



# 2021 Climate Change Accountability Report



Interior Health



# 2021 PSO\* Climate Change Accountability Report

This Climate Change Accountability Report for January 1, 2021 to December 31, 2021 summarizes Interior Health's emissions profile, the total offsets to reach carbon neutrality, the actions taken in 2021 to reduce greenhouse gas (GHG) emissions, and the plans to continue reducing emissions in 2022 and beyond.

By June 30, 2022 Interior Health's Climate Change Accountability Report will be posted to the [interiorhealth.ca](https://interiorhealth.ca) website.



Photo credit: Pexels; Anna Shvets

*\*Public sector organization*

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## Land Acknowledgement

Interior Health would like to recognize and acknowledge the traditional, ancestral, and unceded territory of the seven Interior Region First Nations where we live, learn, collaborate and work together. It is with humility that we continue to strengthen our relationships with First Nations, Métis and Inuit peoples of the interior.

# A Message from our President and CEO and our Executive Sponsor

A lighter footprint for a brighter tomorrow.

Over the last few years, British Columbians have been challenged in many ways we've never imagined. The toxic drug crisis, COVID-19 pandemic and effects of climate change, including the heat dome, wildfires and flooding, have impacted many of us. As additional changes are expected to the world's climate, our health and well-being may also be impacted. This may include worsening air quality, changes in the spread of infectious diseases, threats to food and water quality and quantity, and effects on our mental health. This interdependence between health and the environment compels us to continue our work to reduce our environmental footprint toward a low-carbon future, beneficial for the environment and the health and well-being of all British Columbians.

This report provides a snapshot of some of our actions in 2021, along with our plans to prepare for more frequent impacts from climate change. There are many things we can do now to prepare for the risks and adapt to the effects of climate change. Along with our commitment to caring for our patients, we are committed to making investments to reduce our carbon footprint. We are doing so because we know these investments will make us stronger and more resilient to climate changes in the future.

We will continue to strive for meaningful environmental improvements across our operations. In 2022 and beyond, we will identify more avenues to be environmentally responsible and sustainable in our operations and will continue to implement strategies and tactics to realize these commitments.



*S. Brown*

Susan Brown

President and  
Chief Executive  
Officer

*D. Lommer*

Donna Lommer

Vice-President, Clinical and  
Corporate Services

# About IH

Interior Health (IH) serves a population of approximately 834,000 in the southern Interior of B.C., across seven regional hospital districts that includes 60 municipalities, 54 First Nation communities, and 15 Métis Chartered communities. The service area covers more than 215,000 square kilometres, and includes 2 tertiary hospitals, 4 regional hospitals, 16 community hospitals, 7 urgent and primary care centres, 22 health care centres, and 41 IH-owned long-term care sites. IH has more than 21,000 employees, more than 1,900 physicians and more than 4,800 volunteers providing health-care services to the people living in the Interior.

## 2022 QUICK FACTS



- 60 MUNICIPALITIES
- 54 FIRST NATION COMMUNITIES
- 15 MÉTIS CHARTERED COMMUNITIES
- 7 REGIONAL HOSPITAL DISTRICTS
- 7 DIVISIONS OF FAMILY PRACTICE
- 7 PRIMARY CARE NETWORKS

SERVING OVER  
**834,000**  
INDIVIDUALS ACROSS  
THE SOUTHERN  
INTERIOR OF B.C.

WITH A  
BUDGET OF  
**\$2.9B**

AND  
COVERING OVER  
**215,000**  
SQ KILOMETRES



**27,800+**  
ACTIVE MENTAL HEALTH  
AND SUBSTANCE USE CLIENTS  
served in community settings  
each year

**35,500+**  
HOME HEALTH CLIENTS  
served in community settings  
each year

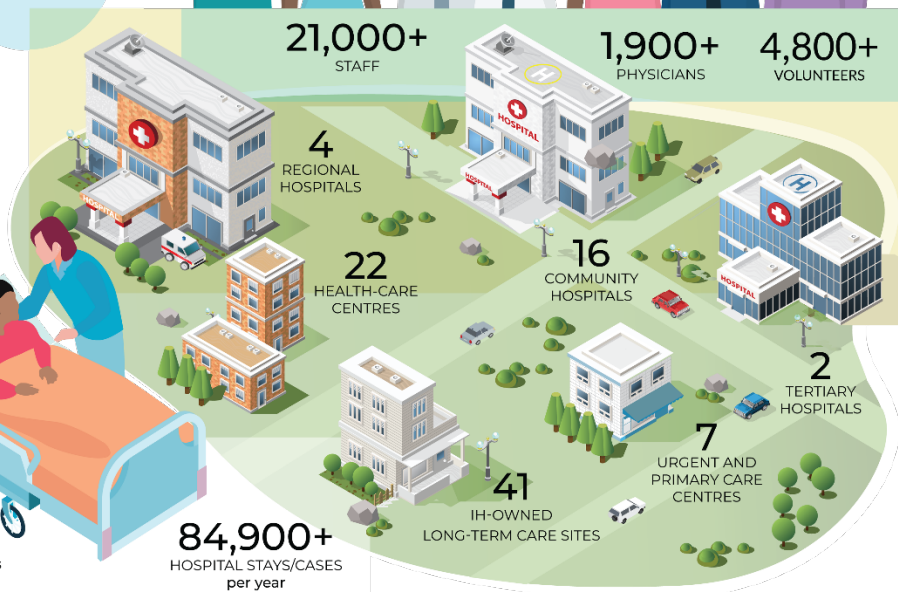
**10,900+**  
LONG-TERM CARE AND  
ASSISTED LIVING RESIDENTS  
in IH-owned and partner sites  
served per year

**84,900+**  
HOSPITAL STAYS/CASES  
per year

**21,000+**  
STAFF

**1,900+**  
PHYSICIANS

**4,800+**  
VOLUNTEERS



# Overview

Each year since 2010, IH has achieved carbon neutral operations required through carbon neutral government program requirements, legislated under the *Climate Change Accountability Act*<sup>1</sup> (CCAA). This program requires all provincial public sector organizations (PSOs) to follow a process to achieve carbon neutrality, which includes:

1. **Measuring** greenhouse gas (GHG) emissions from buildings, vehicles and paper use.
2. **Reducing** emissions as much as possible by conserving electricity and fossil fuels.
3. **Offsetting** remaining emissions by purchasing an equivalent amount of high-quality, made-in-B.C. carbon offsets.
4. **Reporting** annually on progress through the PSO Climate Change Accountability Report (PSO CCAR), formerly the Carbon Neutral Action Report (CNAR).
5. **Verifying** data and emissions.

IH aligns our strategies and targets for reducing greenhouse gas (GHG) emissions and moving towards a low carbon economy with the Government of BC's CleanBC<sup>2</sup> climate action plan. The provincial CleanBC plan sets a path and includes a wide range of actions to reduce emissions, build a cleaner economy and prepare for the impacts of climate change.

Continuing into 2021, the COVID-19 pandemic continued to have an impact on GHG emissions both positively and negatively. As well, the last year saw extremes in weather, such as the heat dome, followed by wildfires, and flooding and landslides just months later. Despite the numerous challenges and changes precipitated by the pandemic and extreme weather events, IH met its goal of operating as a carbon neutral public sector organization. During this time, some IH employees worked remotely, reducing GHG emissions from commuting, while the heat dome, wildfires and flooding negatively affected our energy use.

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<sup>1</sup> For more information on the Climate Change Accountability Act, refer to [https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/07042\\_01](https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/07042_01)

<sup>2</sup> For more information on CleanBC, refer to [www.cleanbc.gov.bc.ca](http://www.cleanbc.gov.bc.ca)

We are proud of our efforts to:

- maximize the efficiency of electricity and heating consumption;
- build awareness amongst staff to support better waste management practices and reduce consumption;
- increase the digitization of documents and processes;
- influence our Supply Chain partners to consider environmental weighting in procurement decisions;
- further electrification of our fleet vehicles; and
- embed the concept of climate as a risk in some of our processes and planning.

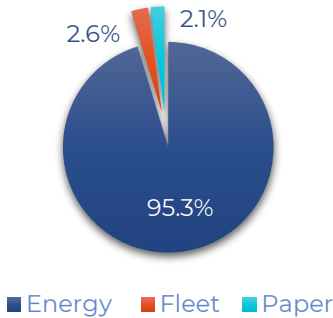
On the horizon, we will shift our focus from COVID-19 to look for opportunities to extend the positive benefits realized during the pandemic and ensure these key learnings are integrated across our organization. The pandemic highlighted positive effects from flexible work arrangements and reduced emissions related to commuting. We now look at our office space differently. More opportunities for digitization and less printing were embraced. Travel limitations helped us learn new skills to manage in a virtual world. Increased use of supplies, such as personal protective equipment (PPE) and its waste footprint helped us explore options for recycling and reprocessing of certain items into non-medical products. These learnings, along with our plans to reduce our GHG emissions, will take us into 2022 and beyond.



# Emissions Overview

Interior Health tracks and reports on emissions from the energy used in our buildings, the fuel used by our fleet and our paper use. These emissions have been quantified using the BC Provincial Government’s Clean Government Reporting Tool (CGRT).

## Sources of greenhouse gas emissions

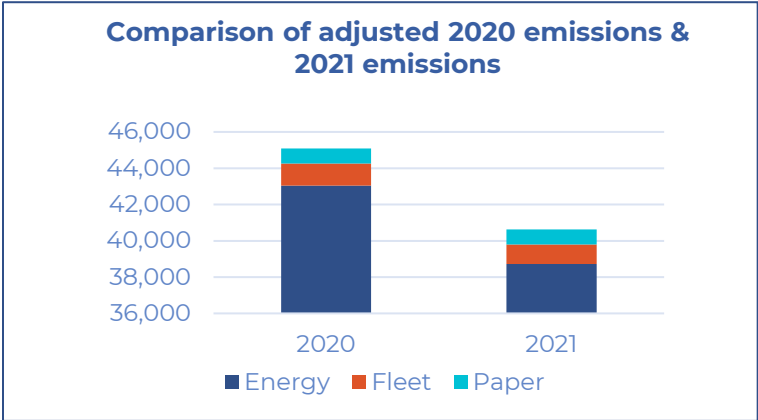


Energy emissions account for close to 95.3 per cent; fleet emissions account for 2.6 per cent; paper emissions account for 2.1 per cent.

## Emissions compared to previous year

Compared to the emissions in 2020<sup>3</sup>, GHG emissions from our:

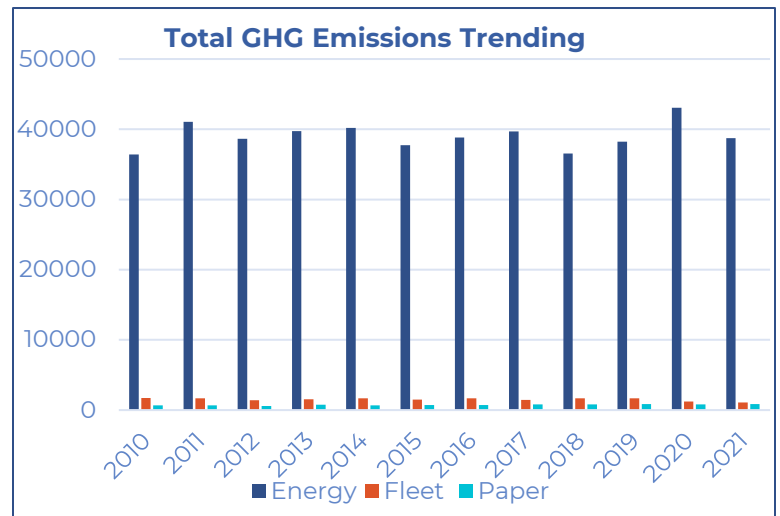
- Buildings decreased 10% (4,313 tCO<sub>2</sub>e)
- Fleet decreased 13% (159 tCO<sub>2</sub>e)
- Paper increased 2.2% (18 tCO<sub>2</sub>e)



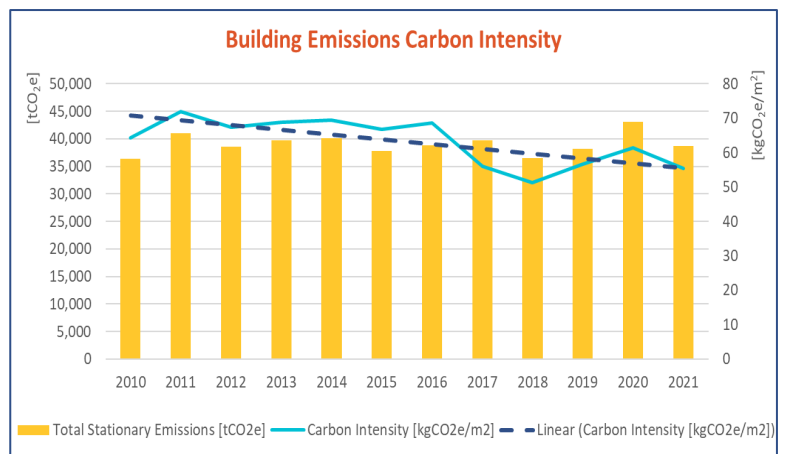
<sup>3</sup> Note: emissions adjustments are made throughout the next years reporting cycle. This is due to changes in data, which includes emission factor changes and additional data received by IH.

## GHG emissions trending

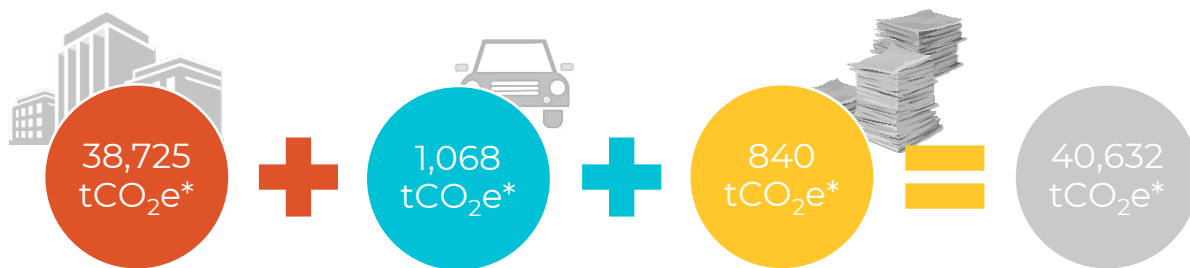
For all sources (buildings, fleet and paper), Interior Health's total GHG emissions have increased since our baseline year, 2010 (Chart 3: Total GHG emissions trending, 2010-2021). This is due mostly to floor area increases. In 2010, our floor area was 565,580 metres squared (m<sup>2</sup>), whereas by 2021, our floor area increased to 699,332 m<sup>2</sup>. With a 24% increase in floor space, more energy is consumed resulting in increased GHG emissions.



Carbon intensity of our buildings is a measurement to illustrate the changes in our energy use from an efficiency perspective, rather than only overall consumption. It considers the carbon emissions as a factor of overall floor space of our facilities. This also reflects the measures taken to change our energy sources to lower carbon. The results are showing a reduction trend, representing our efforts to date, even with a larger floor area.



## 2021 Emission Totals



\* tonnes of carbon dioxide equivalent

## Emissions from our buildings (stationary emissions)

The emissions from our buildings account for 95.3 per cent of our total emissions. The 2020 building emissions were adjusted to 43,038 tCO<sub>2</sub>e (from 38,563 tCO<sub>2</sub>e). The adjustment is due to an increase in the electricity grid emissions factor used by the provincial Ministry of Environment for emissions quantification.<sup>4</sup>



The 2021 building emissions are 38,725 tCO<sub>2</sub>e. This equates to a 10 per cent decrease in our building emissions compared to the adjusted emissions from 2020.

Attributing emissions reductions and increases is challenging due to the number of contributing factors. For example, after a project is implemented, it takes a full cycle to see results. The majority of our decreases in emissions in 2021 resulted from the projects implemented in the 2020 calendar year. These included boiler replacements, LED lighting upgrades and recommissioning projects. Therefore, in 2022, we will see the results from projects implemented in the 2021 calendar year, highlighted in this report. As well, although our energy management actions curb energy use and GHG emissions year over year, as noted, these efforts are offset by growth in floor area, requiring more energy use. Changes to weather can also affect our energy use and emissions. In 2021, colder outside air temperatures required more energy use; in 2021, there was a 3 per cent increase in heating degree-days<sup>5</sup>. Additionally, the heat dome between June 25 and July 1 with record-breaking heat increased our cooling needs, thereby adding to our energy consumption during that period.

We are pleased with our yearly progress on emissions and energy reductions in our buildings portfolio. Our Strategic Energy Management Plan (SEMP) has identified pathways and required investments to align with provincial government targets to reduce emissions from our buildings by 50 per cent by 2030.

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<sup>4</sup> The emissions factors changed for electricity. Public sector organizations are not expected to pay additional carbon offsets payments for emissions resulting from changes by the Ministry of Environment on emissions factors.

<sup>5</sup> Heating degree days is a measurement designed to quantify the demand for energy needed to heat a building.

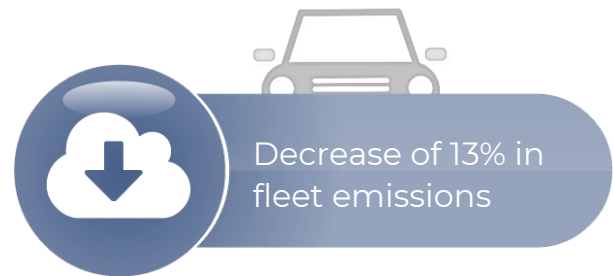
## Emissions from our fleet

The emissions from our fleets account for 2.6 per cent of our total emissions.

The 2020 fleet emissions were adjusted to 1,227 tCO<sub>2</sub>e (from 1,068 tCO<sub>2</sub>e). This adjustment is due to additional data received from our vendors after the reporting period closed on April 30, 2020.

The 2021 fleet emissions are 1,068 tCO<sub>2</sub>e. This equates to a 13 per cent decrease in fleet emissions compared to the adjusted emissions from 2020.

We have attributed a decrease in fleet emissions in 2021 to a reduction in travel during the COVID-19 pandemic. The emissions from reduced travel would be even less; however, COVID-19 also imposed restrictions on the number of occupants in our vehicles. This meant there were limited opportunities for carpooling in our fleet vehicles, requiring additional vehicles to be used if the occupancy threshold was reached.

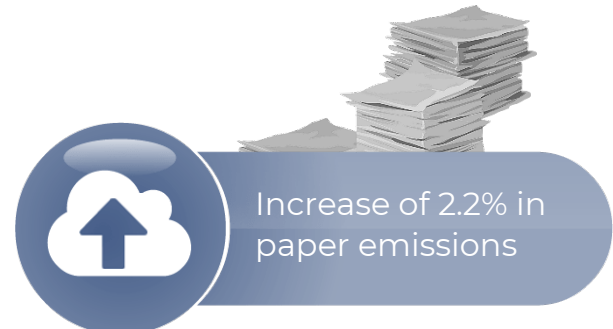


## Emissions from our paper use

The emissions from our paper use accounts for 2.1 per cent of our total emissions. The 2020 paper emissions were adjusted to 822 tCO<sub>2</sub>e (from 690 tCO<sub>2</sub>e). This adjustment is due to changes resulting from a data assurance exercise after the reporting period closed on April 30, 2020.

The 2021 paper emissions are 840 tCO<sub>2</sub>e. This equates to a 2.2 per cent increase in paper emissions compared to the adjusted emissions from 2020.

Paper use was expected to decline in 2021, due to many employees working remotely with less printing. However, there has also been an increase in outpatient Laboratory Services activity which relies heavily on receipt of requisitions being faxed. Interior Health will continue to look for opportunities to reduce paper, with a focus on digitizing processes with electronic workflows, digital information and virtual care.



# Our Actions to Reduce In-scope Emissions

## Managing our energy to reduce GHG emissions



“Effective energy management targeting GHG emissions reduction and other co-benefits is core to our strategic priorities for Interior Health.

- Trevor Fourmeaux, Director, Plant Services



Our health-care buildings, the systems within and health-care operations are inherently energy and carbon intensive. Emissions reductions from the energy used in our buildings is a priority for Interior Health. Energy management is key to saving energy in an organization, with a goal to concurrently reduce GHG emissions. Controlling and reducing energy consumption is important because it enables IH to:

- reduce costs – this is becoming increasingly important as energy rates increase; updated, more efficient building systems cost less in energy consumption and also lower maintenance costs
- reduce carbon emissions – and the environmental damage they cause, as well as the cost-related implications of carbon taxes and carbon offset payments
- reduce risks – the more energy we consume, the greater the risk that energy price increases, affecting our energy budgets; updated building systems also reduce risk of failure, which impacts our operations

Our buildings are of various ages, provide different services and have unique systems, so not all solutions will garner the same results for each site. With known energy and carbon intensity in our buildings, we have made a number of investments in the last 10 years on innovative projects, such as:

- **Lake water cooling** at Kelowna General Hospital and Shuswap Lake Hospital in Salmon Arm
- **Geo-exchange** systems at Shuswap Lake Hospital in Salmon Arm and UBC Okanagan Clinical Academic Campus at the Kelowna General Hospital

- **Biomass boilers** at Lillooet Hospital & Health Centre and Golden & District Hospital
- **Solar thermal heating systems** at Penticton Regional Hospital and Summerland Health Centre
- **Solar walls** for preheating outdoor air for ventilation at Cariboo Memorial Hospital in Williams Lake and East Kootenay Regional Hospital in Cranbrook
- **LED lighting** retrofits across a majority of our facilities
- **Energy conservation measures** at East Kootenay Regional Hospital in Cranbrook
- **Heat pumps**, both electric and gas, at Dr. Helmcken Memorial Hospital in Clearwater, Kootenay Lake Hospital in Nelson, and Summerland Health Centre
- Exhaust air **heat recovery systems** and economizers
- **Heat recovery chillers** and free cooling sequences
- **Demand-control ventilation** to avoid over-ventilating a space when unoccupied
- Advanced building automation systems including **fault detection and diagnostics** for energy management

## Informed decision-making

Into 2021, health-care operations continued to be affected by the COVID-19 pandemic. In the case of energy management, the pandemic presented challenges with both supply chain lags and staffing to manage and implement energy conservation projects. With project implementation delays, the energy management team pivoted from project implementation to in-depth analysis and strategic planning to inform future investments and decision-making, captured in the updated Strategic Energy Management Plan<sup>6</sup> (SEMP).

The SEMP outlines pathways to align emissions reductions to the public sector buildings emissions target (to reduce emissions 50 per cent by 2030, from 2010 levels) and includes sustainability co-benefits.

*Strategic energy management* is a holistic approach to energy-efficiency that enables organizations like ours to achieve long-term and persistent savings. This planning helps to identify various options and solutions for energy consumption, by developing a roadmap to reduce the energy use and costs, and to minimize environmental effects within our buildings.

<sup>6</sup> For more information, refer to Interior Health's web site at [www.interiorhealth.ca](http://www.interiorhealth.ca)

## **Targeting energy savings opportunities through energy studies**

In 2021, energy studies were completed to assist with project prioritization, investment decisions and 'shovel-ready' project implementation. Energy studies to identify energy conservation measures (ECM's) were completed at:

- Kelowna General Hospital – electrification measures
- Vernon Jubilee Hospital and Royal Inland Hospital (Kamloops) – heat recovery chillers
- Brookhaven Care Centre (West Kelowna) and Bastion Place (Salmon Arm) – chiller replacements

## **Building our knowledge on energy savings opportunities**

To increase energy conservation knowledge and to create a community of leaders who are passionate about energy improvements, Interior Health's Plant Services staff broadened their knowledge by attending educational webinars to improve their knowledge of:

- Heating, Ventilation, and Air Conditioning (HVAC) Filtration
- Optimizing HVAC for Space-Use Changes
- Low Cost Energy Conservation Measures
- Variable Frequency Drives for motor/pump/fan speed control
- HVAC Optimization
- Digital Building Automation Systems

## **New building design – integrating energy efficiency, carbon reductions and climate risk analysis**

For new construction projects, our capital planning team engages with many disciplines across our organization, including our energy management and environmental sustainability teams. Our energy management team accesses incentive funding from our utility partners and reviews planning designs to ensure we implement options for reducing energy use and GHG emissions. Our environmental sustainability team works alongside the capital planning and consultant teams to identify climate risks and adaption actions in our new buildings.

## New construction projects

Facility	Approximate Area Range	Project Phase
Royal Inland Hospital – Gagliardi Tower	25,000-27,000 sq. metres	Complete
Cariboo Memorial Hospital Redevelopment	7,500-9,500 sq. metres	Detailed Design
Cottonwoods Long Term Care Centre	21,000-22,000 sq. metres	Schematic Design
Dr. F.W. Green Memorial Long Term Care Home	13,000-15,000 sq. metres	Schematic Design
Vernon Jubilee Hospital Inpatient Psychiatric Unit	4,000-5,000 sq. metres	Planning
Kelowna General Hospital MRI Replacement and Addition	1,000-1,500 sq. metres	Planning

## Partnerships for performance

Managing energy in our owned facilities involves many internal stakeholders, including our building operators in our Plant Services and P3 Operations teams, project managers who facilitate the implementation of energy conservation projects and our energy team, to name a few. With over 230 sites, there are a variety of partnership models utilized, which include:

### P3 Energy performance contracts

Our hospitals in Kamloops, Kelowna, Penticton and Vernon are operated through a public-private-partnership (P3) arrangement. With those partnerships, the P3 project company warrants that new facilities will be designed and constructed so that the regulated energy consumption per year will not exceed the energy target. Any additions to the hospitals include an energy guarantee throughout the term of the P3 agreement. Our IH energy team works closely with our P3 providers to ensure energy is optimized throughout our facilities.





## Energy performance contracts

At the East Kootenay Regional Hospital in Cranbrook, Interior Health is working with an external building systems energy specialist, through an Energy Performance Contract (EPC), to implement a number of energy conservation measures (ECMs) within the hospital. In total, nine ECMs are estimated to deliver annual energy savings of 19 per cent, and a 23 per cent reduction in annual GHG emissions. The capital cost for the project is \$2 million and is anticipated to result in a simple payback of fifteen (15) years based on projected energy cost savings. The majority of the upgrades involved replacement of building systems at end of useful service life, so these changes were leveraging the timing of required renewal.



## Operating projects

Many effective measures are smaller scale maintenance improvement projects with budgets less than \$100,000 and considered as operating projects. These projects offer a short payback period on the required investment and a low GHG emissions abatement cost (\$ per tonne carbon dioxide equivalent emissions abbreviated tCO<sub>2</sub>e). These projects focus on a few types of low-cost measures, such as LED lighting retrofits or re-commissioning of heating, ventilation and air conditioning (HVAC) systems, and can be repeated across multiple facilities with proven success.

### Our energy management operating project highlights included:

**Recommissioning and continuous optimization** is a process designed to help building owners tune-up their buildings and:

- find new ways to save energy without investing in expensive new equipment
- learn how to maintain those energy savings over time
- improve internal energy reporting

In 2021, we recommissioned a number of buildings and are projecting the following results.

## 2021 Operating projects and expected results

Facility	Project Cost (\$)	Annual Savings (\$)	Annual GHG Reduction (tCO <sub>2</sub> e) <sup>7</sup>	Natural Gas Savings (Gigajoules)	Electricity Savings (Gigajoules)	Electricity Savings (kWh)
100 Mile District General Hospital	\$49,379	\$17,753	28.9	471	482	133,964
Bastion Place	\$17,159	\$18,103	57.3	1,092	253	70,414
East Kootenay Regional Hospital	\$13,085	\$7,231	32.2	640	24	6,600
Gillis House	\$33,058	\$10,361	44	859	107	29,662
Nicola Valley Hospital	\$19,302	\$15,183	39.8	733	290	80,607
South Okanagan General Hospital	\$26,424	\$2,958	19.2	381	20	5,561
Totals	\$158,407	\$71,589	221.4	4,176	1176	326,808



The optimization projects in 2021 will reduce emissions comparable to the same emissions as **47 gasoline-powered vehicles driven for one year.**

**Hydronic Additive** helps save energy and GHG emissions for building heating systems. Hydronic additives increase the thermal contact that improves the heat transfer rate and efficiency, resulting in less fuel consumed to maintain set temperatures.

The implementation of the hydronic additive has an initial cost and then minor annual costs to maintain. Even with these costs factored in, the benefits still result in an annual cost savings, in addition to the GHG emission reductions. With different equipment, the benefits may vary between sites. A preliminary review is completed to determine the most viable applications.

<sup>7</sup> Emissions factors are based on 2020 emissions factors; it is unknown at time of reporting if 2021 emissions factors will be adjusted in the future.

We implemented the hydronic additive solution in various buildings, with the following expected results:

*2021 Hydronic additive projects and expected results*

Facility	Project Cost (\$)	Annual Savings (\$)	Annual GHG Reduction (tCO2e) <sup>8</sup>	Natural Gas Savings (Gigajoules)	Electricity Savings (Gigajoules)	Electricity Savings (kWh)
Columbia View Lodge	\$7,819	\$2,125	10.9	218	N/A	N/A
South Similkameen Health Centre	\$4,419	\$2,671	13.7	274	N/A	N/A
Swan Valley Lodge	\$3,059	\$5,770	29.5	592	N/A	N/A
Totals	\$7,478	\$10,566	54.1	1,084	0	0



For a small investment, we implemented the hydronic additive at a number of sites to reduce emissions, comparable to the same emissions as **11 gasoline-powered vehicles driven for one year.**

<sup>8</sup> Emissions factors are based on 2020 emissions factors; it is unknown at time of reporting if 2021 emissions factors will be adjusted in the future..

The re-commissioning of HVAC systems at Vernon Jubilee Hospital was completed with funding support from Natural Resources Canada. The following table displays the expected results from this re-commissioning project.

*2021 HVAC Re-commissioning project and expected results*

Facility	Project Cost (\$)	Annual Savings (\$)	Annual GHG Reduction (tCO <sub>2</sub> e) <sup>9</sup>	Natural Gas Savings (Gigajoules)	Electricity Savings (Gigajoules)	Electricity Savings (kWh)
Vernon Jubilee Hospital	\$70,500	\$28,300	71.4	1,293	621	172,534



This project will result in reducing emissions comparable to the same emissions from driving **15 gasoline-powered vehicles for one year.**

## Capital Projects

The majority of energy savings and GHG emissions reductions are the result of larger scale capital projects with budgets greater than \$100,000. These projects have a longer payback period on the invested capital, and a higher GHG abatement cost (\$ per tCO<sub>2</sub>e). These projects involve deeper retrofits and may include the implementation of new innovative technologies, which when successful, could be deployed at other facilities. These projects often replace existing equipment or systems that are at the end of their useful service life.

Due to a number of factors in 2021, including supply chain and staffing, our larger energy management capital projects have been delayed, including:

- Dr. Helmcken Memorial Hospital & Health Centre – Renewable Energy Upgrade
- Kootenay Boundary Regional Hospital – Steam Plant Retrofits
- Summerland Memorial Health Centre – High Efficiency Boiler Replacements and Interconnection
- Creston Valley Hospital – Heating boiler replacement

<sup>9</sup> Emissions factors are based on 2020 emissions factors; it is unknown at time of reporting if 2021 emissions factors will be adjusted in the future.

## Managing our fleet to reduce GHG emissions

Following a pilot of electric vehicles in 2020, IH completed an Electric Vehicle (EV) Strategy in 2021. This strategy assessed our fleet vehicles, the infrastructure required to charge vehicles, as well as identifying priority public and staff parking locations for future electric charging infrastructure.

In alignment with the provincial government cleanBC targets, including the reduction of fleet emissions, Interior Health's priority is to electrify our fleet vehicles and install required EV charging infrastructure. Concurrently, opportunities to install EV-infrastructure in public and staff parking areas will be sought, utilizing rebates where they are available to allow for greater installation rates.

For our existing electric fleet vehicles, we have a combination of five level two dual port charging stations and one level one charging station to charge up three battery electric vehicles, two plug-in electric vehicles and six hybrid electric vehicles. Our clean fleet plan has identified the budgets and infrastructure required to align with provincial targets to reduce our fleet emissions by 40 per cent by 2030. By 2026, our goal is to have 30 per cent of our fleet transitioned to battery-powered and plug-in hybrid electric vehicles, which would translate to 85 EVs in our fleet pool.

As post-COVID-19 pandemic restrictions ease, IH will continue encouraging virtual meetings and carpooling.



Photo credit: Pexels - Kindle Media

## EV-charging infrastructure – public and staff parking

Beyond IH's fleet, we have 21 Level One (standard plug-in) and 27 Level Two (quick charge) charging stations at Kelowna General Hospital, Vernon Jubilee Hospital, Penticton Regional Hospital and Royal Inland Hospital (Kamloops). We will continue to look for opportunities to upgrade the level one charging stations and identify incentive funding for EV-charging infrastructure for public and staff parking.

## Managing our paper to reduce GHG emissions

Given that paper equates to two per cent of our emissions, the majority of our efforts to reduce paper use come from workflow changes and digitization. Below is a snapshot of initiatives underway that will help reduce paper and associated emissions:

**Advancing Care Electronically (ACE)** – is shifting Royal Inland Hospital (RIH) away from paper-based patient records to an electronic system, making RIH increasingly digital, and virtually paperless. In June 2021, RIH moved beyond paper-based charting to become Interior Health’s digital hospital, leading the way for more sites to come. The paperless electronic system has many co-benefits, such as improved patient safety and care by enabling immediate access to patient records, reducing delays and errors.

**Exploring workflows to reduce paper use** – our Lab Services at Kelowna General Hospital is moving forward with workflow changes to lab requisitions by disabling automatic printing functionality and instead scanning documents electronically to reduce paper use.

**New technical solutions** – such as technology to support the ability to send faxes from IH-desktops, eliminating the need to use paper in a stand-alone fax machine.

**New processes and technology** – currently, some employees complete paper flow sheets to clock in/clock out before and after their shifts. In the future, through our workforce management (WFM) system, staff will use their employee number to clock in and out, and electronic time capture (ETC) clocks will be installed at sites throughout Interior Health. No more paper flow sheets.

# Beyond In-scope Emissions Reductions

Beyond our efforts to reduce emissions from our energy use, our fleet fuel use and our paper use, IH approaches environmental sustainability opportunities across a broader perspective of our operations.

## The big picture on sustainability

Making improvements that have a co-benefit to the environment start with analysis. In 2021, a number of initiatives were explored, which include:

**Reducing GHG emissions associated with anesthetic gas use** – we have explored a switchover to less GHG-emitting anesthetic gases and waste anesthetic gas recovery technology. With implementation at the Gagliardi Tower at Royal Inland Hospital (Kamloops), Interior Health will be the first BC-based health authority to implement technology to collect waste anesthetic gasses for re-processing. These gasses will be re-processed by a Health Canada licensed facility and available as generic anesthetic gasses, lowering supply concerns.

**Reducing biomedical waste volumes** – we analyzed our biomedical waste volumes to identify areas for improvement, to reduce sterilization and incineration. From this, we will develop more education to ensure non-biomedical waste does not enter this waste stream unnecessarily.

**Limiting food waste** – Support Services, responsible for food services across Interior Health, has assessed food volumes and consumption to ensure less food waste. In addition, food waste from some of our kitchens and cafeterias is now being recycled through an organics recycling program with a goal to roll out organics recycling across our major acute sites to include Penticton Regional Hospital, Kelowna General Hospital, Vernon Jubilee Hospital, Kootenay Boundary Regional Hospital (Trail), East Kootenay Regional Hospital (Cranbrook) and Cottonwoods Care Centre (Kelowna).

**Efficient meal delivery systems –**

Support Services implemented a new meal delivery system to replace aging and inefficient equipment and processes. Not only will the new system require less stations, the heating cycle will run for less time per day. Compared to the older system, there were significant co-benefits to our energy use.



New meal delivery system – Burlodge System

*Comparison of new versus old meal delivery system*

System	Old System	New System	Results
Daily Energy Consumed	7, 110 kilowatt-hours (kWh)	490 kilowatt-hours (kWh)	93% reduction
Annual Energy Consumed	2,595,150 kWh	178,850 kWh	93% reduction
Annual Energy Cost (at \$0.09/kWh)	\$233,563	\$16,096	93% savings
Annual GHG Emissions (tCO2e)	104 tCO2e	7 tCO2e	Decrease by 97 tCO2e; similar to taking 20 cars off our roads



## Sustainability engagement: program re-design

The pandemic provided a unique opportunity to revamp our engagement program and re-design strategies for engaging staff on initiatives to 'green' our operations and learn more about climate risk and resilience. The Sustainability Champion and Sustainability Advocates program went through a significant shift, setting up the framework for site-specific sustainability committees, to influence culture change and to work through projects having a positive co-benefit to the environment. Initially started at Kelowna General Hospital, this model is now being rolled out across more sites including Invermere and District Health Centre. Some of the site-specific projects underway include: X-ray film recycling, operating room temperature setbacks and cardboard box re-use. When successful, these projects will be shared and replicated at other sites.

## Building our knowledge and learning from our staff

More than 200 survey responses and over 800 poll submissions provided staff insight on how they wish to be engaged around environmental sustainability initiatives at IH. We also heard from over 417 staff on their experiences with extreme weather, the impacts to our patients and the work they do. This information was sought to help us better understand how we prepare for resilience to more extreme climate in the future.

### We learned:

- More than 50% of our staff consider themselves leaders or change-makers in environmental sustainability
- More than 90% think its important to engage employees around environmental sustainability at work

**Extreme Weather Events Survey**  
Interior Health Results | 2020

**Highlights**

- 81% Interior Health respondents (888 total across all health authorities)
- 80% responded that it is important for them to work for an organization that cares about climate change
- 67% of respondents reported that they are able to continue providing quality care to patients during extreme weather events
- 50% indicated they were productive during an extreme weather event
- 30% identified that extreme weather negatively affected their ability to focus

**Overview**

The Extreme Weather Events Survey targeted clinicians to better understand their perceptions and opinions on extreme weather impacts on staff, patients and health care delivery. Results from the survey are intended to inform and strengthen Interior Health's preparedness and adaptation measures to extreme weather from climate change.

Interior Health's Sustainability portfolio collaborated with the Environmental Sustainability team from the BC regional health authorities to develop this joint survey. The survey at Interior Health focused on Facilities Management and Operations (FMO) in 2018 and 2019 for their experiences with extreme weather.

**Promotion**

The online survey launched on October 21, 2020 and closed on December 15, 2020. The survey was sent via email to managers representing a variety of sites and positions and promoted through "In the Loop" articles and a poll.

**Climate Impacts on Human Health**

The impacts of climate change include warming temperatures, changes in precipitation, increase in the frequency or intensity of some extreme weather events. These impacts could affect a person's health by altering the food we eat, the water we drink, the air we breathe, and the weather we experience. Research will use based on where the person lives, how sensitive they are to health threats, how much they are exposed to climate change impacts, and how well they and their community are able to adapt to change. The severity of these health risks will depend on the ability of the health system to consider adaptation measures in order to address or prepare for these changes.

**Survey Respondents**

In which area do you spend most of your time working?

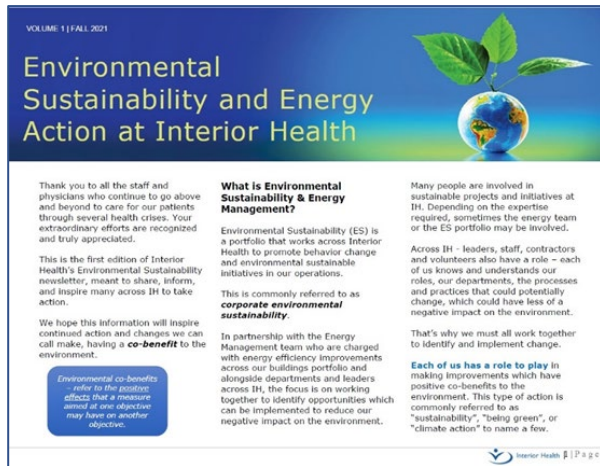
Area	Percentage
Work and Community Care	~45%
Other (not working)	~15%
Home Health and Community Care	~10%
Emergency Services	~10%
Public Health	~10%
Health Services	~10%
Other (not working)	~10%

Map 2022: Extreme Weather Events Survey Interior Health Survey Results | 1



## Building climate literacy

To advance culture change, and build more knowledge across Interior Health, a number of lunch and learn sessions have been offered, as well as the first volume of the Environmental Sustainability and Energy Action newsletter was launched in November 2021.



## PPE recycling pilot – Kootenay Boundary Regional Hospital

The pandemic generated large amounts of personal protective equipment (PPE) waste. Most disposable PPE used in the health-care system is made from petroleum-based polymers, such as polypropylene, which are traditionally difficult to recycle and have a very low value on the open market. However, mid-way through 2021, IH collaborated with the Ministry of Health and Providence Health Care in the lower mainland to pilot PPE recycling. Launched in November 2021 at Kootenay Boundary Regional Hospital, a three-month pilot recovered over 37 per cent of the masks issued to that hospital, estimated to weigh close to 137 kg.

During the three-month pilot, the number of masks recovered weigh the same as a female grizzly



Terry Ferguson, Kootenay Boundary Regional Hospital

# Climate Risk and Resilience

Along with our commitment to mitigate greenhouse gas emission and a low carbon economy, we recognize climate action also includes climate risk and resilience efforts. This is because climate change has the potential to impact human health, health-care infrastructure and health-care operations. With that in mind, Interior Health is concurrently preparing for a changing climate. This will ensure we understand the climate we are likely to experience in the future, and enable us to create proactive plans that take advantage of opportunities and prepare for impacts. To be well-prepared, we are assessing, identifying vulnerabilities and working to build resilience.

## IH's journey toward climate resilience

Beginning in 2018, Interior Health began work to further the concept of climate resilience across our organization. In 2021, highlights included:

- Community vulnerability to climate hazards maps: created for the IH-region, these maps were completed to show how certain hazards (high summer temperatures, wildfire smoke, flooding and low winter temperatures) do not affect all people equally. The information will help planning and preparedness of effective supports at the community-level.
- The Heat Alert and Response System has broadened the approach and is incorporating Aboriginal knowledge by working with the Xeni Gwet'in and T'it'q'et First Nations and the Métis Nation to plan and prepare for community health impacts from extreme heat.

### *Climate resilience through the years*



# Plans to Continue Reducing GHG Emissions in 2022 and Beyond

Interior Health will build on the work undertaken in 2021 to review and improve our sustainability practices. In 2022, we will complete an IH-wide climate action strategy. To develop this strategy, we will engage staff and stakeholders on our strategic framework. This climate action strategy will help shape our sustainability and GHG reduction and climate resilience activities in the coming years.

## Energy Conservation

Energy conservation measures (ECMs) can deliver energy cost savings, emissions reductions, infrastructure replacements or upgrades, and other co-benefits. With a limited budget for energy management improvements, careful planning and decision making ensures the best long-term value for investment dollars.

Our plans are two-tiered: firstly, our energy management program will utilize the funding that is available to achieve the best possible results. Decisions on the ECMs implemented result from a prioritization exercise and are based on long-term, triple-bottom line impacts (economy, society and environment) to ensure sustainable health care.

Secondly, our plan is to remain flexible, with the ability to adapt to an increase in funding. Should there be an increase in funding, we have identified an optimized pathway, which will help us to achieve provincial targets and:

- increase capacity within the Energy Management team
- complete a sufficient number of energy studies well in advance of project implementation, in preparation for the increased investments necessary to meet provincial targets for GHG emissions reduction,
- fast-track implementation for three years of opportunities down to one (until 2030),
- improve project performance, working closely with internal stakeholders, and
- continuously improve our program through bi-annual Energy Management Assessments.

As well, we will continue to follow best practices, such as:

- coordinating with Capital Planning to participate in provincial incentive programs for energy efficient design and construction
- working with the Ministry of Health to apply Carbon Neutral Capital Program funding to the incremental cost of Energy Conservation Measures installed through Capital Projects
- building on partnerships with BC Hydro, Fortis BC, and other external stakeholders to take advantage of incentive and rebate programs that support energy performance within Plant Services and P3 Operations
- focusing on energy conservation and efficiency to reduce our exposure to rising utility costs

*Capital projects (planned)*

Facility	Project Type	Project Cost (\$)	Annual Energy Savings (\$)	Annual GHG Reduction (tCO <sub>2</sub> e) <sup>10</sup>	Natural Gas Savings (Gigajoules)	Electricity Savings (Gigajoules)	Electricity Savings (kWh)
Creston Valley Hospital	Boiler Replacement	\$1,000,000	\$14,904	85	1,704	0	0
Dr. Helmcken Hospital	Geo-Exchange Heat Pump	\$1,995,240	\$69,291	170	2,895	-845	-234,600
Kootenay Boundary Regional Hospital	Steam Plant Upgrades	\$2,100,000	\$86,852	446	8,941	346	96,010
Summerland Health Centre	Boiler Replacement	\$1,000,000	\$22,829	130	2,610	0	0
Totals		\$6,095,240	\$193,876	831	16,150	-499	-138,590

<sup>10</sup> Emissions factors are based on 2020 emissions factors; it is unknown at time of reporting if 2021 emissions factors will be adjusted in the future.



The planned projects should result in reducing emissions comparable to the same emissions from driving **179 gasoline-powered vehicles for one year.**

Into 2022, IH will continue to reduce energy intensity and look for more opportunities for electrification.

## **Fleet**

Interior Health will further our EV-implementation plan by prioritizing funding required to meet our goals. We will start procuring new vehicles and equipment that are zero-emissions where feasible solutions exist. In addition, we will examine the lessons learned from the COVID-19 pandemic around the impact of virtual meetings and remote work on our greenhouse gas emissions and evaluate how this might change our policies moving forward.

## **Paper**

We will look for another opportunity to investigate sourcing and using a higher percentage of our paper with more recycled content. As well, we will continue to explore the digitization of our processes so we can transition away from printed documents and the use of paper. Through our newsletter and other IH-communication platforms, we will continue to promote paperless meetings.

## **Climate Risk and Resilience**

Interior Health will continue to lead the development of a provincial heat alert and response system (HARS). This will ensure our communities are better prepared against the health impacts from heat exposure. As well, our new building designs will continue to use the Resilient Building Design Guidelines to future-proof our buildings to address a warming climate across BC. We will also align our climate risk and resilience initiatives with requirements and direction from the Ministries of Environment and Health.

## **Other Actions**

In 2022 and beyond, Interior Health will continue sustainability, climate engagement and outreach programs to implement social and behaviour change actions. This will ensure staff, visitors and volunteers are aware of, and actively contributing to, IH's climate action goals.

