



GreenCare™  
**2022**  
Environmental Performance  
Accountability Report

# Environmental sustainability is everyone's story.



**Providence  
Health Care**

How you want to be treated.



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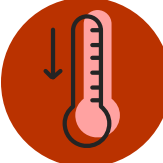

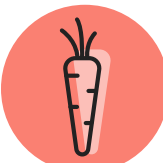
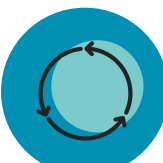


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# Our Focus Areas

-  **Leadership and Innovation**
-  **Climate Change**
-  **Energy and Carbon**
-  **Food**
-  **Materials**
-  **Transportation**
-  **Water**

**i** This is an interactive report. Easily navigate to different sections by **clicking** on the text headings.

To view a different health organization report, select it from the navigation bar to the left.

This report was written by the Energy and Environmental Sustainability (EES) team, a regional collaboration of four health organizations that works in partnership with the Environmental Stewardship team and Green+Leaders. It focuses on collaborative actions and achievements in relation to low-carbon, climate resilience and environmental sustainability, but it does not include all of our partners’ additional actions and achievements undertaken in the shared journey toward planetary health.

The EES team also partners with clinical and non-clinical departments and health-care and medical staff for impact in diverse areas. Our team’s role is about raising awareness and building capacity, in part by uniting efforts and amplifying achievements across the Lower Mainland region and beyond. You will see much of this work on the [GreenCare Network website](#).



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St. Vincent's: Brock Fahrni Pavilion in Vancouver, B.C.

Welcome to the 11<sup>th</sup> annual Environmental Performance Accountability Report (EPAR), which acknowledges everyone at Providence Health Care (Providence) for their continuing efforts to achieve environmental sustainability and climate resilience in all areas of our health system, identifies where we need to improve, and makes clear how we can do it.

We are an organization that puts individuals and communities at the centre of care, and we recognize that for this care to be inclusive and effective, it must acknowledge the intersection of health, social justice and the environment.

Our climate reality profoundly impacts each of these spheres, undermining physical and mental health, exacerbating inequality, and damaging the ecosystems upon which we depend. It is a clear and present danger. But it is not insurmountable.

Just as stewardship, one of our key organizational values, has long guided our organization in providing compassionate and innovative care, teaching and research, it guides us in taking personal responsibility for the environmental impact of our organization and finding solutions that will restore planetary health.

This report speaks to our environmental stewardship, highlighting our achievements in 2022. We can all take pride in and inspiration from these, including:

- ▶ Forming the Environmental Stewardship team with cross-departmental participation, with the purpose of supporting Providence to become a sustainability leader and to reduce the environmental impact of health-care operations.
- ▶ Embedding climate risk and resilience planning into major capital projects.
- ▶ Reducing Providence's in-scope emissions footprint by 9.3% (since 2007).
- ▶ Achieving 77% waste diversion at St. Vincent's: Honoria Conway - Heather.
- ▶ Installing a solar photovoltaic system on Mount Saint Joseph Hospital's roof, which could generate up to 50 kW electricity for continuous use in the building electrical systems — the first use of solar panels at a Providence facility.
- ▶ Adding cooling, reducing carbon emissions by 80% and subscribing to renewable natural gas at St. Vincent's: Brock Fahrni, making it the first Providence site to be a net-zero carbon emission facility.

I know that each of us cares deeply about our colleagues, patients, families and communities. It is integral to who we are, and to the work that we do. And it is in this spirit of caring that we will keep our shoulder to the wheel and build a resilient and sustainable health system for all.



**Fiona Dalton**  
 President and Chief Executive Officer  
 Providence Health Care | Driven by compassion  
 and social justice, we are at the forefront of  
 exceptional care and innovation



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# 1.1 Milestones and Achievements

Here's a summary of our 2022 milestones and achievements, and what to watch out for throughout 2023 and beyond:

## First ever!



**Environmental Stewardship team** formed with cross-departmental participation to support Providence in becoming a **sustainability leader** and **reducing the environmental impact of health-care operations** on the environment.



Installed a **solar photovoltaic system** on Mount Saint Joseph Hospital's roof, which can generate up to 50 kW of electricity for continuous use in the building electrical systems — the first use of **solar panels** at a Providence facility.



Partnered with **CASCADES** on **innovative work** to measure **scope 3 greenhouse gas emissions**, which are the emissions associated with **waste generation, purchased goods and services, business travel**, and more.



St. Vincent's: Brock Fahrni added cooling, **reduced carbon emissions** by **80%** and subscribed to **renewable natural gas**, making it the first Providence site to be a **net-zero carbon emission** facility.

## Environmentally preferable decision-making

- Incorporated environmental questions into the mobile MRI and CT scanner procurement process, resulting in a toolkit for action in the Radiological Society of North America's Journal: Radiology ([published 2023](#)).
- Included environmental questions in Facilities Management Procurement pre-qualification of construction services.

## 2022 sustainability highlights

Achieved a

**9.3%**

**decrease** in greenhouse gas emission compared to 2007.



Registered

**15**

new **Green+Leaders** — change agents who encourage environmentally sustainable behaviour, improve existing processes, and help to create an overall **culture of environmental health and wellness**.



**St. Vincent's: Brock Fahrni** recognized by the International Federation of Health Care Engineering for achieving the **largest energy reduction in Canada**.



Formed a regional **electric vehicle (EV) steering committee** in order to support regional collaboration for **providing EV charging**.



**St. Vincent's: Honoria Conway - Heather** achieved

**77%**

**waste diverted** to recycling instead of landfill.





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# 2.0 Our Sustainability Story





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# 2.1 Providence's Commitment to Environmental Stewardship

With climate change posing a serious threat to human health, the urgency to focus on sustainability and build climate resilience is clear. Providence is accelerating our activities to significantly reduce the harmful environmental impacts of the health system and adapt to be resilient to climate shocks and stressors, in alignment with the B.C. Ministry of Health Mandate Letter and [the CleanBC Roadmap to 2030](#).

## Environmental Stewardship, a foundational principle

Sustainability is a foundational principle of our Mission: Forward Strategic Plan. At its core, our sustainability plan is about ensuring we can continue to pursue our mission into the future by reducing our environmental footprint to achieve — and hopefully exceed — national benchmarks for sustainable, green and minimal impact. Everyone at Providence has a role to play, and our new Environmental Stewardship team is leading the way.

Created by members of the Providence community to help all of us meet the sustainability challenges identified in the Environmental Stewardship foundational principle, the team's goal is to coordinate sustainability and climate resilience initiatives within Providence. Four working groups (Waste, Food, Communications and Education, and Measurement and Evaluation) have since been established, and key members have stepped up as team leads. Members within the broader team and across Providence are welcome to participate in one or multiple working groups as ongoing members or on a project-specific basis to help move the dial on environmental sustainability initiatives.

“Sustainability is a foundational principle of Providence's Mission: Forward Strategic Plan. It guides us in ensuring that environmental stewardship is at the heart of our work as we take meaningful and concrete action to face the challenges presented by climate change while continuing to provide excellence in patient care.

– Theresa McElroy, Corporate Director  
 Strategic Planning & Management

### RECOGNIZING INDIGENOUS NATIONS AND COMMUNITIES

We would like to humbly and gratefully acknowledge that the work guided by our Mission: Forward Strategic Plan will be delivered on the unceded, traditional and ancestral lands of the Coast Salish people —and, in particular, the xʷməθkʷəy̅əm (Musqueam), Skwxwú7mesh (Squamish), and Səlilwətaʔ/Selilwitulh (Tsleil-Waututh).

We acknowledge that there is much to be learned about environmental stewardship from these nations and communities.



St. Paul's Hospital in Vancouver, B.C.



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## 2.2 Building and Operating for Environmental Sustainability

In operating our current facilities, and in the design and construction of new facilities, Providence is supporting the highest level of human and environmental health and well-being by:

- ▶ Evaluating and reducing the impacts of climate change on a facility and the surrounding community (e.g. wildfires, extreme heat, floods and storms)
- ▶ Assessing how the design, construction and operation strategies of a facility will impact the environment and human health
- ▶ Drawing on credible evidence that links health outcomes to planning and design of the built-environment
- ▶ Implementing low-carbon, climate resilience and environmental-sustainability strategies
- ▶ Collaborating with project compliance teams to ensure energy and carbon performance targets are embedded into design and construction agreements
- ▶ Achieving LEED certification (a globally recognized green-building rating system administered by the Canadian Green Building Council)
- ▶ Meeting and exceeding environmental and climate change legislation

Our buildings<sup>A</sup>

# 182,301 m<sup>2</sup>

usable facility space

# 45

distinct buildings

# 5,595

full-time equivalent staff<sup>B</sup>

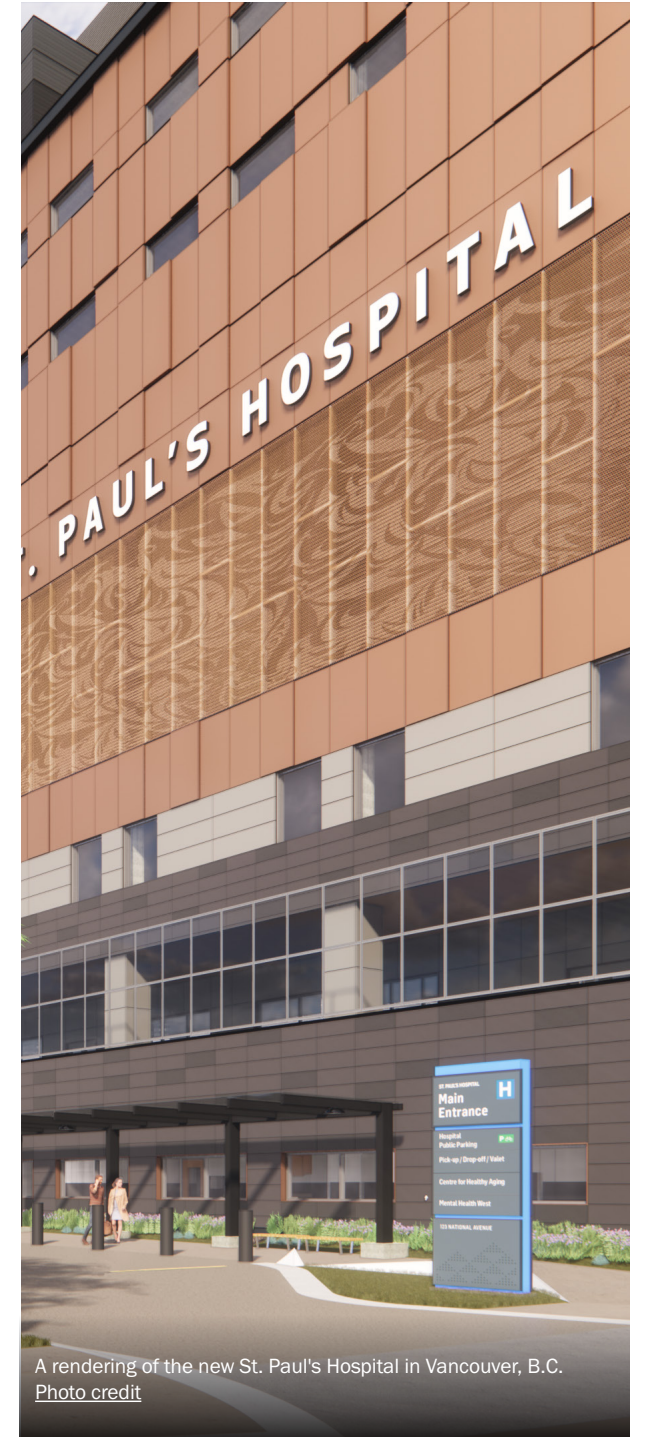
# 799 m<sup>2</sup>

LEED-certified facility space

### Our LEED projects

LEED certification is a globally recognized symbol of sustainability achievement and leadership.

To learn more about Providence's LEED projects click [here](#).



A rendering of the new St. Paul's Hospital in Vancouver, B.C.  
Photo credit



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# 3.0

# Our Progress: Setting Targets and Measuring Results





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## 3.1 The 2022 Dashboard

Setting targets helps us all to recognize achievements and act to transform our health-care system toward environmentally sustainable and climate resilient care. A target may be provincially or regionally mandated, or be Providence-developed and based on past trends and current resourcing.

### Regulatory guidance

The [Climate Change Accountability Act](#) (CCAA) has set ambitious greenhouse gas (GHG) emissions reduction targets (from a 2007 baseline) for public sector organizations:

**40%**

by 2030

**60%**

by 2040

**80%**

by 2050

These targets include emissions from owned and leased buildings, and from the use of fleet vehicles and paper consumption. For reference, 98% of Providence's emissions come from buildings, while the rest come from fleet and paper.

The government's [CleanBC plan and Roadmap](#) is the pathway to achieve these targets and has set even more aggressive targets:

**50%**

reduction in emissions for public sector buildings by 2030

**40%**

reduction in fleet vehicle emissions by 2030

### Measuring results

The 2022 dashboard captures 11 key performance indicators (KPIs). It is a snapshot in time of our progress and, this year, includes links to trends in previous years and how we will meet our targets.

However, the dashboard alone doesn't tell the entire story. Environmental sustainability is a journey, and there are many process-related KPIs and qualitative efforts that are not included in this dashboard. In addition, some Focus Areas are not represented because of active work to identify the current situation and collaborate on the development of performance targets. To learn more, see [4.0: Our Actions: Finding Solutions Together](#).

For information on the methodology behind the KPIs in the dashboard on the following pages, see [the Energy and Environmental Sustainability \(EES\) Methodology and Context for Calculating Key Performance Indicators](#).



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# Energy and Carbon

Goal: Reduce our carbon footprint by increasing energy efficiency and reducing reliance on fossil fuels.

New construction activity increases our impact on the environment and is growing at a fast pace.

Key Performance Indicator (Metric)	2022 Results	2025 Target	2030 Target & Traffic Light
<b>CCAA legislated target:</b> Reduce in-scope* GHG emissions from the 2007 baseline (tCO <sub>2</sub> e/year)	9.3%	16%	40% ▼
<b>CleanBC plan target:</b> Reduce building GHG emissions of owned and leased properties from the 2007 baseline (tCO <sub>2</sub> e/year)	10.2%	16%	50% ●
Reduce owned and leased building GHG-emissions intensity from the 2007 baseline (tCO <sub>2</sub> e/m <sup>2</sup> /year)	14.4%	25%	50% ●
Reduce owned and operated building** energy-use intensity from the 2007 baseline (ekWh/m <sup>2</sup> /year)	19.3%	20%	25% ■

## How we will reach our targets

- Partnering with Facilities Maintenance & Operations teams presents an opportunity to identify ways to integrate energy and emissions reduction strategies and support optimization of infrastructure and equipment.
- In collaboration with internal and external partners, we are seeking and implementing a combination of net zero emission designs for new construction and aggressive energy retrofits to existing facilities.
- As we renew our energy infrastructure and assets, we have the opportunity to make system-level changes and shift to lower-impact facilities.

Want to see the trends? Go to the [Energy and Carbon graphs](#) in Appendix B.

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- On track to meet 2030 target
- ▼ Minimal or slow progress towards 2030 target
- Behind schedule to meet 2030 target, and requires attention

\* In-scope refers to emissions from owned and leased buildings, and from the use of fleet vehicles and paper consumption.

\*\* Does not include leased buildings.



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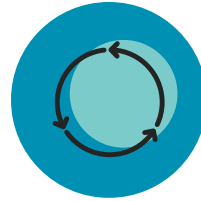
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# Materials

Goal: Choose materials and products that contribute to human and environmental health, while avoiding waste and unnecessary chemicals.

Recycling options are shaped by **global market demand, ability of local processors, complexity of materials and facility logistics.**

Key Performance Indicator (Metric) *	2022 Results **	2025 Target	2030 Target & Traffic Light
Increase waste-diversion rates at acute care owned and operated sites <sup>c</sup> (% of waste diverted, annual average)	27%	30%	40% ▼
Increase waste-diversion <sup>†</sup> rates at non-acute care owned and operated sites <sup>d</sup> (% of waste diverted, annual average)	37%	40%	60% ▼
Decrease waste-intensity <sup>§</sup> rates at acute care owned and operated sites (kg/m <sup>2</sup> /year)	12.6	11.3	10.2 ▼
Decrease waste-intensity rates at non-acute care owned and operated sites (kg/m <sup>2</sup> /year)	16.9	15.2	13.7 ▼

## How we will reach our targets

- A shift away from recycling alone and toward overall waste reduction is required, including choosing reusables over disposables and exploring ways to share or donate usable items to prevent them from going into landfill. Collaboration and close partnership with clinical and procurement staff will be key ingredients in this journey.

Want to see the trends? Go to the [Materials graphs](#) in Appendix B.

- On track to meet 2030 target
- ▼ Minimal or slow progress towards 2030 target
- Behind schedule to meet 2030 target, and requires attention

\* Does not apply to leased buildings because waste management is the responsibility of the property manager and out of the hands of Providence.

\*\* In 2022, recycling bins were returned to patient care areas at Mount Saint Joseph Hospital and St. Paul's Hospital, but the recycling rate has not yet reached pre-2020 service levels. Recycling in long-term care sites is mostly back to normal.

† Waste diversion refers to waste going to recycling or compost instead of landfill.

§ Waste intensity refers to how much total waste (landfill, recycling and compost) is generated compared to the size of a facility, and helps to measure overall waste reduction at a site.



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# Transportation

Goal: Increase access to and use of transportation modes that reduce negative environmental impacts and benefit human health and wellness.

Key Performance Indicator (Metric)	2022 Results	2025 Target	2030 Target & Traffic Light
Increase proportion of staff commuting by active transportation modes such as cycling, walking and rolling* (as reported in the GreenCare survey; <sup>£</sup> annual average)	24%	30%	35% ▼
Increase proportion of staff commuting by clean transportation modes such as hybrid and electric single occupancy vehicles, public transit, carshare, carpool and hospital shuttle (as reported in the GreenCare survey; <sup>£</sup> annual average)	42%	40%	50% ▼

Want to see the trends? Go to the [Transportation graphs](#) in Appendix B.

Access to sustainable commuting is shaped by the municipal and regional transportation infrastructure between home and work locations.

## How we will reach our targets

Continuing to work collaboratively across the health system with internal and external partners to strategically develop and prioritize efforts will:

- Increase electric vehicle (EV) and cycling (including scooters, e-bikes, etc.) infrastructure (including charging stations, safe storage for bicycles, and gear, and showers and change rooms).
- Facilitate carpooling and promote public transit.
- Engage and empower staff to choose clean or active transportation to commute and while working.

■ On track to meet 2030 target

▼ Minimal or slow progress towards 2030 target

● Behind schedule to meet 2030 target, and requires attention

\* e.g. wheelchair, seated electric scooter



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# Water

Goal: Minimize water consumption to reduce demand on natural resources and impact on our living environments.

Key Performance Indicator (Metric)	2022 Results	2025 Target	2030 Target & Traffic Light
Reduce building water (use) performance intensity* (m <sup>3</sup> /m <sup>2</sup> /year) from the 2010 baseline	11.3%	20%	30% ▼

Want to see the trends? Go to the [Water graphs](#) in Appendix B.

Water supports many clinical and non-clinical activities, including heating and cooling of our facilities.

## How we will reach our targets

- Working collaboratively across health-system departments will enhance our understanding of water end uses and saving opportunities at Providence facilities, and support our strategy to prioritize water management planning efforts and allocation of resources.

- On track to meet 2030 target
- ▼ Minimal or slow progress towards 2030 target
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\* The total of all indoor water metres in volume divided by the building metres squared.



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# 4.0 Our Actions: Finding Solutions Together



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# 4.1 Focus Areas

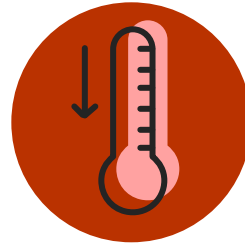
The Energy and Environmental Sustainability (EES) team works to drive change across the health system, and has categorized efforts to advance environmentally sustainable and climate resilient health care into seven Focus Areas. The selection of actions, achievements and stories in each Focus Area represents the work of the EES team, as well as collective efforts. The EES team cannot do this work alone, and works in collaboration and partnership with teams, departments, and health-care staff and medical staff. For a full list of partners, see [Appendix A](#).

In working together to find solutions that restore and regenerate planetary health, it is important to note that leadership and innovation are essential elements for meaningful transformation of the health-care system, particularly in driving engagement, education and relationship-building. As we all move along our low-carbon, climate resilience and environmental sustainability journey, efforts made as part of the Leadership and Innovation Focus Area will intersect with and impact all other Focus Areas.

Just like the connections between human and environmental health, these Focus Areas are interrelated in that efforts and progress made in one will impact the others.



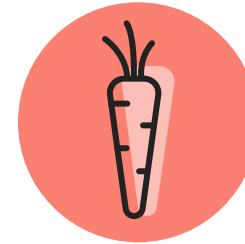
**Leadership and Innovation**



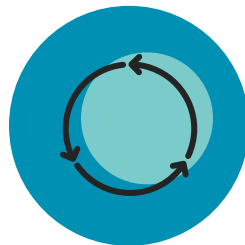
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Want to read stories or find information and resources related to these Focus Areas? Visit [here](#).



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# 1. Leadership and Innovation

**Our goal:** Collaboratively foster a culture of transformative leadership and innovation for environmental sustainability in health care.

LEARN MORE

## Snapshot in numbers

**54**

Green+Leaders from over 10 different facilities have joined since 2009.

**8**

Green+Leader orientation sessions.

**7**

virtual coffee conversations for Green+Leaders.

**7**

GreenCare Network Lunch and Learn events hosted.

## Select 2022 actions and achievements

- ▶ 15 new Providence staff registered for the Green+Leaders community, a threefold increase from 2021.
- ▶ 47 Providence staff joined the Environmental Stewardship team, representing diverse facilities and roles across the system including physicians, nurses, allied health, and corporate and support services.
- ▶ Partnered with CASCADES on innovative work in the Canadian health-care context to measure scope 3 greenhouse gas emissions, which are the emissions associated with waste generation, purchased goods and services, business travel, and more.
- ▶ Added waste intensity and diversion metrics to the Mission: Forward Quarterly Update Report, which the Senior Leadership team reviews every quarter.
- ▶ Supported implementation of the B.C. Ministry of Health's direction on Carbon Neutral and Climate Resilient Health Care Facilities and Environmental Sustainability and LEED Gold Certification in the Health Capital Policy Manual as part of business planning and the procurement process for the proposed St. Vincent's: Langara long-term care site.

The 2022 Green+Leaders Annual Report recognizes all staff and medical staff working to decrease the environmental footprint of their workplaces and health systems.

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Plastic recycling at St. Paul's Hospital in Vancouver, B.C.

OUR STORY

**Teeming with  
sustainability ideas**

By establishing the Environmental Stewardship team (ESTeam), Providence is supporting all staff and medical staff in taking concrete action to realize its mission of becoming a leader in sustainability in the B.C. public health sector.

[Read more ▶](#)



Signage at Mount Saint Joseph Hospital in Vancouver, B.C.

“

**I work in the ER and every day I see so many opportunities where we could just avoid using the extra IV bags, or the second dressing package, or the syringes ... there are so many ways we can think about and reinforce reducing waste as individuals.**

– Leyla Khosrovpour, Emergency Department Registered Nurse and ESTeam Member



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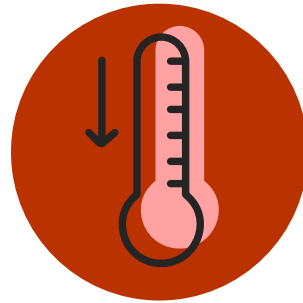
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## 2. Climate Change

**Our goal:** Move toward a climate resilient health system in facility design and operations.

LEARN MORE

### Snapshot in numbers

**3**

facility exposure screens to identify potential climate hazards.

**2**

climate risk assessments to prioritize climate impacts.

**The Climate Change Accountability Act requires public sector organizations to “manage the risks to the public sector organization that could reasonably be expected to result from a changing climate”.**

### Select 2022 actions and achievements

- ▶ Embedded climate risk and resilience into major capital projects, including the new St. Paul's Hospital and St. Vincent's: Honoria Conway - Heather long-term care facility, with the purpose of adapting to climate change.
- ▶ Initiated a portfolio-level climate hazard exposure screen to identify areas of vulnerability and prioritize actions at nine Providence facilities.
- ▶ Continued efforts to upgrade mechanical cooling capacity at all sites, with a focus on long-term care facilities.
- ▶ Collaborated on the federally funded [HealthADAPT project](#) (2019-2022), and worked with partners to develop a [Climate Change & Health Adaptation Framework](#), outlining current actions and identifying new priorities.
- ▶ Engaged in the B.C. Ministry of Health's From Risk to Resilience initiative, with a specific focus on the extreme heat, wildfire and flood events of 2021.
- ▶ Continued seasonal readiness planning activities, ensuring a coordinated approach to communication and action before, during and after extreme weather events.
- ▶ Delivered a Green+Leaders [Lunch and Learn event](#) to raise awareness about the potential health implications of climate change on long-term care facility occupants, along with [a corresponding publication](#).

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Extreme heat cooling centre located at Denman Community Centre in Vancouver, B.C.

OUR STORY

Prepared to care

Planning and design of the new St. Vincent's: Honoria Conway - Heather long-term care home is well underway, and will provide vital residential care for seniors in the region. Providence and the Energy and Environmental Sustainability team are taking proactive measures to incorporate climate resilience strategies into the building's design in order to safeguard future occupants from the potential consequences of our climate reality.

Read more ▶



Conceptual Design of the new St. Vincent's Honoria Conway - Heather long-term care home

What do Providence staff  
 and medical staff have to say  
 about the impact of climate  
 change hazards on their work?

Based on GreenCare Survey<sup>E</sup> results, 361 responses indicated that job duties were impacted by extreme weather events.

The most common impacts on job duties were:

- ▶ Physically unable to get to work
- ▶ Impacts on physical or mental well-being for staff and their families
- ▶ Patient surges from extreme weather events
- ▶ Supply chain disruptions

“  
**We are exploring many innovative opportunities to design the building to withstand the impacts of climate change. This is essential in making sure that the building is a safe and comfortable home.**

– Rick Buksa, Senior Manager of Design & Construction, St. Vincent's: Honoria Conway - Heather



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### 3. Energy and Carbon

**Our goal:** Reduce our carbon footprint by increasing energy efficiency and reducing reliance on fossil fuels.

LEARN MORE

#### Snapshot in numbers

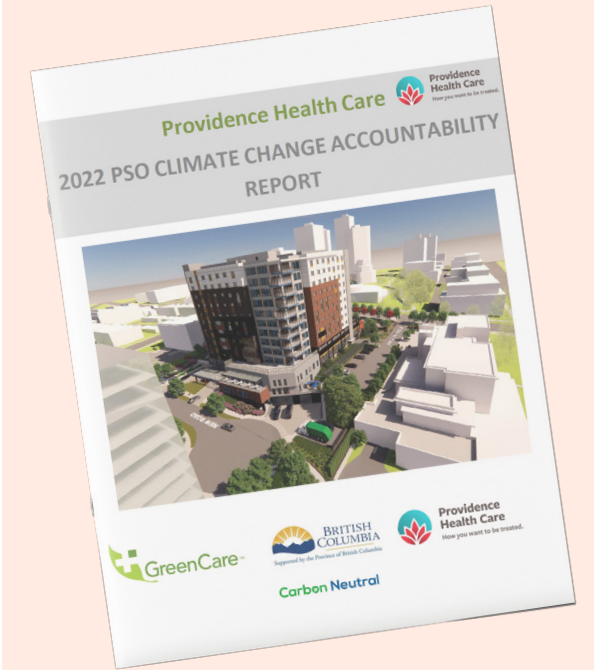
**\$217,000**  
 invested in energy efficiency initiatives  
 from the Green Revolving Fund.

**~\$1 million**  
 invested in carbon reduction projects  
 from Carbon Neutral Capital Program funding.

**\$261,465**  
 in carbon offsets purchased to  
 become carbon neutral.

**~\$1.1 million**  
 in utility incentives received from BC Hydro  
 and FortisBC in fiscal year 2022/2023.

**7**  
 infrastructure projects initiated with 1,038 tCO<sub>2</sub>e  
 of projected carbon emissions reduction,  
 the equivalent of the emissions from 318  
 passenger vehicles.<sup>E</sup>



#### The Providence Climate Change Accountability Report

Each year, along with all public sector organizations, B.C.'s health organizations submit a Climate Change Accountability Report (CCAR) to the Climate Action Secretariat of the provincial government. This is a mandated reporting of greenhouse gas (GHG) emissions and other data, and current and planned actions to reduce GHG emissions.

In 2022, Providence had a 14.4% decrease in GHG-emissions intensity from our building portfolio compared to the base reporting year 2007.

[Download the Providence Climate Change Accountability Report](#)

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Select 2022 actions and achievements

It is important to note that energy and carbon management initiatives work hand in hand through coordinated efforts.

- ▶ Implemented a waste heat recovery project at St. Vincent's: Brock Fahrni that will reduce the site's emissions by about 80%, and introduced renewable natural gas to replace natural gas in the facility, which will also move the site towards net zero emissions.
- ▶ Initiated two emissions reductions projects at St. Paul's Hospital, expected to reduce annual GHG emissions by 1,500 tCO<sub>2</sub>. These include:
  - Installation of two electric boilers to replace steam use from an inefficient natural gas boiler system.
  - Installation of three highly efficient natural gas boilers with low carbon emissions.
- ▶ Completed the investigation phase of BC Hydro's Continuous Optimization program at Mount Saint Joseph Hospital, and the implementation of improvements to the heating, ventilation and cooling (HVAC) control systems are now underway.
- ▶ Initiated two studies at Mount Saint Joseph Hospital:
  - One explores the use of waste water to preheat hot water tanks, which will significantly reduce natural gas consumption.
  - The second designs an energy storage system to help shave the peak demand of electricity, thus reducing energy consumption and cost.

“  
**Electrical capacity is constrained at all of our sites. As we move towards reducing our greenhouse gas emissions, we need extra power capacity in order to install new equipment.**

– Anthony Munster, Executive Director of Projects, Planning & Facilities Management



Left to right: Providence staff, Igor, Rick and Ronnie, on the roof of Mount Saint Joseph Hospital in Vancouver, B.C.

OUR STORY

**Mount Saint Joseph Hospital goes solar**

Having activated 102 solar panels, Mount Saint Joseph Hospital can now sustainably produce enough electricity to power the equivalent of approximately five B.C. houses.<sup>E</sup>

**Read more ▶**



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SPECIAL STORY

## Anesthetic gas is a greenhouse gas

Research shows that eliminating the use of the inhaled anaesthetic gas desflurane would significantly lower carbon dioxide emissions.

In the summer of 2022, UBC Sustainability Scholar Alpamys Issanov worked with the Energy & Environmental Sustainability (EES) team to research the environmental impacts of anesthetic gases at Fraser Health, Providence Health Care, Provincial Health Services Authority and Vancouver Coastal Health. The study looked at the associated greenhouse gas emissions of the three most commonly used volatile anesthetic agents in hospital settings — desflurane, sevoflurane and isoflurane — with a focus on desflurane, which has the highest heat trapping effect and global warming potential.

Alpamys' study found that emissions from anesthetic gases were greater than emissions from fleet vehicles and paper purchasing in three of four health authorities studied. These findings align with other estimates that anesthetic gases contribute five to nine per cent of emissions from acute health-care settings. Data in the study shows that operating rooms in Providence have reduced their use of desflurane by 90% since 2010, which has reduced desflurane contributions to the health organization's carbon footprint by 18 per cent.

Interviews with anesthesiologists supported the statistical analysis, and a recommendation to ban the use of desflurane was one of the key findings. The interviewed anesthesiologists also recommended education, data collection and publications to raise awareness about the environmental impact of anesthetic gases.

B.C. health authorities are required by the *Climate Change Accountability Act* to report emissions from buildings, fleet and paper, but emissions from health-care-significant sources don't have to be reported or monitored. While the role of anesthetic gases in advancing global warming is not well understood or documented in B.C., England's National Health Service has already announced the decommissioning of desflurane by 2024. EES hopes that the data and best practices uncovered in this research will contribute to more understanding and support and empower practitioners and their colleagues to embrace environmentally conscious anesthesia practices.

Moving forward, the study's findings will be brought to the health authority anaesthesiology departments, and the Lower Mainland Pharmacy will support reporting out on anesthetic gas purchasing annually.



Surgical procedure using an artificial lung ventilator

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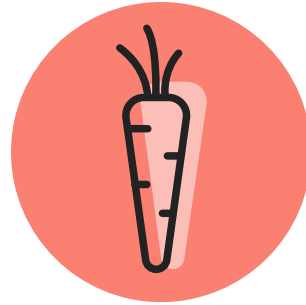
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## 4. Food

**Our goal:** Develop plant-rich, local, culturally relevant and equitable food service to advance food as medicine.

LEARN MORE

### Snapshot in numbers

**~450,000**

patients served/year (acute  
 and long-term care combined).

**~1.35 million**

meals served/year.

**205,690 kg**

of organic waste generated  
 from cafeterias/kitchens.

**~28%**

of food produced or processed within B.C.

### Select 2022 actions and achievements

- ▶ Carried out cross-departmental planning sessions focused on increasing sustainable and traditional food options for staff purchase and on in-patient food trays, as well as staff education.
- ▶ Delivered two GreenCare Lunch and Learn events, featuring food projects by Eileen Wong and Elaine Chu.
- ▶ Engaged Capital Project, Food Services and clinical staff to identify infrastructure requirements for sustainable food in health-care new construction.
- ▶ Awarded a \$5,000 Nourish Innovation Scaling Grant to develop a roadmap for sustainable infrastructure and operations.
- ▶ The Environmental Stewardship team formed a food working group concerned with increasing and encouraging sustainable food choices, local food sourcing, culturally appropriate food choices and food waste reduction. Their approach is to improve food quality and provide patients and residents with more of what they want to eat.



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Laurel Aeberhardt, Clinical Dietitian, St. Paul's Hospital

OUR STORY

**Sustainable sustenance**

In 2022, Laurel Aeberhardt, a seasoned clinical dietitian with a strong focus on sustainability, joined Providence's newly formed Environmental Sustainability Committee to work with food services to increase the plant-based food options on the hospital menu and help to reduce food waste.

**Read more ▶**

The 2022 GreenCare Survey<sup>E</sup>  
 results show that

**58%**

of 337 staff surveyed are “extremely willing”  
 or “very willing” to try sustainable plant-based  
 food at health-care cafeterias.

“  
**We must make drastic  
 changes, including a big  
 shift to eating more plant-  
 based foods [and] less  
 animal protein, and  
 wasting less food.**

– Laurel Aeberhardt, Clinical Dietitian,  
 St. Paul's Hospital



Kitchen staff preparing patient food at  
 Mount Saint Joseph Hospital

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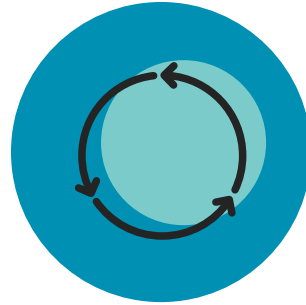
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## 5. Materials

**Our goal:** Choose materials and products that contribute to human and environmental health while avoiding waste and unnecessary chemicals.

LEARN MORE

### Snapshot in numbers

**914**

staff took the [Waste Management module](#) on the Learning Hub.

**2,225**

tonnes of non-hazardous waste were generated, equivalent to 445 elephants.<sup>g</sup>

### Select 2022 actions and achievements

- ▶ Achieved 77% waste diversion at St. Vincent's: Honoria Conway - Heather.
- ▶ Supported a request for proposal for a provincial personal protective equipment recycling program that will provide Providence facilities an opportunity to reduce the amount of waste sent to landfill.
- ▶ Advanced efforts towards environmentally preferable purchasing by:
  - Including environmental questions and criteria in Facilities Management Procurement pre-qualification of construction services.
- Incorporating environmental questions in the mobile MRI and CT scanner procurement process, resulting in a toolkit for action in the Radiological Society of North America's Journal: Radiology ([published 2023](#)).
- Creating and sharing a [Circular Health Care Opportunities Guide](#) intended to provide tangible actions for Providence to avoid and reduce waste.



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Child using hand sanitizer



Hospital waste at Urban Impact recycling depot

OUR STORY

**Sourcing sustainable skin care**

Since 2019, the Energy and Environmental Sustainability team has been collaborating with others to better understand the ecological, environmental and human health implications of hundreds of ingredients found in common skin care products, including cleansers, shampoos and lotions, and to identify the cleanest skin care for B.C. health-care patients.

**Read more ►**

“  
**This is likely the only skin ingredient  
inventory of its kind in Canada.**

– Shannon Handfield, Provincial Professional Practice Wound Ostomy Continence, Vancouver Coastal Health

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## 6. Transportation

**Our goal:** Increase access to and use of transportation modes that reduce negative environmental impacts and benefit human health and wellness.

LEARN MORE

### Snapshot in numbers

**8**

Level 2 electric vehicle (EV) charging stations  
 and 6 Level 1 charging stations.\*

**18,079**

shuttle rides provided to staff in 2022.

**271**

staff on average per month participated in  
 the Providence Transit Incentive program.

**1**

owned site with secure bicycle storage  
 and showering facilities.

\* Level 2 chargers are 240-volt outlets that provide a full charge to an electric vehicle in 6-14 hours. Level 1 chargers are standard 120 volt outlets that provide a full charge to an electric vehicle in 12-20 hours. [\(source\)](#)

### Select 2022 actions and achievements

- ▶ With 42% of staff reporting that they use clean transport to commute,<sup>E</sup> Providence exceeded the 2025 target of 40% of staff using clean transportation.
- ▶ Formed a regional EV steering committee on recommendation from the 2021 EV Baseline and Analysis in order to support regional collaboration for providing EV charging.
- ▶ Initiated the development of a regional active transportation framework, which included a survey to collect cycling infrastructure user perspectives.
- ▶ Hosted GoByBike Celebration Stations at St. Paul's Hospital.



EV charging station



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EV charging station

OUR STORY

**Charged for the future: A new steering committee steps up to answer the region's EV charging needs**

The popularity of EVs is rising quickly among the environmentally and budget conscious. The four Lower Mainland health organizations are collaborating to determine how best to meet charging needs.

**Read more ▶**



EV charging station at Vancouver General Hospital

**What do Providence staff surveyed have to say about EVs?**

Based on GreenCare Survey<sup>E</sup> results:

**10%**

of 328 staff currently own an EV.

**40%**

of 324 staff plan to own an EV in the next five years.

“  
**By addressing the need for EV charging infrastructure, the steering committee is helping to create a healthier, more sustainable future for everyone in the region.**

– Robert Bradley, Co-Chair of the regional steering committee; Regional Director, Energy and Environmental Sustainability team

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## 7. Water

**Our goal:** Minimize water consumption to reduce demand on natural resources and impact on our living environments.

LEARN MORE

### Snapshot in numbers

**5**

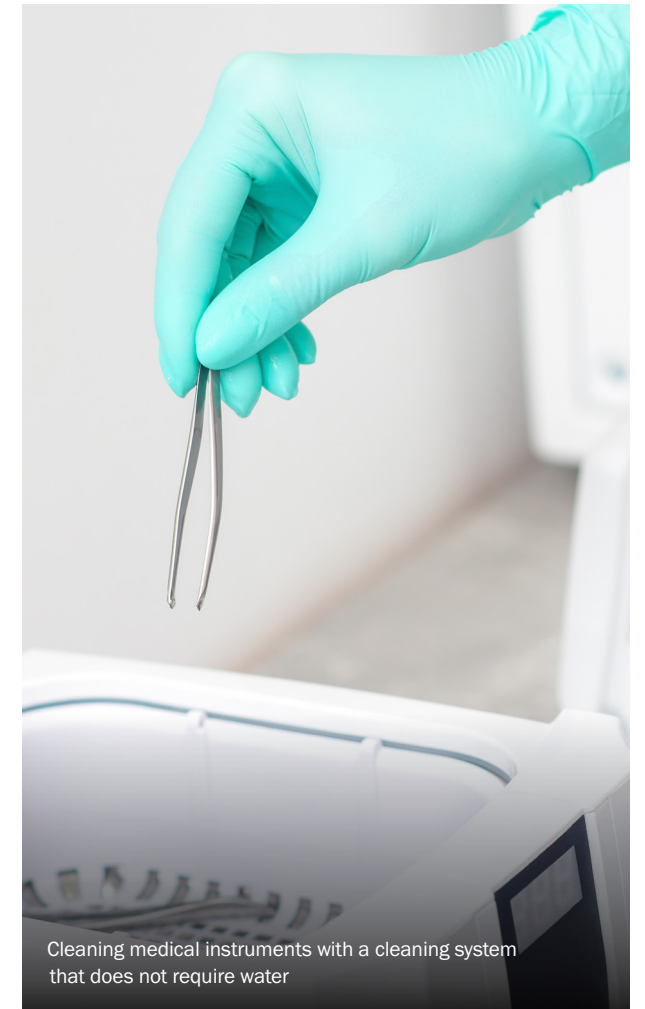
LEED points being targeted for water efficiency credits for the new St. Vincent's: Honoria Conway - Heather long-term care facility design.

**2**

sites working towards a five-year Pollution Prevention Plan.

### Select 2022 actions and achievements

- ▶ Installed ozonators at three facilities that will be studied for their water reduction benefits.
- ▶ Began planning for sterilizer projects at two health-care sites that will reduce water consumption.
- ▶ Initiated investigation into the hot water system at Mount Saint Joseph Hospital to address leakage issues and to optimize performance.
- ▶ Investigated and promoted the use of low-flow devices, where applicable.



Cleaning medical instruments with a cleaning system that does not require water



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Mount Saint Joseph Hospital in Vancouver, B.C.

OUR STORY

**Going electric saves water**

Mount Saint Joseph Hospital and St. Paul's Hospital are undergoing an exciting initiative that is projected to save 5,600 cubic metres of water annually through a project that aims to replace the hospitals' aging steam sterilizers while reducing carbon emissions and water usage.

[Read more ▶](#)



Sterilized surgical tools

“  
**We were excited to learn about the electric sterilizers and their carbon emission benefits. When we also learned about the significant water reduction savings, we were convinced.**

– Anthony Munster, Executive Director of Projects, Planning & Facilities Management

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# 5.0 Writing the Story We Want, Now and in the Future

Thank you for your ongoing support.

Given our climate reality and the urgency of restoring planetary health, it's clear that environmental sustainability is everyone's story. If we are to continue to offer staff, volunteers and patients the very best quality of life and care possible, and support the health and well-being of our families and communities, we must all take responsibility for the environment.

As the many achievements at Providence demonstrate, much is already being done by so many. But as this report also shows, much more remains to be done. Providence invites the whole health-care community to take actions that will restore and regenerate the interdependent health of people, place and planet — now and for future generations.

MAKE A DIFFERENCE.

**Learn more about climate change and sustainability in B.C. health care:**

Subscribe to the [GreenCare Network](#) for updates and newsletters, or visit [bcgreencare.ca](#) for more information.

**Get involved in sustainability activities in your health organization:**

Join the [Green+Leaders](#) community and make a difference in your workplace.

**Transform our processes and health system away from business as usual:**

Access [toolkits](#) and [resources](#) to engage your team in discussion and action toward environmentally sustainable practices for your department.

**Inspire:**

Share your environmental sustainability story [here](#).



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BC Emergency Health Services

BC Housing

BC Hydro

BC Ministry of Energy, Mines and Low  
Carbon Innovation

BC Ministry of Environment and Climate  
Change Strategy

BC Ministry of Health

BC Ministry of Health Capital Services Branch

BC Patient Safety & Quality Council

Business Initiatives & Support Services

## C

Canadian Coalition for Green Health Care

CASCADES Canada

Clinical and non-clinical direct-care staff

Clinical dietitians

Communications

## E

Environment and Climate Change Canada

Environmental Vendor Services

## F

Facilities Maintenance & Operations

Facilities Management Procurement

Finance

First Nations Health Authority

Food Services

FortisBC

## H

Health Canada

Health Emergency Management BC

## I

Indigenous Health

Infection Prevention and Control

Innovation, Planning and Transformation

Integrated Protection Services, Commuter Services

Interior Health

Island Health

## L

Local and regional governments

## N

National Research Council of Canada

Northern Health

Nourish Leadership

## P

Pacific Climate Impacts Consortium

People & Health Informatics

PHSA Supply Chain

Population and Public Health

Projects & Planning teams

Provincial Nursing Skin and Wound Committee

## Q

Quality Improvement

## S

Simon Fraser University

Strategic Planning & Management

## U

University of British Columbia

## W

Workplace Health & Safety



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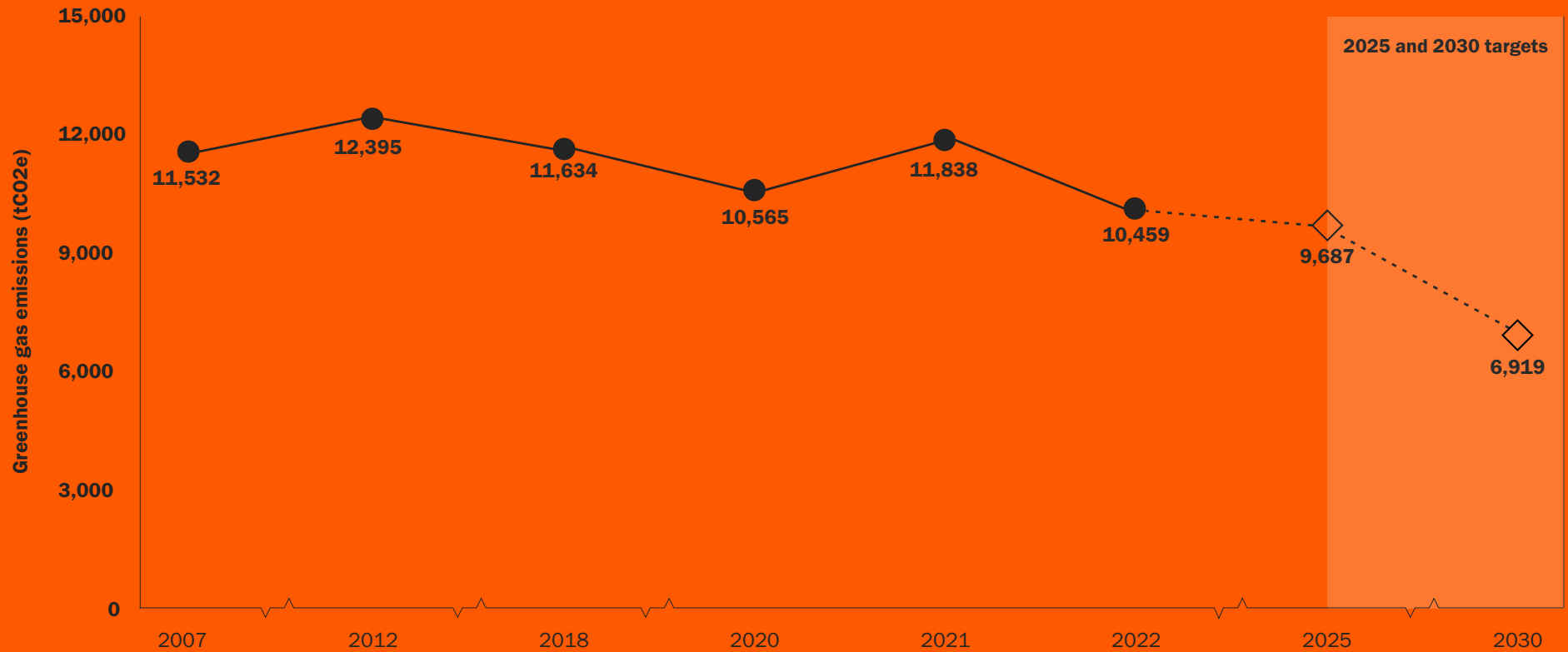
Fraser Health EPAR

Provincial Health  
 Services Authority EPAR

# Greenhouse Gas Emissions (In Scope)

Visit the Energy and Environmental Sustainability (EES) Methodology and Context for Calculating Key Performance Indicators on the GreenCare website.

GHG emissions have **decreased** by  
**9.3%**  
 since 2007.

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# Greenhouse Gas Emissions and Intensity (Buildings Only)

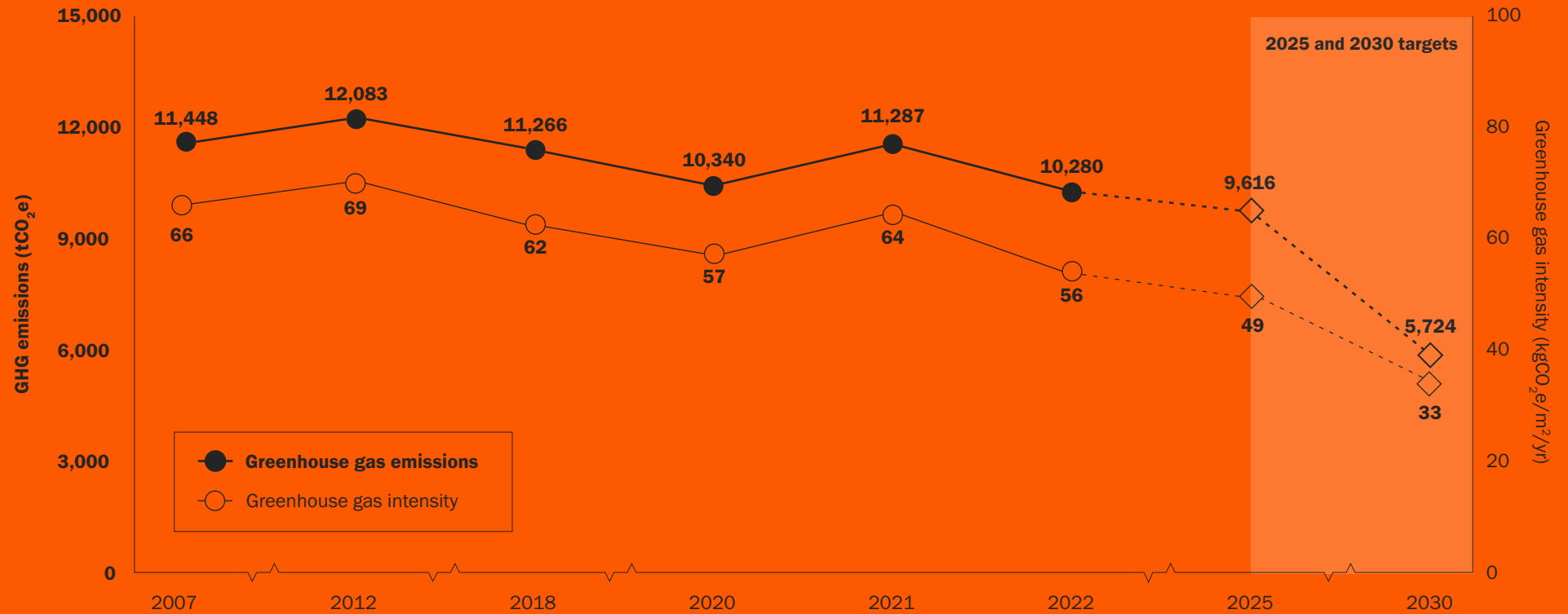
Visit the Energy and Environmental Sustainability (EES) Methodology and Context for Calculating Key Performance Indicators on the GreenCare website.

GHG emissions from buildings have **decreased** by

**10.2%**



since 2007, despite a **4.9% increase** in total usable facility space. This equates to a **14.4% decrease** in GHG-emissions intensity.





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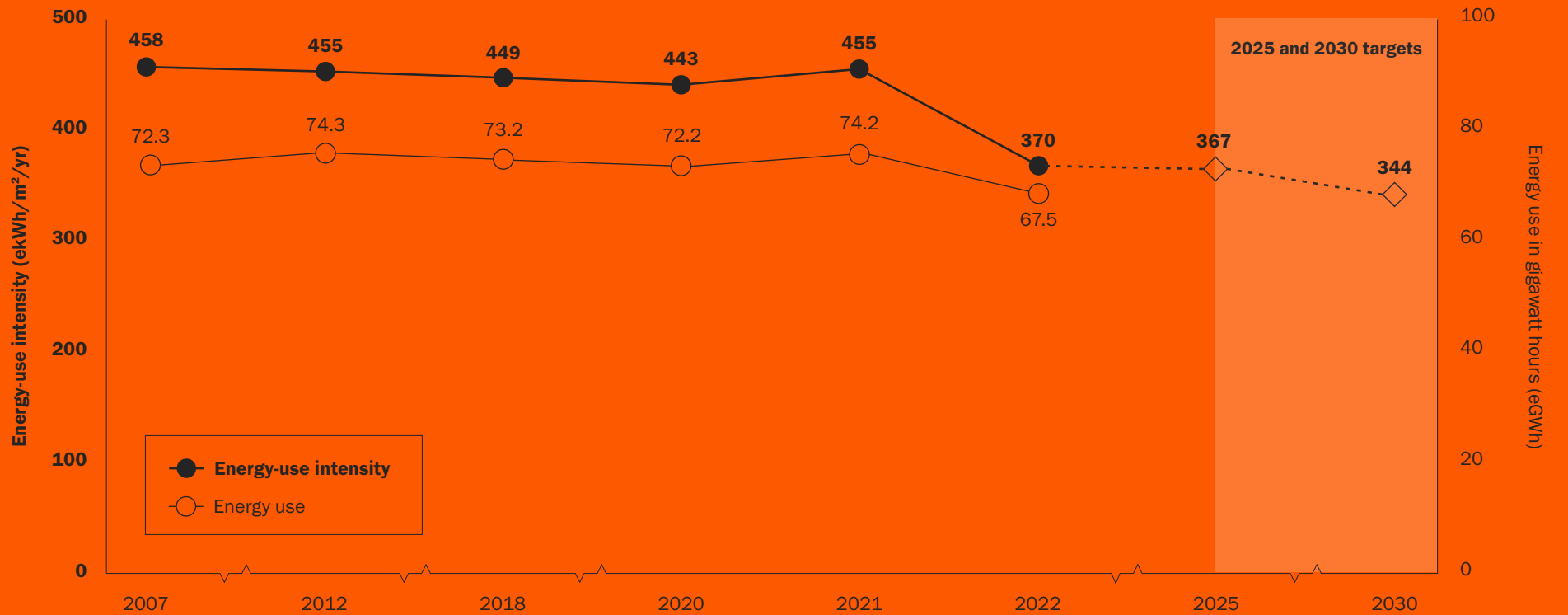
# Energy Use and Intensity

Visit the Energy and Environmental Sustainability (EES) Methodology and Context for Calculating Key Performance Indicators on the GreenCare website.

Energy-use intensity has **decreased** by

**19.3%**

since 2007, and, despite an **increase of 3.4%** in core facility space, our energy use **has also decreased by 6.7%.**



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# Waste-Diversion Rates

Visit the Energy and Environmental Sustainability (EES) Methodology and Context for Calculating Key Performance Indicators on the GreenCare website.

At **acute** care sites,<sup>g</sup> we are

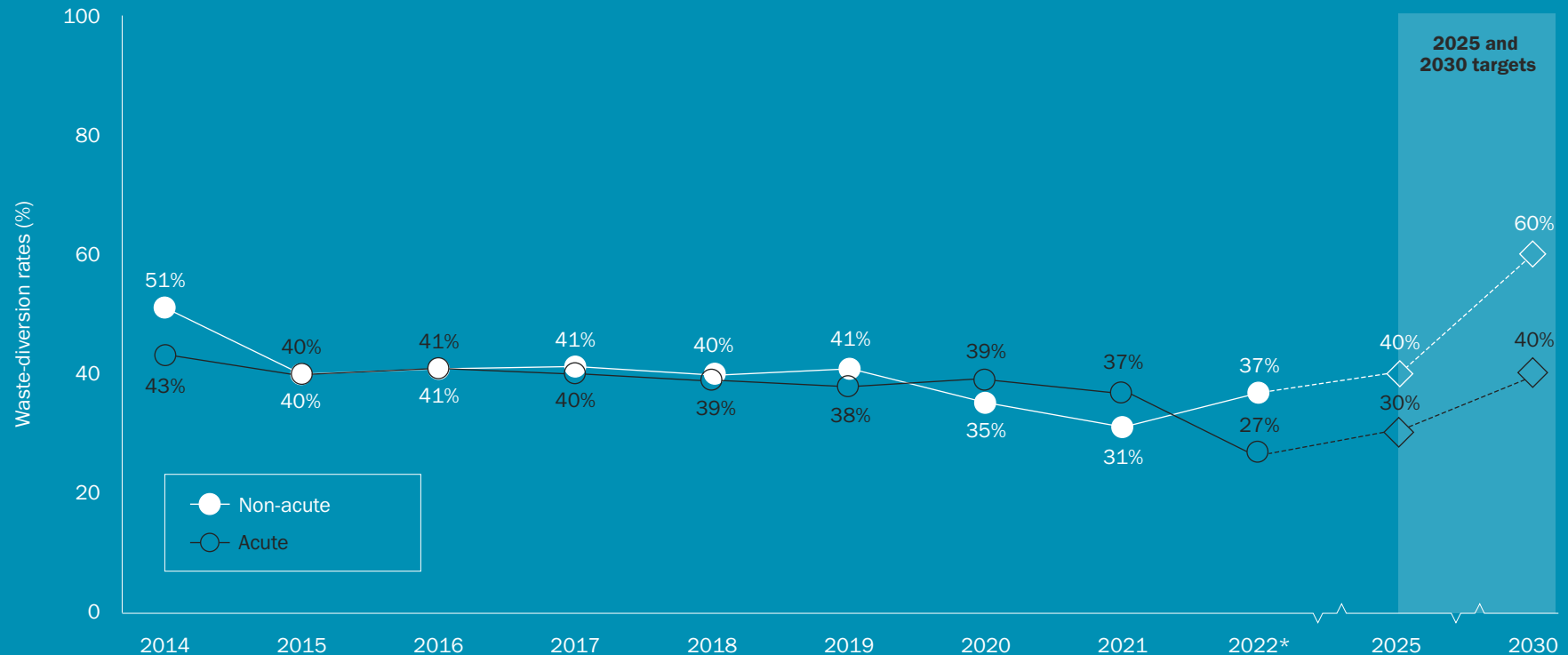
**13%**

away from our **2030 target.**

At **non-acute** sites,<sup>p</sup> we are

**23%**

away from our **2030 target.**



\* In 2022, recycling bins were returned to patient care areas, but recycling diversion rates have not yet reached pre-2020 service levels. Between 2014 and 2019,

acute care waste-diversion rates were stagnant at around 38-40%, with a drop due to COVID-19, and they have not yet recovered.



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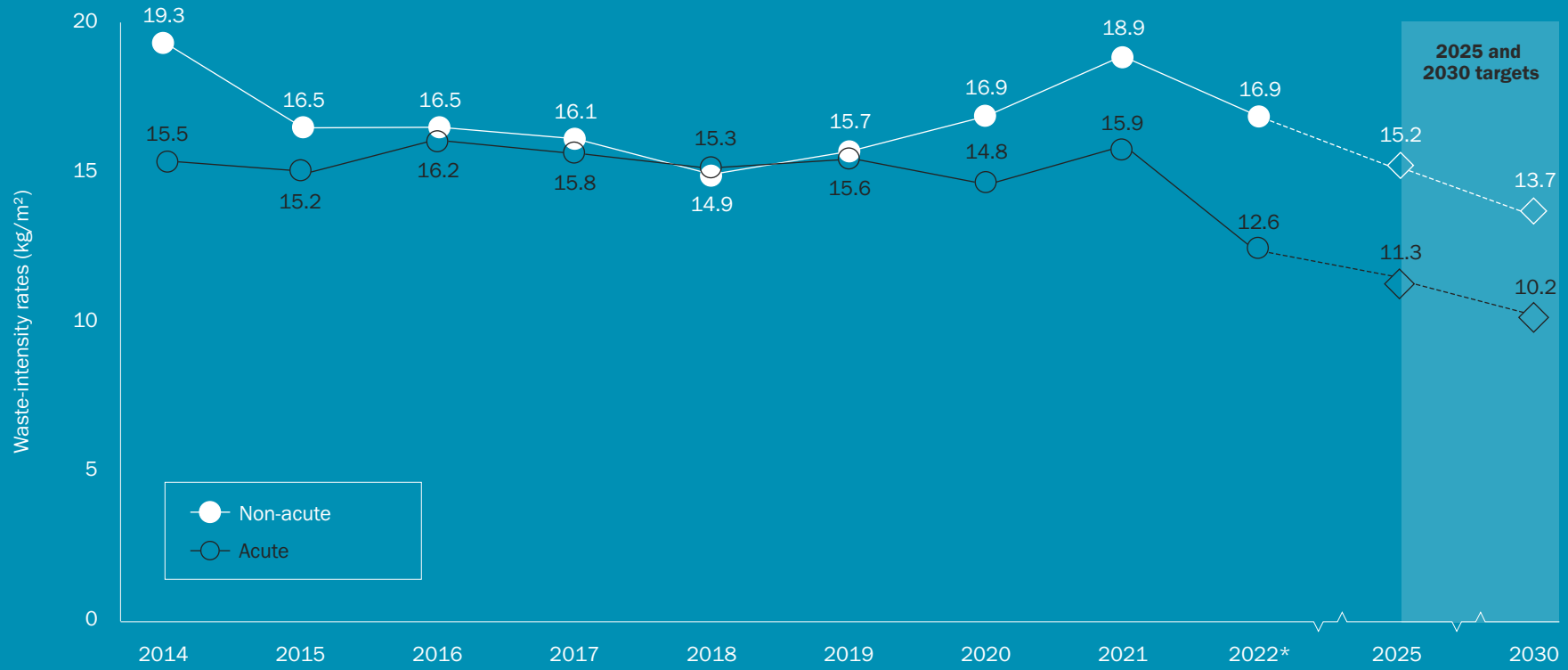
Provincial Health  
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# Waste-Intensity Rates

Visit the Energy and Environmental Sustainability (EES) Methodology and Context for Calculating Key Performance Indicators on the GreenCare website.

Total waste intensity has **decreased** by  
**13%**  
 at **acute** care sites<sup>c</sup> since data collection was initiated in 2014.

Total waste intensity has **increased** by  
**10%**  
 at **non-acute** care sites<sup>d</sup> since data collection was initiated in 2014.



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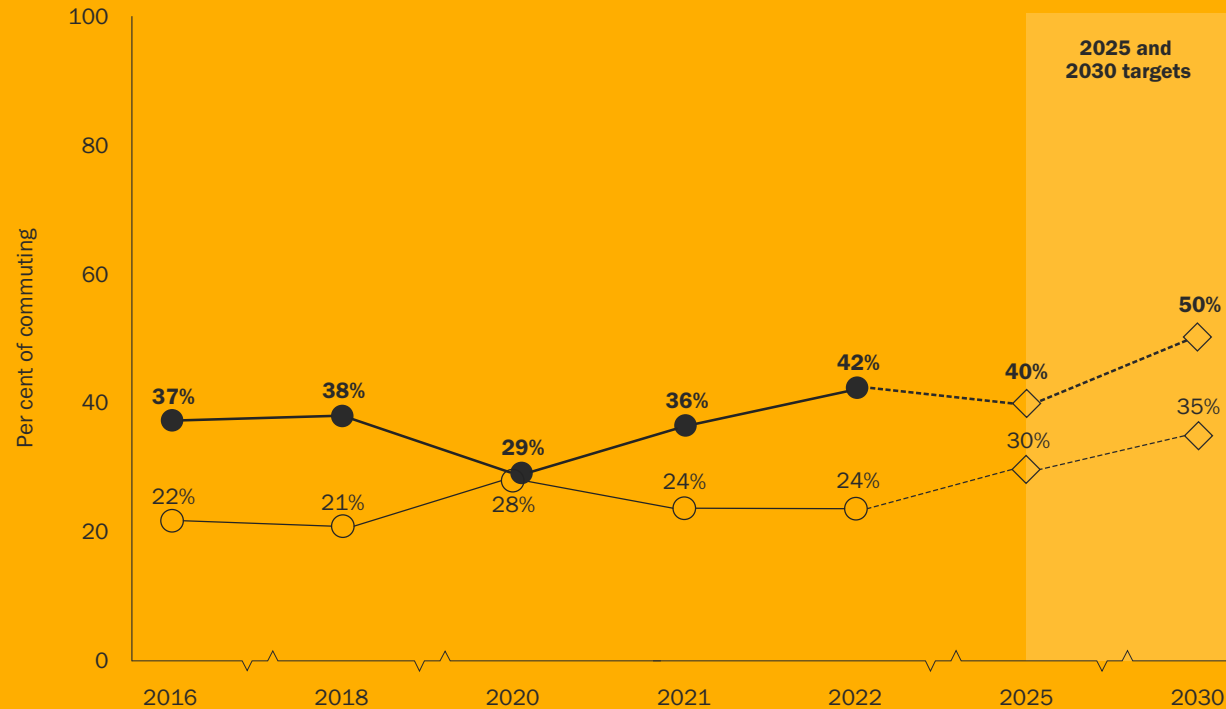
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# Active and Clean Commuting

Data shown in the graph is based on health-care and medical staff self-reported commuting proportions in the annual GreenCare survey.<sup>E</sup>


Visit the [Energy and Environmental Sustainability \(EES\) Methodology and Context for Calculating Key Performance Indicators](#) on the GreenCare website.



Active commuting by Providence staff is

**11%**


away from the **2030 target.**



Clean commuting by Providence staff is

**8%**

away from the **2030 target.**



● Per cent of commuting by clean transportation\*

○ Per cent of commuting by active transportation\*\*

\* Clean transportation refers to hybrid or electric single occupancy, public transit, carsharing, carpools and hospital shuttles.

\*\* Active transportation refers to bicycles (regular/non-electric, pedal-assist/electric, bike share) and walking/rolling (e.g. wheelchairs, seated electric scooters).



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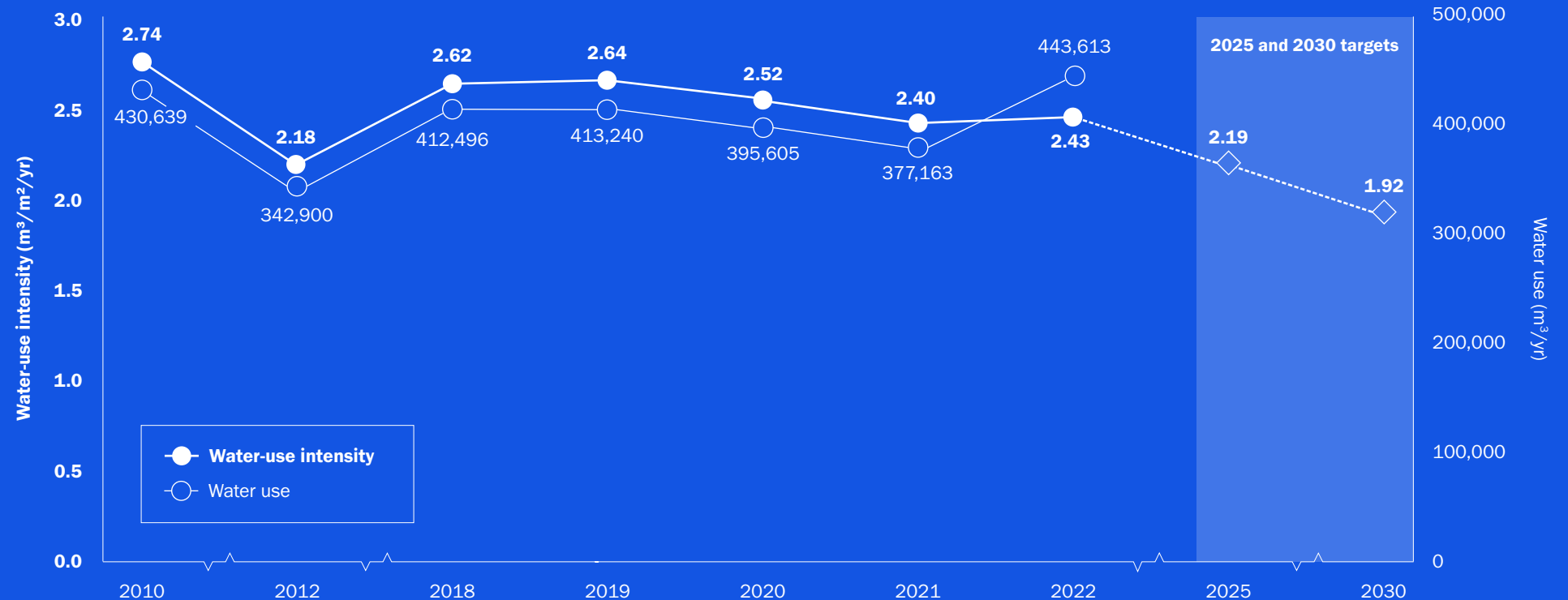
# Water Use and Intensity

Visit the Energy and Environmental Sustainability (EES) Methodology and Context for Calculating Key Performance Indicators on the GreenCare website.

Water-use intensity has **decreased** by

**11.3%**

since 2010, and, despite a slight **increase** in core facility space,\* water use has only **increased by 3%**.



\* The facility space used to calculate the building water performance intensity is different to energy and carbon facility space due to the difference between the baseline years 2010 and 2007, respectively.

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- A ARCHIBUS and Providence Real Estate Department
- B Full-time equivalent staff includes all designated groups reported in the Health Sector Compensation Information System (HSCIS). This includes physicians (doctors on staff), executive/excluded, and non-union and bargaining unit employees. It excludes affiliate employers and BC Emergency Health Services (BCEHS) employees. (Source: Health Employers Association of BC)
- C Providence acute care sites are:
- Mount Saint Joseph Hospital
  - St. Paul's Hospital
- D Providence non-acute sites are:
- Holy Family Hospital
  - St. Vincent's: Brock Fahrni
  - St. Vincent's: Honoria Conway - Heather
  - St. Vincent's: Langara
  - Youville Residence
- E The GreenCare survey is an annual survey (biennial prior to 2020) for all staff working within Fraser Health, Providence Health Care, Provincial Health Services Authority and Vancouver Coastal Health. The survey collects information on staff perspectives, familiarity with, and actions related to planetary health, climate change and environmental sustainability efforts in areas such as transportation and food. The data is used to measure trends and progress, and develop programs that will meet staff needs.
- F Natural Resources Canada - Office of Energy Efficiency - Demand Policy and Analysis Division. Greenhouse gas equivalencies calculator [Internet]. Government of Canada; 2017 [cited 2023 June 8]. Available from: <https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/calculator/ghg-calculator.cfm#results>
- G Based on the assumption that an adult elephant weighs 5,000 kg.

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**Providence  
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How you want to be treated.