to purchasing policies and operational protocols. If an organization values the positive impacts of environmental sustainability on health, this priority will emerge in organizational decision-making and actions. Similarly, as employees learn about and act in favour of healthy environments in their work, their values and behaviours — whether at or outside of the workplace — will more readily align with these priorities.

To achieve our Culture Change goal, we must ensure the following for all employees of the Lower Mainland Health Care Organizations (LMHOs) (in all departments and at all levels): exposure to relevant information and ideas via on-point communication tactics; training that enables them to lead and influence their colleagues; opportunities for them to contribute in areas of programmatic interest; and active involvement in the advancement of current and evolving sustainability policies.

The primary tool currently used to engage staff across the LMHOs is the [GreenCare Community Website](#).

The Culture Change team has learned from staff that inadequate funding presents a real barrier to the realization of project ideas that would support the greening of workspaces and process. In response, we created a Green Engagement Fund and Project Fund that are available to participating [Green+Leaders](#). These funds provide between \$75-\$500 in support to staff members who make a relevant funding request by way of a proposal; the proposal needs to demonstrate a well thought out idea, an appropriate budget and work stream, and benefits for human and environmental health.

Goals

- 1 Support overall awareness by maintaining a specific number of posted unique good news stories on various internal communication channels.
- 2 Increase the number of staff directly trained in energy and environmental sustainability workplace practices.
- 3 Support innovation and organizational improvement through the funding of staff initiated green sustainability projects.



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Our Progress

The following table is an overview of our progress based on 2020 targets. A quantitative analysis of our initiatives and progress is provided in [Section 5.5.3: Statistics](#).

Culture Change			2020 Targets				2017 Results			
Goals	Key Performance Indicators (KPIs) and Baseline (if applicable)		Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health	Fraser Health	Providence Health Care	Provincial Health Services Authority	Vancouver Coastal Health
1	Support overall awareness by maintaining a specific number of posted good news stories on various internal communication channels.	# of stories per year	24	12	24	24	17	16	16	16
2	Increase the number of staff directly trained in energy and environmental sustainability workplace practices. ^a	% of total staff (annual)	5%	5%	5%	5%	2.5% (463 staff trained since 2012)	2.1% (100 staff trained since 2012)	5.7% (517 staff trained since 2012)	2.1% (304 staff trained since 2012)
3	Support innovation and organizational improvement through the funding of staff initiated green sustainability projects.	# of projects per year	10	5	10	10	3	2	2	3

a. This includes all staff trained under the Green+Leaders Program, Recycling Champions Program, and Facilities EnergyWise Program.

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5.5.1 Programs

Program 1
Green+Leaders

Program 2
GreenCare Community



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Program 1 Green+Leaders

The [Green+Leaders Program](#) provides direct engagement and support for health care staff in their efforts to create environmentally sustainable workspaces and process. With approval from their managers, staff volunteers train for and commit to the representative position of Green+Leader for their unit or site. They then set a certain number of hours per week in which to evaluate their work area for opportunities to reduce its environmental impact and facilitate a positive transformation.

Green+Leaders make a significant contribution to the improvement of the environmental performance of the Lower Mainland Health Care Organizations:

More than 500 trained staff volunteers (working in all areas of health care) now “bring their values to work” by participating in the Green+Leaders program.

They are staff role models that are encouraging environmentally sustainable behaviour, improving existing processes and helping to create an overall culture of environmental health and wellness inside and outside the workplace.

The program focuses on behaviour change in four key areas:

- Zero Waste
- Energy conservation and climate neutrality

- Active and clean transportation
- Stewardship culture/social sustainability

The Green+Leaders Program supports our Culture Change efforts while providing the following benefits to staff volunteers:

- Training, tools and leadership development
- Support from a community of like-minded colleagues
- Participation in inspiring and educational events
- Opportunities for making a positive, meaningful impact on workplace and community

GreenCare 2017

Environmental Performance
Accountability Report

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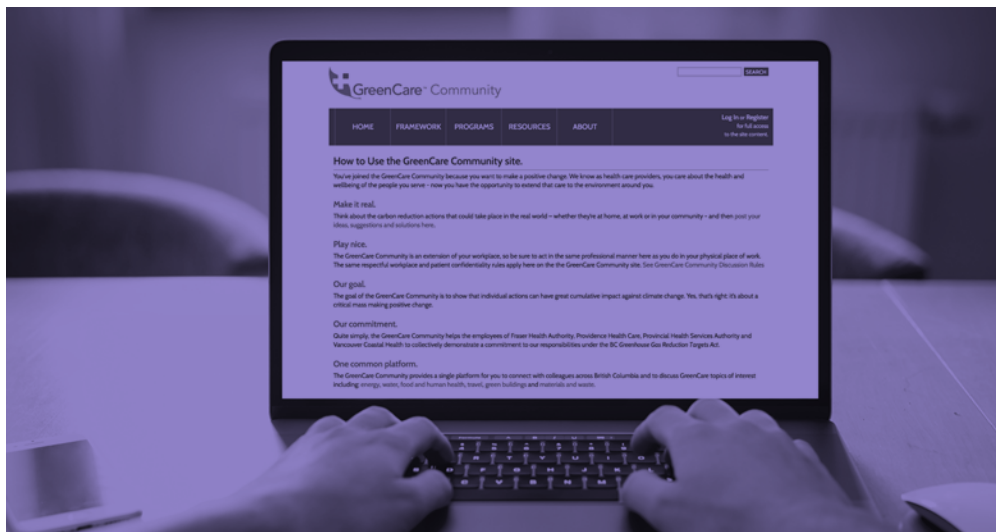
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Program 2 GreenCare Community

GreenCare Community is a networking, engagement and communication program intended to provide staff with resources on health care greening and a channel for sharing strategies, contacts and success stories.

The [GreenCare Community Website](#), launched in 2011, is the primary tool used by the Culture Change team to share relevant information and to engage staff across the Lower Mainland Health Care Organizations. Through the website, employees can join groups, discuss issues with colleagues, and network with like-minded peers; all website visitors and contributors are members of the GreenCare Community.

The program enables employees to learn from experts and peers across B.C. and to connect with trusted colleagues in sharing resources and collaborating on projects. It also inspires employees to action by helping them identify and commit to achievable changes and goals both inside and outside the workplace.

By sharing their commitments, challenges and successes, GreenCare Community members are effecting a cultural shift in support of environmental sustainability and improved human health.

The GreenCare Community continues to grow steadily year after year. Staff participation in the program is anticipated to increase

following a planned digital refresh of the website's design, along with a partnering communication strategy potentially involving other health authorities within B.C.

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Fraser Health's Story

Questioning Current Systems Leads to Environmental Gains

When Queenie Lai, Clinical Program Manager for the Neonatal Intensive Care Unit (NICU) at Royal Columbian Hospital, joined her unit six years ago, she immediately noticed the large volume of daily lab report printouts that no one seemed to use. Every week she watched the printer spit out up to 2,250 sheets of paper that were either filed or sent for confidential shredding.

Asking about value

Queenie was frustrated by her unit's paper waste but wasn't sure how she could change it. She started by asking herself and her colleagues one simple question: "What is the value of these reports?"

She went to each of the department's five physicians and then to the Site Medical Director to learn if they had any concerns with eliminating the printouts. With each conversation, it became clear that these reports served no clinical purpose and that electronic medical records (EMR) provided a better view of a patient's history.

Green allies

When Queenie connected with Laboratory Site Supervisor Nafisa Ali, she found a powerful ally. Nafisa, a long-time participant in the Green+Leaders Program, knew exactly who could help make the change happen: Adeline Yee, a Regional Laboratory Information Systems Coordinator, became the liaison to the NICU to handle the technical aspects of the transition once all the approvals were in place.

A better system

The NICU clerk no longer has to sort and file printouts each day. Money is saved on paper and toner costs.

The new system also saves 53,477 gallons of water, prevents nine tonnes of trees from being harvested and reduces carbon emissions by 5.8 metric tonnes.

This story has proven that reducing a department's carbon footprint and providing excellent patient care are mutually achievable goals. It has inspired a culture change across Fraser Health, and other wards are requesting that printed reports be discontinued. Queenie and Nafisa are now looking to make similar changes happen beyond the NICU at Royal Columbian Hospital.

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5.5.3 Statistics

The following data tables are presented under each of our three Key Performance Indicators (KPIs) for Culture Change to provide quantitative analyses of our initiatives and progress.

Goals

- 1 Support overall awareness by maintaining a specific number of posted, unique good-news stories on various internal communication channels.
- 2 Increase the number of staff directly trained in energy and environmental sustainability workplace practices.
- 3 Support innovation and organizational improvement through the funding of staff initiated green sustainability projects.



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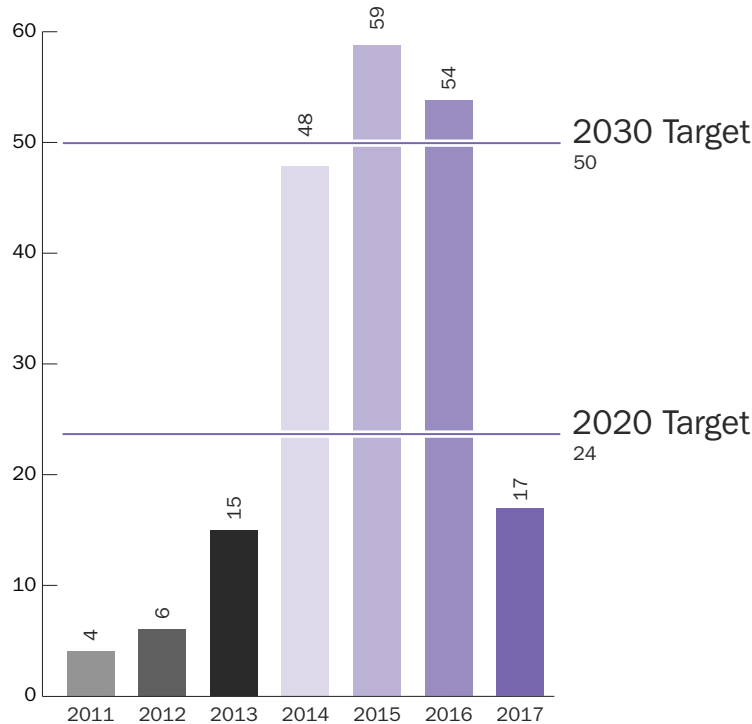
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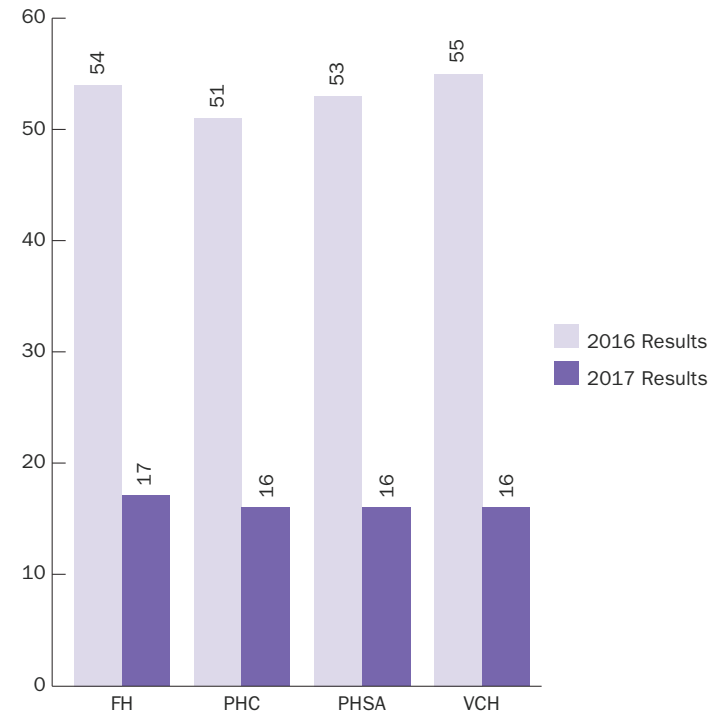
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13. Support overall awareness by maintaining a specific number of posted unique good news stories on various internal communication channels.

Number of GreenCare-related published stories (per year)



Lower Mainland Health Care Organizations Comparison Table



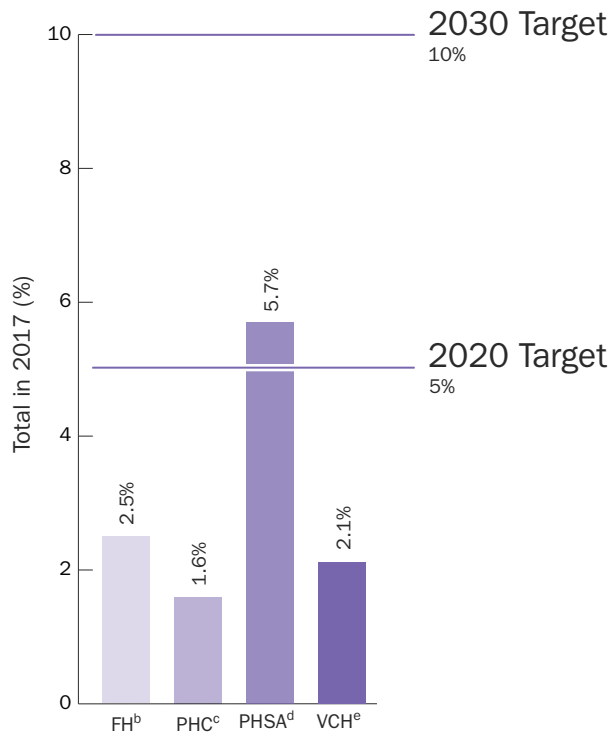
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GOALS, KEY PERFORMANCE INDICATORS AND TARGETS

14. Increase the number of staff directly trained in energy and environmental sustainability work place practices.

Percentage of staff directly trained in energy and environmental sustainability work place practices^a



a. Includes all staff formally trained through the Green+Leaders, Recycling Champion, and BC Hydro “Workplace Conservation Awareness” and “EnergyWise” programs

b. FH staff count increased by 10% from 2012 to 2017.

c. PHC staff count decreased by 3% from 2012 to 2017.

d. PHSA staff count increased by 40% from 2012 to 2017.

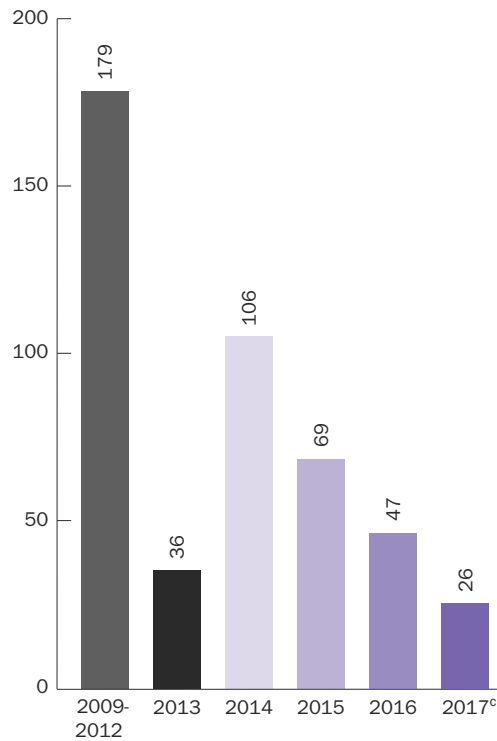
e. VCH staff count increased by 3% from 2012 to 2017.



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14. Increase the number of staff directly trained in energy and environmental sustainability work place practices.

Number of staff directly trained, each year, in energy and environmental sustainability work practices^{a,b}



a. Since 2012 BC Hydro has sponsored two different energy conservation programs directed at staff behaviour (“Workplace Conservation Awareness” and “EnergyWise”).

b. Includes all Lower Mainland Health Care Organization contracted staff from Sodexo and Brookefield/Johnson Controls.

c. In 2017, no new Recycling Champions were trained as the program was re-evaluated.

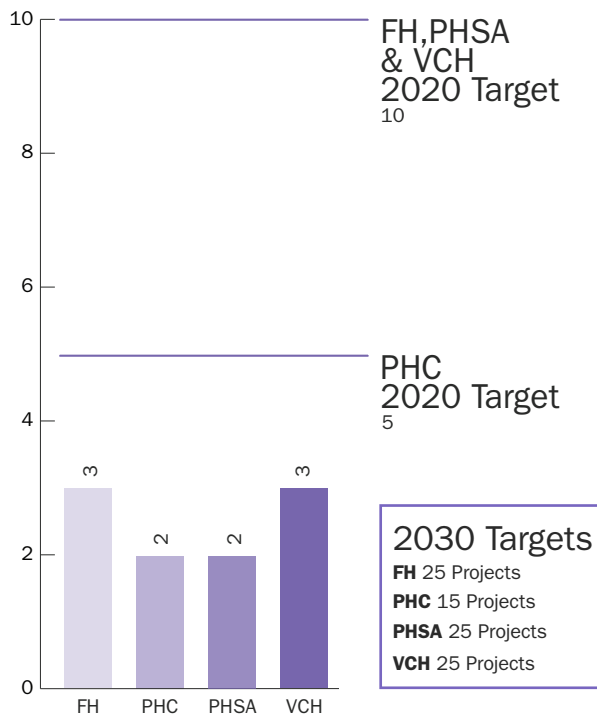
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LOWER MAINLAND HEALTHCARE ORGANIZATIONS COMPARISON TABLE

GOALS, KEY PERFORMANCE INDICATORS AND TARGETS

15. Support innovation and organizational improvement through the funding of staff initiated “green” sustainability projects.

Number of projects funded in 2017



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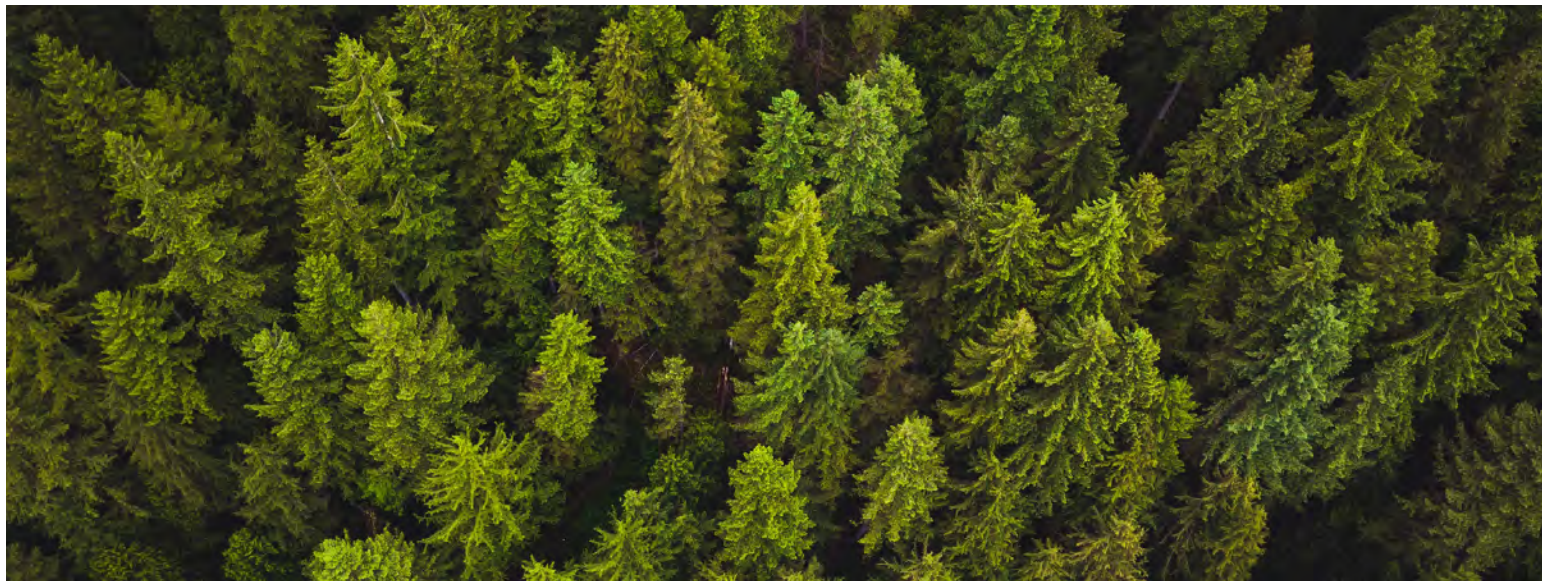
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The Energy and Environmental Sustainability (EES) Team has built in a level of internal controls and monitoring systems as part of our verified assurances for the Environmental Performance Accountability Report. This includes a database, hosted by a third party (E-Factor Engineering), to capture and analyze all energy and water data.

Data on material/solid waste, including organics, is tracked and reported accordingly by Business Initiatives & Support Services monitoring and verification processes.

Data on Active & Clean Transportation KPIs is gathered, monitored and verified by Lower Mainland Integrated Protection Services.

Culture Change data is captured, monitored and verified by the EES Team through surveys and focus groups.

All historical data is reviewed periodically to ensure accuracy with evolving metering and understanding.

External Assurances

Data in the Carbon Neutral Action Reports (CNAR) is verified through an internal and external assurance process governed by the Provincial Climate Action Secretariat and its SMARTtool reporting database. This assurance is subject to external audits by an independent third party.

Historically, [Deloitte](#), a major consulting firm, has conducted external audits on Vancouver Coastal Health and Fraser Health energy and carbon reporting. Each time after review, Deloitte verified the internal assurances process as being transparent and accurate.

British Columbia Health Care Corporate Websites

To learn more about your local or regional health care provider, please visit the following websites:

- [First Nations Health Authority](#)
- [Fraser Health](#)
- [Interior Health](#)
- [Island Health](#)
- [Northern Health](#)
- [Providence Health Care](#)
- [Provincial Health Services Authority](#)
- [Vancouver Coastal Health](#)