



# 2022 Climate Change Accountability Report



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## INTRODUCTORY NOTE

This Climate Change Accountability Report (CCAR) is Island Health's thirteenth annual report on our previous year's greenhouse gas emissions. The CCAR details the steps Island Health has taken to achieve carbon neutrality and the organization's emissions reduction efforts. Since our first iteration of carbon reporting in 2010, much has changed, including Governments, executives, emissions targets, and even the health authority's name. Island Health's commitment to reduce greenhouse gas emissions and to adapt to the changing climate too has changed; it has become more emboldened and engrained within our operations, and is a prominent component of our Strategic Framework.

This commitment is embedded in the organization's Strategic Energy Management Plan, however, achieving the target will take more than strategic planning. Externally, strong partnerships and funding support comes from the Ministry of Health by way of policies and capital funding, the Climate Action Secretariat which provides direction, education, awareness and research, and our utility partners BC Hydro and Fortis BC who support our programs, staff, help to advance infrastructure development, rates, and provisions of low carbon energy. Internally, the increased capacity towards ongoing optimization of operations - led by Facilities Management - are supported by employees, many of whom are constantly adopting new behaviours, processes, and innovations to mitigate climate change. Support for and the ongoing commitment to Island Health's efforts are reflected in recent mandate letters, capital policy changes, and project funding increases.

The evolution of Island Health's reporting practices and focus on reducing carbon emissions began in 2008 as energy and emissions reduction projects were included within the existing capital and operational boundaries of the health authority. In 2010, Island Health began tracking and reporting greenhouse gas emissions. By 2015, the Ministry of Health introduced the Carbon Neutral Capital Program (CNCP) to provide health authorities access to minor capital funding for projects focused on reducing emissions. Since the CNCP started, Island Health has invested over \$12M in emissions reduction projects for existing facilities. However, reaching the 2030 emissions reduction target will require approximately \$10-16M in annual capital upgrades for the next nine years. These investments will need to be made in systems and equipment retrofits within existing facilities, as well as additional investments to electrify the fleet.

Health care demands have continued to rise. This pressure has resulted in an increase of facility space in our portfolio, much of which requires a high degree of energy and carbon intensity. Three years of the COVID-19 pandemic has also brought significant changes to how Island Health delivers care. Some of those changes, in the short-term, have favourably impacted greenhouse gas emissions, including remote work, the use of virtual care, and programs such as Hospital at Home. As we have emerged from the pandemic there will be lessons learned and innovations that will improve the delivery of care and possibly reduce environmental impacts. As we return to a semblance of operating as we previously did before the pandemic, we are seeing increases in fleet and paper use.

Climate change continues to be an increasing threat to the health and wellbeing of those within our facilities and throughout the communities in which we provide health care services. Island Health has already experienced the impacts of climate change in a multitude of ways, and has identified the need to take measures to reduce risk. Recent policies from the Ministry of Health require health care organizations to consider future climate projections in all new capital expenditures. This aligns with Island Health's efforts and is supported by the completion of the Climate Resilience Guidelines for BC Health Facility Planning Design. The guidelines were developed through a collaborative of the province's health care organizations, designers, and many other stakeholders. Island Health also contributes to municipalities'

and regional districts' development of climate change strategies. It is clear that preparing for climate change cannot happen in isolation. It requires the combined efforts of many stakeholders within Island Health and beyond. Together we can advance climate change action and resiliency, while continuing to provide excellent care for everyone, everywhere, every time.



A handwritten signature in blue ink that reads "Kim Kerrone". The signature is fluid and cursive.

**Kim Kerrone**  
Vice President  
Support Services & Chief Financial Officer  
Island Health

## LAND ACKNOWLEDGEMENT

We respectfully acknowledge the Coast Salish, Nuu-chah-nulth, and Kwakwaka'wakw First Nations on whose traditional lands we are thankful to work, live, and enjoy. We recognize the importance of the spiritual, emotional, physical, and mental connection First Nations' people have to the land.

The lands and ecosystems within these territories are being adversely impacted by climate change and by the way resources are used and disposed of. Island Health commits to implementing solutions to reduce its impact on the environment, this report provides insights into the work being done to address this.



# 1. OVERVIEW

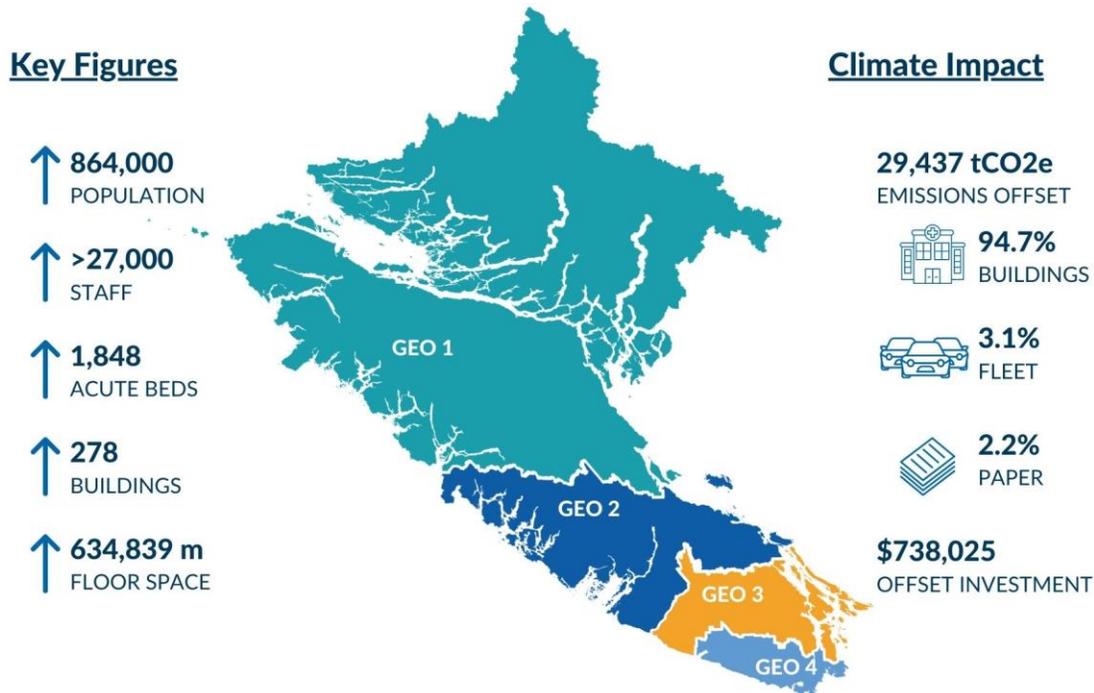
This Climate Change Accountability Report for the period January 1, 2022 to December 31, 2022 summarizes Island Health’s greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions taken in 2022 to reduce our GHG emissions, and plans to further reduce emissions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

By June 30, 2023, Island Health’s final 2022 Climate Change Accountability Report will be posted to [www.islandhealth.ca](http://www.islandhealth.ca).

## About Island Health

Approximately 27,000 health care professionals, technicians and support staff at Island Health provide health care to more than 864,000 people on Vancouver Island; the islands in the Salish Sea and Johnstone Strait; and the mainland communities north of Powell River and south of Rivers Inlet.

Figure 1: Island Health 2022 Numbers at a Glance



Since first achieving carbon neutrality in 2010, the health authority’s total floor space has increased by 21.8%. Growth of the organization is a challenge when trying to reduce emissions to meet the provincial emissions reduction targets. While progress on gross emission reductions lags behind its targets, Island Health continues to emit fewer emissions per square metre, pointing to an effective carbon management program.

## Commitment

The *Climate Change Accountability Act*, amended in 2019, introduced requirements for public sector organizations (PSOs) to minimize adverse environmental effects and to manage risks arising from a changing climate. The *Act* also requires PSOs to be carbon neutral and achieve prescribed targets.

The *CleanBC Report (2018)*, and *CleanBC Roadmap to 2030 (2021)* set out and refined a pathway towards achieving the prescribed emissions reduction targets. Relative to Island Health, PSO buildings have a target of a 50% reduction in greenhouse gas emissions from 2010 levels by 2030 and emissions from public sector vehicles will strive for a 40% reduction by the same year. Island health has committed to reducing fleet and paper emissions by 50%.

Island Health has affirmed its commitment to being a positive contributor to environmental sustainability and the climate change response. The health authority strives to advance environmental stewardship best practices in its buildings, services, processes, and culture.

Accordingly, new infrastructure is designed and constructed to minimize adverse environmental effects, and, beginning in 2020, be resilient to future climate extremes. New construction projects will pursue LEED Gold certification, reduce greenhouse gas emissions by a further 50% relative to the LEED Gold baseline, and be adapted for the future climate.

## 2022 GHG Emissions and Offsets Summary Table

**Table 1: Island Health’s Greenhouse Gas Emissions and Offsets for 2022**

Island Health 2022 GHG Emissions and Offsets Summary	
Total Emissions (tCO <sub>2</sub> e <sup>1</sup> )	29,501.3
Total BioCO <sub>2</sub> <sup>2</sup>	64.6
Total Offsets (tCO <sub>2</sub> e)	29,436.7
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO <sub>2</sub> e)	83.6
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets (tCO <sub>2</sub> e) to be Retired for 2022 Reporting Year	29,521
Offset Investment (\$25 per tCO <sub>2</sub> e)	\$738,025

<sup>1</sup> Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

<sup>2</sup> “Biogenic” portion (BioCO<sub>2</sub>) of the emissions from biomass, renewable natural gas and biofuels are not required to be offset due to their renewable source.

To reduce its emissions to net-zero, Island Health invests in emissions reduction projects by purchasing BC-based offsets through the provincial government. The offset payments provide incentives to BC-based projects that reduce emissions through greenhouse gas removal or avoidance according to provincial regulations. These projects support British Columbia's green economy and provide social, environmental and economic benefits to all British Columbians. The offset projects can be viewed on the [BC Carbon Registry](#).

### Retirement of Offsets

In accordance with the requirements of the *Climate Change Accountability Act* and *Carbon Neutral Government Regulation*, Island Health (the Organization) is responsible for arranging for the retirement of the offsets obligation reported above for the 2022 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (the Ministry) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to \$25 per tonne of offsets retired on its behalf plus GST.

## 2. EMISSIONS TRENDS & ADJUSTMENTS

### Emission Trends

Island Health annual emissions data, since 2010, is shown in Table 2 below. For a detailed table outlining exempt emissions, refer to Appendix A.

**Table 2: Island Health’s Emissions for Offsetting & Emission Intensity, since 2010<sup>3</sup>**

Year	Fleet <sup>4</sup> [tCO <sub>2</sub> e]	Office Paper [tCO <sub>2</sub> e]	Buildings [tCO <sub>2</sub> e]	Emissions for Offsetting [tCO <sub>2</sub> e]	Offset Cost	Emissions Intensity [tCO <sub>2</sub> e/m <sup>2</sup> ]
2010	893	831	32,129	33,853	\$823,025	0.065
2011	871	747	35,124	36,742	\$880,125	0.070
2012	850	717	34,116	35,683	\$855,025	0.065
2013	862	714	32,427	34,003	\$801,025	0.062
2014	881	691	32,092	33,665	\$774,850	0.061
2015	859	706	28,848	30,413	\$702,275	0.055
2016	837	677	28,836	30,350	\$706,925	0.056
2017	953	687	31,502	33,142	\$775,875	0.055
2018	645	724	29,246	30,615	\$723,425	0.050
2019	878	627	31,283	32,788	\$764,425	0.053
2020	601	547	32,574	33,722	\$755,775	0.054
2021	505	608	28,367	29,480	\$732,325	0.047
2022	919	651	27,867	29,437	\$738,025	0.046

Emissions from buildings decreased by 1.8% in 2022 compared to 2021. Overall GHG emissions decreased by 13.0% compared to 2010 levels. Island Health continues to grow. Facility floor area grew by 1.9% compared to 2021. The Energy Management program continues to make progress on their goals to reduce energy use and greenhouse gas emissions at Island Health’s facilities. Refer to Section 3 of this report.

Emissions from Fleet are 82% higher in 2022 compared to 2021. This reflects a direct increase in fuel consumption from increased Fleet vehicle use and growth in the number of fleet vehicles. The fleet pool vehicle program was reinstated from a COVID-19 related hiatus and Fleet vehicles are being used more frequently with the lessening of pandemic travel concerns.

Emissions from paper increased 7.0% from the previous year; reflecting increased paper consumption. Overall, paper emissions have decreased by 21.7% from 2010 levels.

To achieve the Province’s public sector target for 2030, emissions requiring offset need to drop significantly in the next few years, regardless of increases in service levels. Since 2010, Island Health has made insufficient progress towards reaching the provincial targets, despite efforts from various

<sup>3</sup> Historical data is updated to reflect data currently in the Clean Government Reporting Tool. ‘Prior year adjustments’ are included in the year the emissions were generated, not in the year offsets were purchased.

<sup>4</sup> Retroactive adjustments to Fleet emission data for 2016 - 2021. Refer to Adjustments below.

departments including Energy, Environment and Climate Change, Facilities, Maintenance and Operations (FMO), Facilities Design & Construction (FDC), Fleet Services, and Printing Services. Looking ahead, increased CNCP funding, additional funding from utility partners for building operations optimization, provision of low emissions energy and targeting net zero emissions for new construction will help bend the emissions curve.

## Adjustments

In 2022 the *B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions* was updated; which affects current and historical emissions reporting. The adjustments are outlined below.

The methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) emissions intensity for gasoline fuelled Light Duty Vehicles (LCVs) and Light Duty Trucks (LDTs) is decreased, retroactively to 2016, to reflect Federal Government's *On-Road Vehicle and Engine Emission Regulations* on vehicle tailpipe air pollutant emissions. For more detail refer to *2022 B.C. Best Practices Methodology for Quantifying Greenhouse Gas Emissions*. In Table 2 above, Fleet emission from 2016 to 2021 have been adjusted from previously reported values. For 2022 the new emission factors are implemented.

For 2022 Reporting Year, the Clean Government Program updated the Global Warming Potentials (GWPs) to align with the IPCC's Fifth Assessment Report (AR5), published in 2013 and 2014. Previously, the Clean Government Program used GWPs from the IPCC's Fourth Assessment Report (AR4), published in 2007.

Annually, Electricity Emissions Factors (EEFs) for B.C.'s electricity grid are adjusted to reflect the carbon intensity of electricity consumed in B.C. For 2022 Reporting Year the EEF is 11.5 tCO<sub>2</sub>e/GWH, an 18.6% increase over 2021 Reporting Year.

### 3. Carbon Neutral Capital Program

In fiscal year 2014/15, Island Health began accessing funding from the Province’s Carbon Neutral Capital Program (CNCP) to implement greenhouse gas emissions reduction projects. In 2021/22, CNCP funding was also allowed to be used to enhance facility resiliency. Table 3 summarizes projects funded by the program.

**Table 3: Summary of CNCP Projects**

Fiscal Year	Project Description	Total Expenditure	CNCP Funding	Expected Annual Savings	Emissions Reduction [tCO <sub>2</sub> e/yr]
FY2015	Lighting upgrade Boiler optimization HVAC zoning	\$1,366,278	\$902,818	\$194,452	508
FY2016	Laundry plant upgrade Boiler plant replacement Domestic hot water decouple Zone isolation and lighting	\$1,474,278	\$828,505	\$172,639	525
FY2017	Heat recovery chiller Exhaust air heat recovery Zone control Domestic hot water decouple	\$1,354,402	\$817,953	\$104,640	655
FY2018	Boiler & heating plant upgrade Heat recovery HVAC upgrade	\$1,416,875	\$817,953	\$62,650	262
FY2019	Electronic zone control OR zone control HVAC zoning and scheduling	\$1,147,500	\$821,370	\$89,453	321
FY2020	Heat recovery system	\$1,222,320	\$822,320	\$47,131	480
FY2021	Heat recovery systems EV infrastructure	\$3,184,063	\$2,835,561	\$208,790	702
FY2022	Heat recovery & cooling Heat pumps for DHW Lighting and EV infrastructure	\$2,867,424	\$2,835,561	\$68,500	212
FY2023	Domestic hot water decouple Heating Plant & DHW Renewal	\$2,149,589	\$2,149,589	\$34,519	116

CNCP funding will continue to be dedicated to greenhouse gas emissions reduction projects within Island Health. The installation of heat recovery chillers and electric air-source heat pumps to provide space heating, space cooling and domestic hot water (DHW) production. These services represent the greatest opportunity to substantially cut our emissions and help us meet our targets. Combined with a coefficient of performance greater than 3.0 for electric heat pumps, these retrofits are expected to save substantially on operating costs.

## 4. STRATEGIES TO REDUCE EMISSIONS

### Buildings

Island Health's strategy for achieving *CleanBC's* 50% reduction in emissions by 2030 is going to require a three-pronged approach as follows:

- Scale-up of continuous optimization program by Building Automation Systems Specialist focused on existing building systems to eliminate energy waste.
- Increasing annual capital dedicated to emissions reduction from the current level of \$2.8M - with an additional \$5.6M to \$11.6M annually starting in fiscal year 2022/23 for retrofits, such as heat recovery systems. These provide dual benefit including infrastructure renewal and climate change adaptation.
- If necessary, increased operational funding to purchase low/zero carbon fuels, like renewable natural gas in 2030 at roughly \$115,000/year for every 1,000 tCO<sub>2e</sub> below the target.

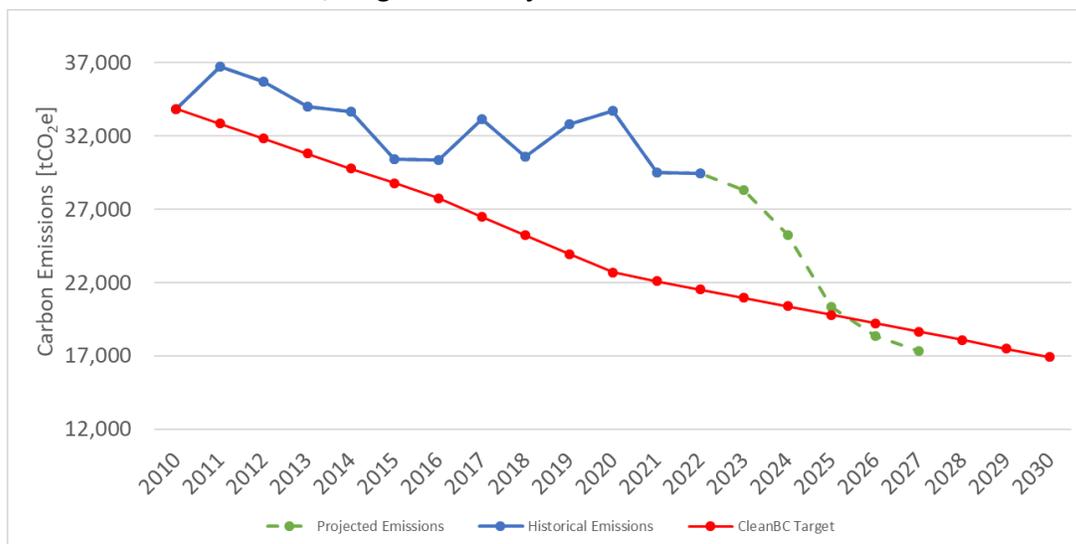
The Energy, Environment and Climate Change department has acted on those strategies in the following ways.

- The Building Automation Systems Specialist has successfully implemented a continuous optimization program (COP) to optimize existing assets. This program achieved significant energy and emissions savings in 2022 and is planned to grow in the next year.
- Our second strategy to decrease fossil fuel use by increasing energy efficiency and adding more heat recovery and electrification has been well underway for several years and we are reaping the benefits of this approach.

Our priority now is to "scale up" this effort by identifying more retrofits that will take a bigger bite out of our emissions. As well, we are increasing our capacity to undertake this work through hiring more FTEs.

In 2022/23, we received a significant strategic funding which allowed us to develop a 5-year capital plan which, if fully resourced and implemented, will lead to Island Health meeting our 2030 GHG emissions reduction targets. Figure 3 illustrates our 5-year capital plan against the reported emissions and CleanBC targets.

**Figure 2: Island Health Emissions, Targets and Projections**



## Fleet

Island Health is targeting emissions reduction by introducing zero-emission vehicles and improving fuel efficiency. The health authority is committed to the [CleanBC](#) provincial mandate by making 10% of light-duty vehicle replacements zero-emission vehicles, when suitable.

In fiscal year 2021/22, Island Health utilized CNCP funding to procure two battery electric vehicles (BEVs) and two Level 2 charging stations to support fleet electrification in the north island region (Geo 1). Additionally, Island Health also introduced three plug-in hybrid electric vehicles (PHEVs), providing these multi-passenger vans to a number of outreach programs. In support of this, two Level 2 charging stations were installed in Duncan. Further, two Level 2 stations were installed at Victoria’s Royal Jubilee Hospital loading dock to support the transport fleet.

A significant portion of mobile emissions is from diesel heavy-duty trucks, for which there are currently no suitable zero-emission alternatives available. Accordingly, Island Health conducted external consultation on the feasibility of converting seven heavy-duty trucks from diesel to compressed natural gas. The health authority is also planning to introduce a medium-duty electric truck for localized transport, dependent on CNCP funding availability.

Overall, funding remains the largest challenge to achieving *CleanBC*’s emissions reduction target for public sector fleets of a 40% reduction by 2030, from 2010 levels. Despite federal and provincial rebates, electric vehicles are more expensive to purchase and require charging equipment that can be costly to install, depending on existing parking layouts and electrical service locations. There are further challenges associated with installing charging infrastructure in older facilities and leased buildings, which can lack electrical capacity. Regardless, Island Health’s Fleet Services continues to review funding opportunities and optimal locations for charging infrastructure.

## Paper

Emissions from office paper account for 2.2% of Island Health's emissions. Since 2019, Island Health has been using paper made from sugarcane fibre as its standard 8½ x 11 office sheet. This paper is produced from the residue waste of sugar production, and its greenhouse gas emissions factor is considered the same as 100% recycled wood fibre based paper. Paper made from 100% recycled fibre has 37% lower emissions than paper made from virgin wood fibre. Further opportunities for emissions reduction involve exploring alternative paper sources for other paper sizes, as well as reducing paper use through behaviour change and digitization.

## 5. OUT-OF-SCOPE EMISSIONS

Island Health’s climate impact extends beyond the in-scope emissions sources of fuels from buildings and fleet vehicles, and office paper usage. Consequently, the organization is monitoring greenhouse gas emissions from out-of-scope sources, such as personal vehicle business travel, fugitive emissions from refrigerants and anesthetic gas. Out-of-scope emissions sources are not included in the *Carbon Neutral Government Regulation*, and are thus not formally reported. Out-of-scope emissions do not require legislated carbon offsets, but they still emit harmful greenhouse gases further exacerbating climate change.

### Personal Vehicle Business Travel

Island Health covers a large geographic area, requiring substantial business travel. When staff use their personal vehicle for travel, the emissions are not included in the organization’s total reported greenhouse gas impact. Personal vehicle business travel accounts for considerably more distance travelled than in-scope fleet vehicles.

In recent years, Island Health has taken steps to offer more pool vehicles at sites across the Island, in place of personal vehicles. This initiative provides greener vehicle options and reduces costs for the health authority; however, it also increases the number of vehicles in the fleet. Expanding access to pool vehicles will raise reported in-scope fleet emissions, but is expected to offset less-efficient personal vehicle travel. With several zero-emission vehicles and hybrids, Island Health’s fleet is aiming to be more efficient than the average passenger vehicle.

In 2022, the kilometers traveled in personal vehicles increased by 21% from 2021, largely due to the continued return to business as usual practices. Similarly, Fleet travel increased by 8% as the number of available fleet vehicles increased and expanded project plans required increased travel..

### Refrigerants (Fugitive Emissions)

Fugitive emissions are from the leakage and loss of HFC and PFC based refrigerants from cooling equipment - Island Health applies the 1% rule to fugitive emissions from refrigerants, which states: “An emission source estimated to total less than 1% of a PSO’s overall emissions may be deemed out-of-scope if the effort to collect or estimate emissions is disproportionately onerous. The estimated cumulative sum of emissions exempted under this rule for a PSO should not be greater than 1% of that PSO’s total emissions.” While fugitive emissions are within the scope of the *Carbon Neutral Government Regulation*, it is approximated they account for less than 1% of Island Health’s total in-scope emissions.

Island Health will continue taking measures to enhance monitoring and seek opportunities to use less global warming intensive refrigerants when new equipment is purchased.

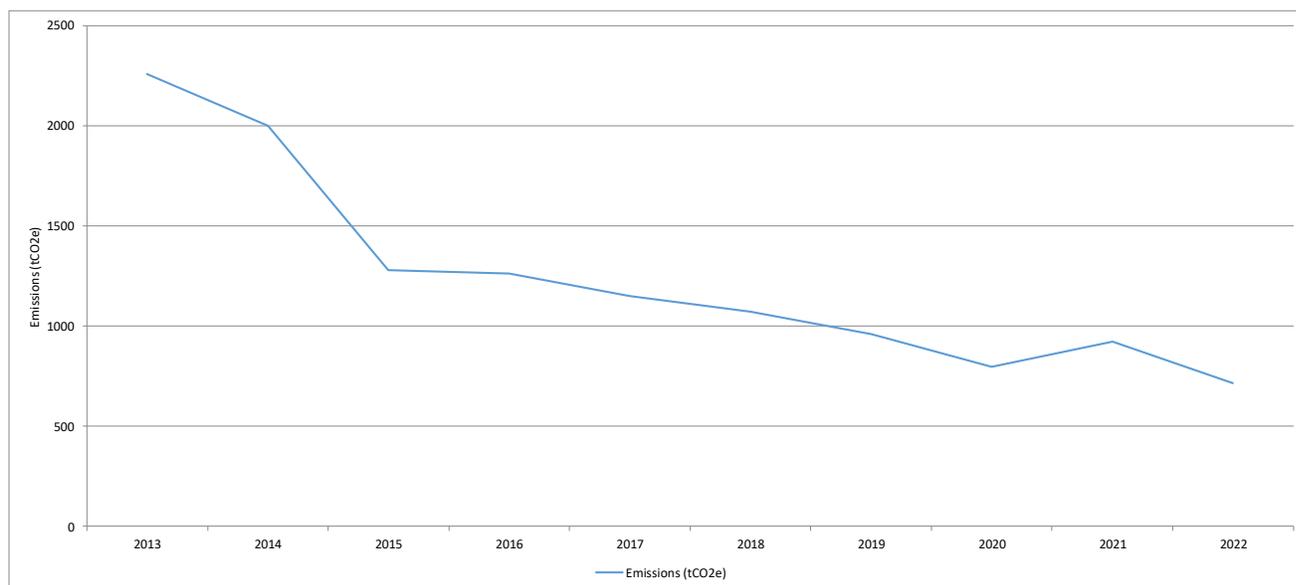
### Anesthetic Gas

At Island Health, estimated greenhouse gas emissions from anesthetic gas are higher than the in-scope sources from fleet fuels and paper consumption. Island Health primarily uses two types of anesthetic gas, one of which has a significantly higher global warming potential.

From 2013 to 2022 estimated emissions from anesthetic gases desflurane and sevoflurane declined by approximately 68%, as indicated in Figure 4. Anesthesia workstations were installed in 2015 at major acute sites, reducing overall gas usage at the source through efficiency measures. Over the past six years, Island Health’s usage of the anesthetic gas with higher global warming potential declined, in favour of the lower-emitting gas. During the onset of the COVID-19 pandemic, the health authority postponed non-urgent surgeries, lowering the usage of anesthetic gas in 2020.

An Island Health physician and medical student conducted a quality assurance project in 2020 to raise awareness on the carbon footprint of anesthetic gas usage in British Columbia, published in the [BC Medical Journal](#).

**Figure 3: Island Health’s Emissions from Anesthetic Gas Use<sup>5</sup>**



## Metered-Dose Inhalers

Metered-dose inhalers (MDIs) contain a hydrofluoroalkane (HFA) propellant, a potent greenhouse gas (GHG) that expels the medication from the canister with each actuation. Depending on the type and content of HFA, each MDI has a carbon footprint equivalent to driving up to 139km in a standard gasoline-powered vehicle.

Each month, Island Health facilities dispense around 2,930 inhalers, which corresponds to 50 tCO<sub>2</sub>e or the equivalent of driving around the circumference of the earth 4.5 times per month.

The Critical Air Project was started in 2022. This inpatient climate-conscious medication initiative uses a quality improvement lens to decrease inhaler-related GHG emissions through policy interventions, operational interventions, and a widespread education campaign.

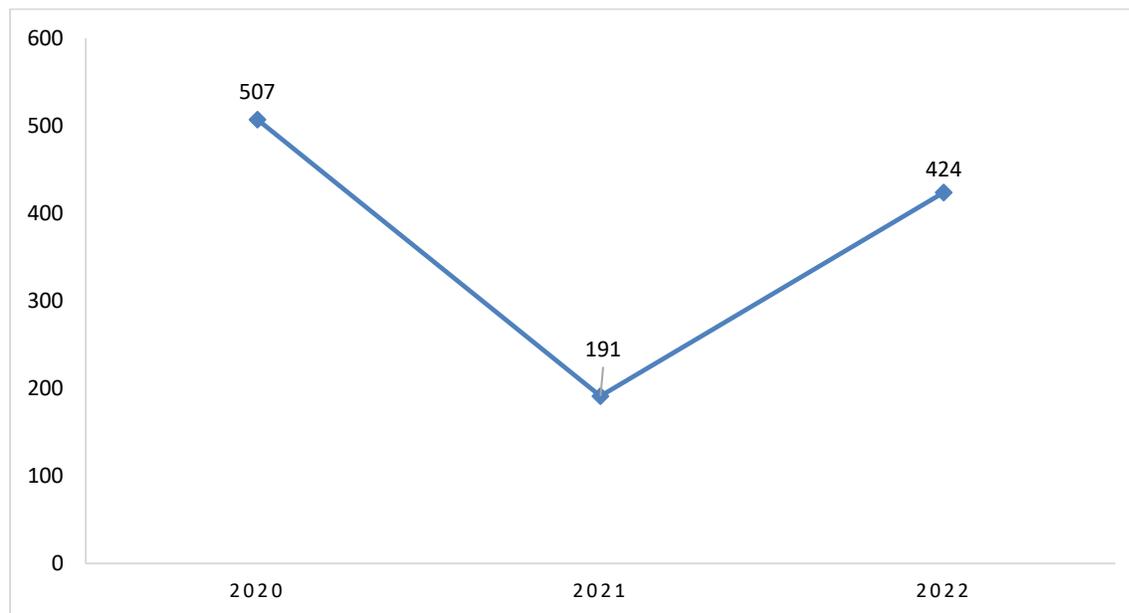
The diagram shows a surge of inhaler-related GHG emissions in 2020 during the pandemic as the Health Authority moved away from nebulized medications during the pandemic. This led to over purchasing of

<sup>5</sup> Emissions are estimated using factors from Sulbaek Andersen et al, 2012

inhalers and a subsequent compensatory decrease in emissions due to lower purchasing volumes in 2021. The data from 2022 is more representative of baseline MDI emissions, which is roughly equivalent to the Island Health vehicle fleet.

The Critical Air Project has been recognized as a national innovation in partnership with the CASCADES network and is spreading their approach at hospitals across the country.

**Figure 4: Island Health’s Emissions from MDI Use (tCO<sub>2</sub>e)**



## 6. CLIMATE CHANGE ADAPTATION & RESILIENCE

Climate change continues to present risks for the health of our communities, healthcare operations and facility infrastructure. While Island Health strives to minimize its climate impact, the health authority recognizes that building resilience within facilities is critical for maintaining health services as the climate changes. In 2020, the organization advanced resiliency by incorporating climate change risk assessment into new construction and renovations, and increasing climate change awareness. In 2021 these assessments became ingrained in project design stakeholder meetings, and annual facility reviews conducted by FMO managers in all Island Health geographic zones.

### Organizational Risk

In 2019, Island Health identified lack of resilience to the changing climate as a top risk for the health authority, which resulted in the development of a risk profile in 2020. As climate change is an unfolding event over a long period there will be many controls required to reduce impacts. The main control identified at this time involves targeting new construction so all facilities are developed to withstand climate extremes over their life span. It is also important to increase awareness about climate change impacts, so staff and communities can take preventative actions and incorporate climate change into decision-making. Over the course of 2021 and 2022 presentations to the Board detailed Island Health’s key activities related to climate change, and the associated enterprise risks, including: Energy and

Emissions; Adaptation to Climate Change, Business Continuity, and Emergency Preparedness; Health Impacts, and; Environmental Sustainability.

## New Construction

New construction and renovations provide an excellent opportunity to incorporate climate change resiliency measures into design. Facilities are typically designed based on historical weather data, but this is not representative of the climate new facilities will operate in. This has led to the development of requirements for consulting engineers and architects to use future climate data to inform the design of building systems, with an [addendum to their standard contracts](#). Also, an extreme event screening tool was created as a means for early screening of projects' climate hazards and impacts. This tool was used to screen projects and adjust the scope of work to include climate resilience measures.

Health-care facilities need to be resilient to the impacts of a changing climate, to be built and operated with reduced greenhouse gas emissions, and to have reduced negative impacts on long-term human and environmental health and wellness. In order to achieve this, design teams should follow the [Low Carbon Resilience and Environmental Sustainability Guidelines for Health-care New Construction](#) (the LCRES Guidelines) to inform the design of long term care facilities from the planning stage onward. These guidelines include three pillars including:

- Low Carbon - Low carbon design indicates a shift away from conventional fossil fuel-supplied energy systems to incorporate alternatives such as electrification, renewable fuels and low carbon district energy.
- Environmental Sustainability - Environmentally sustainable health systems improve, maintain or restore health outcomes, while minimizing negative impacts on the environment.
- Climate Resilience - Climate resilient health-care facilities are able to anticipate, respond to, cope with, recover from and adapt to climate-related shocks and stresses to bring ongoing and sustained health care to their target populations

## Existing Facilities

Existing facilities remain the largest floor area within Island Health's building stock. The age of the facilities increases the likelihood for poor resilience to a changing climate. Based on prior assessments and recent experience, the short-term impacts of climate change are from extreme heat, wildfire smoke, and extreme wind events. Facility operators have started taking measures to address these concerns by stocking specialized air filters to be used on ventilation equipment during wildfire smoke events. Additionally, expanding cooling capacity and availability is a priority for long-term care facilities. This provides an opportunity to use heat pumps, which can also reduce greenhouse gas emissions.

## Public Education & Awareness

The Environmental Health Office's Regional Built Environment Team supports municipalities and regional districts as they develop climate resiliency plans, to ensure health impacts are considered along with infrastructure vulnerabilities. This team also reviews and comments on official community plans that are in review due to the declaration of climate emergencies in various communities. Furthermore, in the fall of 2020, the [Island Health Magazine](#) published the first in a series of climate change articles by Medical Health Officer, Dr. Shannon Waters.

## Future Climate Resilience Tasks:

- Support climate change risk and resilience for all capital projects
- Monitor and develop guidelines for wildfire smoke events
- Review Official Community Plans, due to declarations of climate emergencies
- Participate in municipal and regional district climate action planning
- Support governance structure development
- Development of a Climate change strategy for Island Health
- Community & Climate Resilience group in development

## 7. SUSTAINABILITY INITIATIVES

Several departments at Island Health are actively taking measures to achieve greater efficiency and minimize adverse environmental impacts. Below are highlights of these activities in 2021.

### Water Conservation

Island Health reviews water costs and consumption at all major owned sites through an online utility monitoring platform. Facilities with higher consumption and water rates are prioritized for further analysis. This analysis informs future opportunities for identifying water conservation measures. The Energy, Environment and Climate Change department also incorporates a water performance review into quarterly meetings with FMO. In addition to water monitoring, all new buildings are constructed with high water efficiency goals through LEED certification, including the new North Island Hospital campuses which have the lowest water usage per square metre.

Island Health set the goal to reduce the Water Use Index by 20% by 2030 from 2015 levels. At the end of 2021 water consumption had been reduced by 21.4% from 2015 levels, exceeding the target 9 years in advance.

### Waste Reduction

Island Health is advancing sustainability best practices by reducing waste and moving towards a greener supply chain. In 2022, Environmental Support Services created two new Utilization and Resource Coordinator roles to support waste initiatives and through the Environmental Sustainability Program waste reduction was identified as a focus area. Island Health is also collaborating with other BC regional health authorities and PHSA Supply Chain to embed environmental sustainability into procurement processes.

There have been many waste reduction initiatives throughout Island Health. For example, in 2022 the Royal Jubilee Hospital participated in a Mask Recycling Pilot Program, and the Long Term Care Facility at Saanich Peninsula Hospital began transitioning from single-use to reusable cups for residents. Usage of single-use personal protective equipment (PPE) has remained elevated since the pandemic. There a number of emerging opportunities to reduce the volume of PPE waste going to landfill through recycling programs, use of reusable materials, and campaigns addressing the over-usage of PPE where appropriate. Small scale projects and pilots have been rolled out, expansion efforts are currently being planned.

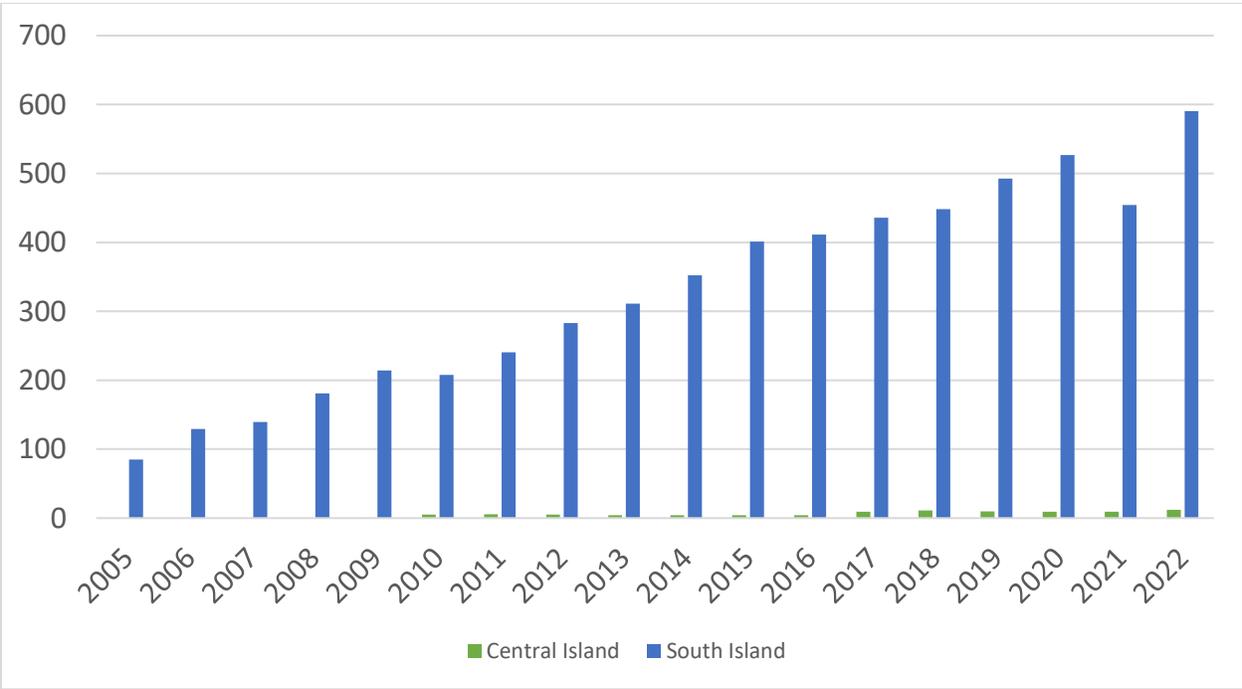
### Public Electric Vehicle Charging Stations

Emissions from public vehicles are out-of-scope; however, the health authority recognizes the negative health impacts associated with pollution. Island Health has Level 2 electric vehicle charging stations at multiple sites to serve the public. Installing public charging infrastructure has challenges associated with high costs of equipment, limited parking space availability and electrical capacity requirements. By 2040, 100% of new light-duty vehicles sales and leases will be zero emissions vehicles, as set out in the Province’s [Zero Emissions Vehicle Act](#). At this time, Island Health primarily provides public charging to meet municipal requirements or achieve LEED points for new construction. Island Health owns and operates 17 Level 2 charging stations.

### Transportation Demand Management

Parking Services promotes initiatives for decreasing single-occupancy vehicle traffic and demand for parking at Island Health sites. Through transportation demand management planning, Parking Services supports employees in optimizing their use of local transportation resources and Island Health programs. By getting people out of single-occupancy vehicles and into more efficient modes of commuting, the health authority reduces parking congestion and its climate impact. Initiatives to support transportation demand management include participation in the annual Go By Bike Week, providing bike storage, offering employees subsidized BC Transit ProPASS enrollment, and providing access to a ridesharing platform to connect employees to a central online commuting hub. After a decline in ProPASS enrollment was observed in 2021, ridership in 2022 increased by 30%. As public health orders and mask mandates were lifted during the early months of 2022, uptake in ProPASS enrollments rose.

**Figure 5: Island Health’s BC Transit ProPASS Enrollment**



End of report.

## Appendix A GHG Emission Details

Year	Fleet [tCO <sub>2</sub> e]	Office Paper [tCO <sub>2</sub> e]	Buildings [tCO <sub>2</sub> e]	Total Emissions [tCO <sub>2</sub> e]	Exempt Emissions [tCO <sub>2</sub> e]	Emissions for Offsetting [tCO <sub>2</sub> e]	Offset Cost [tCO <sub>2</sub> e]	Emissions per FTE [tCO <sub>2</sub> e/FTE]	Emissions Intensity [tCO <sub>2</sub> e/m <sup>2</sup> ]
2010	893	831	32,129	33,914	61	33,853	\$823,025	2.98	0.065
2011	871	747	35,124	36,800	58	36,742	\$880,125	3.19	0.070
2012	850	717	34,116	35,734	51	35,683	\$855,025	2.97	0.065
2013	862	714	32,427	34,056	53	34,003	\$801,025	2.83	0.062
2014	881	691	32,092	33,720	55	33,665	\$774,850	2.77	0.061
2015	859	706	28,848	31,279	866	30,413	\$702,275	2.37	0.055
2016	837	677	28,836	31,224	874	30,350	\$706,925	2.28	0.056
2017	952	687	31,502	34,011	869	33,142	\$775,875	2.42	0.055
2018	645	724	29,246	31,476	861	30,615	\$723,425	2.12	0.050
2019	878	627	31,283	33,338	551	32,788	\$764,425	2.16	0.053
2020	601	547	32,574	33,773	52	33,722	\$755,775	2.06	0.054
2021	505	608	28,367	29,534	54	29,480	\$732,325	1.66	0.047
2022	919	651	27,867	29,501	65	29,437	\$738,025	1.62	0.046

### Exempt Emissions

From 2015-2019, Island Health purchased a small amount of renewable natural gas (RNG), which was exempt from offset purchases because it was produced from biogenic sources. In August 2019, FortisBC ended the sale of RNG to the Health Authority due to supply constraints. As a result of the curtailment, almost 500 tonnes of exempt greenhouse gas emissions from RNG were substituted with standard natural gas in 2020.

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