



2021 Climate Change Accountability Report



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INTRODUCTORY NOTE

The Climate Change Accountability Report (CCAR) is Island Health's twelfth annual report on the previous year's greenhouse gas emissions. Readers will view the steps Island Health has taken to achieve carbon neutrality and the organization's emissions reduction efforts. On July 1, 2010 the first iteration of carbon reporting, the then *Carbon Neutral Action Report*, was published. The Executive Summary optimistically stated, "As of 2010 the VIHA's carbon emissions are 13% below 2007 carbon emissions. VIHA's goal is to continue to reduce carbon emissions to meet the 2020 target of being 33% below 2007 emissions." Since then, 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, support will come from the Ministry of Health by way of policies and capital funding, the Climate Action Secretariat will continue to provide direction, education, awareness and research, and our utility partners will advance infrastructure development, rates, and provisions of low carbon energy. Internally, the 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. This funding doubled in 2020. 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 are rising. 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. Two years of the 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 emerge from the pandemic there will be lessons learned and innovations that will improve the delivery of care and possibly reduce environmental impacts.

Science informs us that the pandemic will end, and may even fade from memory. Climate change, however, will continue 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 lək̓ʷəŋən (Lekwungen) speaking peoples of the Songhees and Esquimalt Nations, and other Coast Salish 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.

We understand the lands and ecosystems within these territories are being adversely impacted by climate change and our team commits to reducing this impact by minimizing Island Health's energy use and carbon emissions and being more thoughtful in our use of all natural resources including water.



1. OVERVIEW

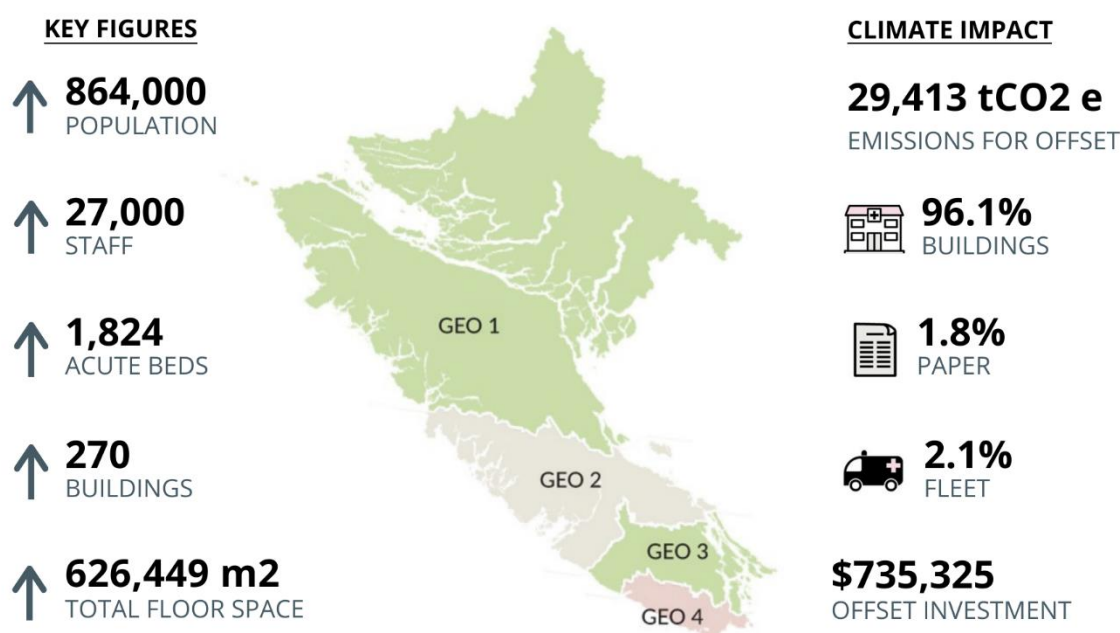
This Climate Change Accountability Report for the period January 1, 2021 to December 31, 2021 summarizes Island Health's emissions profile, the total offsets to reach net-zero emissions, the actions taken in 2021 to reduce greenhouse gas emissions (GHGs), and plans to further reduce emissions in 2022 and beyond.

By June 30, 2022, Island Health's final 2021 Climate Change Accountability Report will be posted to 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 2021 Numbers at a Glance



Each year, Island Health expands to serve its growing communities. In 2021, the population of Vancouver Island grew substantially, as did the total number of staff at Island Health, now eclipsing 27,000. Since first achieving carbon neutrality in 2010, the health authority's total floor space has increased by 20%. 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. Island Health operates four LEED Gold facilities, as well as one LEED Silver facility. Presently, 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.

2021 Emissions and Offsets Summary Table

Table 1: Island Health’s Greenhouse Gas Emissions and Offsets for 2021

GHG Emissions created in Calendar Year 2021	
Total Emissions (tCO ₂ e ¹)	29,463.3
Total BioCO ₂ ²	50.3
Total Offsets (tCO ₂ e)	29,413
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for the 2021 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2021 Reporting Year	29,413
Offset Investment (\$25 per tCO ₂ e)	735,325

¹ Tonnes of carbon dioxide equivalent (tCO₂e) 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.

² “Biogenic” portion (BioCO₂) 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 2021 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

Table 2 provides detailed emissions information for the 2010-2021 period, including emissions by source, emissions requiring offsets, offset costs, emissions per full-time equivalent employee (FTE) and emissions per square metre of floor area.

Table 2: Island Health’s Emissions and Offset Data, 2010 to 2021³

Year	Fleet [tCO ₂ e]	Office Paper [tCO ₂ e]	Buildings [tCO ₂ e]	Total Emissions [tCO ₂ e]	Exempt Emissions (tCO ₂ e)	Total Emissions for Offsetting (tCO ₂ e)	Offsets Cost (\$25 per tCO ₂ e)	Emissions per FTE (tCO ₂ e/FTE)	Emissions per square metre (tCO ₂ e/m ²)
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	867	677	28,836	31,254	874	30,380	706,925	2.28	0.056
2017	987	687	31,502	34,045	869	33,176	775,875	2.42	0.055
2018	670	724	29,246	31,501	861	30,640	723,425	2.12	0.050
2019	907	627	31,283	33,368	551	32,817	764,425	2.16	0.053
2020	622	547	32,574	33,794	52	33,742	755,775	2.06	0.054
2021	522	608	28,233	29,463	50	29,413	732,325	1.66	0.047

Island Health continues to grow in employees and facility space, demonstrated by an 8.1% increase in FTEs and 0.6% in floor area in 2021 compared to 2020.

While Island Health experiences continued growth, GHG emissions for offsetting decreased 12.8% in 2021 from the previous year. A contributing factor to the decline was a change in the emissions factor for electricity from 40.1tCO₂e/GWh to 9.7 tCO₂e/GWh. Primarily, the Energy Management program continues to make progress on their goals to reduce energy use and greenhouse gas emissions at Island Health’s facilities, as shown in Section 3 of this report.

Emissions from the Fleet category in 2021 are 16% lower than from the previous reporting year, 47.1% below the peak emissions year (2017), and 41.5% below the 2010 reported emissions. The fleet pool vehicle program was reinstated from a COVID-19 related hiatus. This strong trend in declining emissions points to results stemming from the continued investments in fleet low-carbon electrification.

Emissions from paper increased 11.2% from the previous year. Paper consumption rose significantly as many staff returned to the office from their temporary remote workspaces. Overall, paper emissions have

³ 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.

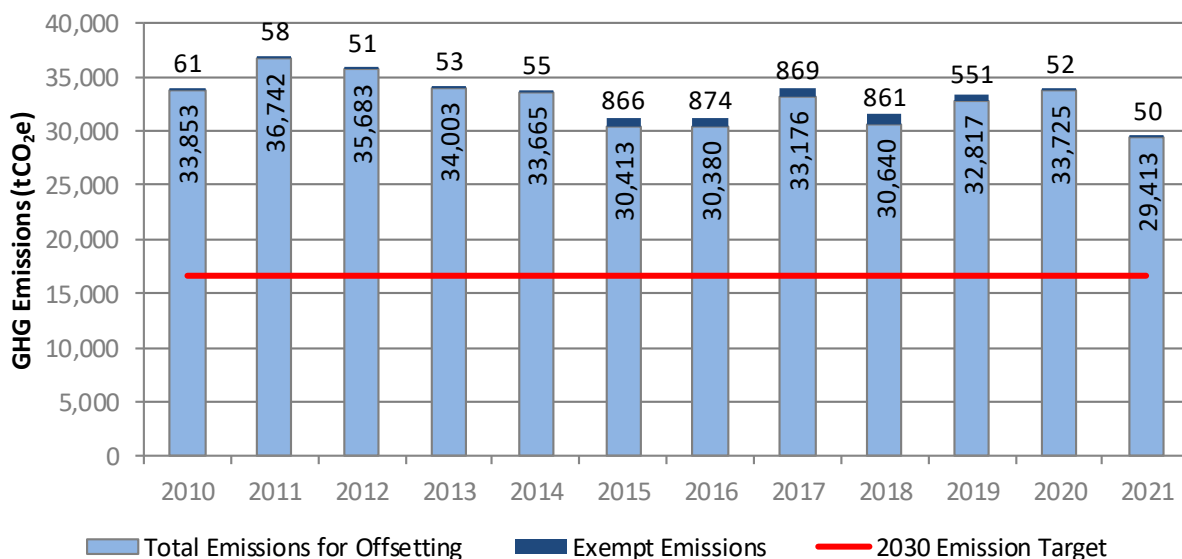
decreased by 26.8% from 2010 levels. A contributing factor is the adoption of an alternative letter-sized paper in 2019, which has an emissions factor lower than paper made from 100% recycled content.

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. This event highlights the difficulties of securing cleaner fuels that are both accessible and affordable.

To achieve the Province’s public sector target for 2030, emissions requiring offset need to drop by 50% in the next decade, regardless of increases in service levels. Since 2010, Island Health has not made sufficient progress towards reaching the provincial targets, despite efforts from the Energy, Environment and Climate Change department, 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.

Figure 2 shows total emissions for offsetting (light blue bar) and exempt emissions (dark blue bar) over the same period, compared to the 2030 emissions target (red line).

Figure 2: Change in Island Health Emissions and Offsets, 2010 to 2021



Island Health’s emissions peaked in 2011 when the Patient Care Centre opened in Victoria. Emission levels steadily decreased between 2011 and 2015. The 2016 emission level was slightly higher (0.7%) than the 2015 level due to a cold winter season and a number of delayed emissions reduction projects. Emissions in 2017 increased by 9.8% compared to the 2016 level, with the opening of two new North Island Hospital campuses in Campbell River and Comox Valley. These new facilities increased the overall floor area by approximately 40,000 square metres. Emissions in 2018 decreased 6.8% from 2017. In 2019, Island Health’s emissions increased 5.7% attributed to the loss of renewable natural gas, an increase in back-up fuels with higher global warming potential and slightly colder weather than an average year.

Overall, Island Health has decreased emissions from the peak level in 2011, despite a 20% increase in total floor space over the same period. Unfortunately, even with a focused emissions reduction effort, emissions have plateaued over the past several years, with some variances in 2020 and 2021 from adjusted electricity emissions factors. In order to make progress in reducing emissions, while demand for services grows, reduction efforts will have to increase significantly. Table 2 outlines Island Health's emissions by source, with buildings accounting for 96% and the remainder from fleet vehicles and office paper.

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. Table 3 summarizes projects funded by the program. The three-year rolling average cost of reducing emissions through these projects has been \$5,218/tCO₂e. This value is utilized in forecasting future CNCP-funded emissions reductions.

Table 3: Summary of CNCP Projects

Fiscal Year	Project Description	Total Expenditure (\$)	CNCP Funding (\$)	Expected Annual Savings (\$)	Emissions Reduction (tCO ₂ e/yr)	Average Cost of Emissions Reduction (\$)
FY2015	Lighting upgrade Boiler optimization Heating, ventilation & air conditioning (HVAC) zoning	1,366,278	902,818	194,452	507.5	2,692
FY2016	Laundry plant upgrade Boiler plant replacement Domestic hot water decouple Zone isolation and lighting	1,474,278	828,505	172,639	525.2	2,807
FY2017	Heat recovery chiller Exhaust air heat recovery Zone control Domestic hot water decouple	1,354,402	817,953	104,640	654.7	2,069
FY2018	Boiler & heating plant upgrade Heat recovery HVAC upgrade	1,416,875	817,953	62,650	262.3	5,402
FY2019	Electronic zone control OR zone control HVAC zoning and scheduling	1,147,500	821,370	89,453	321.0	3,575
FY2020	Heat recovery system	1,222,320	822,320	47,131	479.7	2,548
FY2021	Heat recovery systems and zero emission vehicle infrastructure	3,184,063	2,835,561	208,790	702.4	4,533
FY2022	Heat recovery & cooling for Long Term Care, heat pumps for DHW, Lighting and EV infrastructure	2,867,424	2,835,561	68,500	212	13,545
	3-Year Rolling Average	2,424,602	2,164,481	108,140	465	5,218

In 2021/22, as a first, CNCP funding was used not only to reduce climate-changing emissions, but also to substantially enhance facility resilience to the effects of climate change, particularly extreme heat events. The largest of the four projects involved the installation of heat recovery chillers in the long-term care (LTC) facility in Campbell River. Until recently, LTC facility design did not include air conditioning for resident rooms. As such, very few LTC sites have the capabilities to maintain comfortable indoor

temperatures when it is abnormally hot outside. The heat recovery chiller, however, not only offsets natural gas use in the winter, but in summer, the chiller works in reverse mode, rejecting interior heat to the outside, thus providing much needed cooling to resident rooms. More of these retrofits are needed at other LTC sites however.

In another first instance for Island Health, the installation of electric air-source heat pumps for producing domestic hot water (DHW) was completed with CNCP funding. This project not only cuts emissions by offsetting the use of propane, it also provides a testing ground for this technology. Though proven off the shelf equipment has been used, DHW production using air-source heat pumps has not been done before at Island Health. Operating experience gained with this first installation will pave the foundation for converting more of our DHW production to electric heat pumps. Fossil fuel used to produce DHW in healthcare accounts for 20% to 30% of building emissions so this approach to producing DHW could substantially cut our emissions and help us meet our targets. Lastly, because this system is being installed on a remote site where propane is trucked in, the cost of fossil fuel there is 400% more than that of natural gas for sites on the gas grid. Combined with a coefficient of performance greater than 3.0 for these heat pumps, this retrofit is expected to save substantially on operating costs.

Island Health's fleet of vehicles also generates greenhouse gas emissions. Island Health has been replacing older vehicles that are powered by fossil fuels with hybrids and battery electric versions as vehicles reach end of life. In fiscal year 2020/21 the CNCP program expanded to allow electric vehicle infrastructure to be eligible for funding; In FY2022 Island Health added two more fully electric vehicles and purchased two Level 2 charging stations to continue on the path of electrifying the fleet. Replacing older vehicles that burn fossil fuels also helps reduce ground level pollution and contributes to healthier air quality.

For FY2023, CNCP projects include renewing a heating plant at another LTC site as well as modernizing the DHW system in one of our medium sized acute care hospitals, for which electric air-source heat pumps are still being considered. More progress on electrifying our fleet is also expected.

4. STRATEGIES TO REDUCE EMISSIONS

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

1. Adding a dedicated Building Automation Systems Specialist to develop, roll out, and scale-up a continuous optimization program that focuses on existing building systems to eliminate energy waste. The new position will allow the organization to substantially ramp up existing efforts in this work.
2. 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 deep retrofits, such as heat recovery systems. These will also provide other benefits including infrastructure renewal and climate change adaptation.
3. 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 tCO₂e below the target.

Figure 3: Island Health Emissions, Targets and Projections

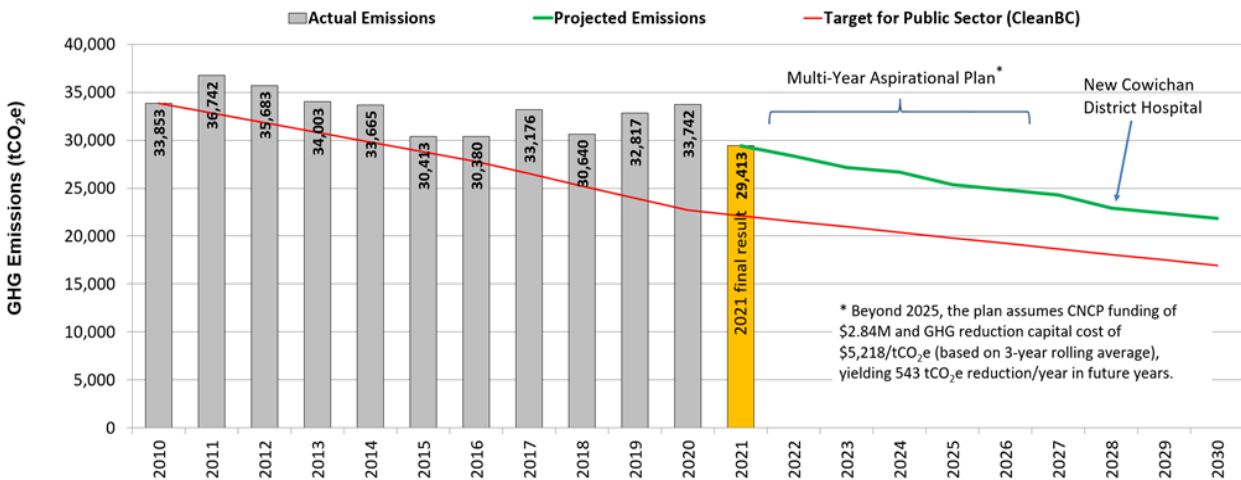


Figure 3 shows Island Health’s emissions since 2010. Emissions have been trending down with an overall reduction of 13.1% from the 2010 baseline, in spite of a 20% increase in floor area and 56% increase in FTEs. The green line forecasts future emissions, assuming annual capital investments of at least \$2.8M for retrofit projects. This clearly illustrates additional investment is required.

In support of the three-pronged approach, the Energy, Environment and Climate Change department has acted on those strategies in the following ways:

The department successfully implemented its highest priority strategy to minimize energy waste and cut GHG emissions through optimizing existing buildings, by hiring a Building Automation Systems Specialist (BASS). The BASS has now developed and implemented the program. In the first three months of 2022, the BASS-lead optimization program already reduced organizational emissions by 240 tCO₂e. Based on this, we expect annual reductions in energy and emissions from this program to be much greater than first anticipated.

The second strategy to lower fossil fuel use is to do so by increasing energy efficiency, adding more heat recovery and electrification, as well as ensuring all new construction is fully electric. All of these approaches have been well underway for several years. The priority now is to scale up this effort by identifying more deep retrofits that will make larger contributions to emissions reductions.

The department continues to advocate for more capital to fund building retrofits that cut emissions and deliver additional benefits, such as climate resiliency. A presentation was prepared and delivered to the Board which outlining the need for an additional \$5.6M - \$11.6M more per year to not only meet targets, but also reduce risks to the organization.

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 1.8% 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 2021, the kilometers traveled in personal vehicles increased by 11% from 2020, largely due to the gradual return to business as usual practices and as the pandemic’s impact on in-person meetings and events was managed more effectively. Fleet travel increased by 31% for two significant reasons: improved processes and procedures provided a safe and comfortable environment for Island Health staff when utilizing fleet vehicles, and vaccine deliveries utilized nine vehicles and travelled in excess of 400,000km over an 18 month span.

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.

Collecting refrigerant data is challenging. Island Health has taken steps to obtain data on reported leakages from cooling equipment. In 2020, 16 leak repairs were required across five sites. This information is useful for understanding the general impact of fugitive emissions, but it is not enough data to follow the methods outlined in The Climate Registry’s [General Reporting Protocol \(Version 2.1\)](#) for robust reporting.

Island Health will continue taking measures to enhance monitoring and seek opportunities to use less global warming intensive coolants when new equipment is purchased. 2021 data was unavailable at the time of publishing this report.

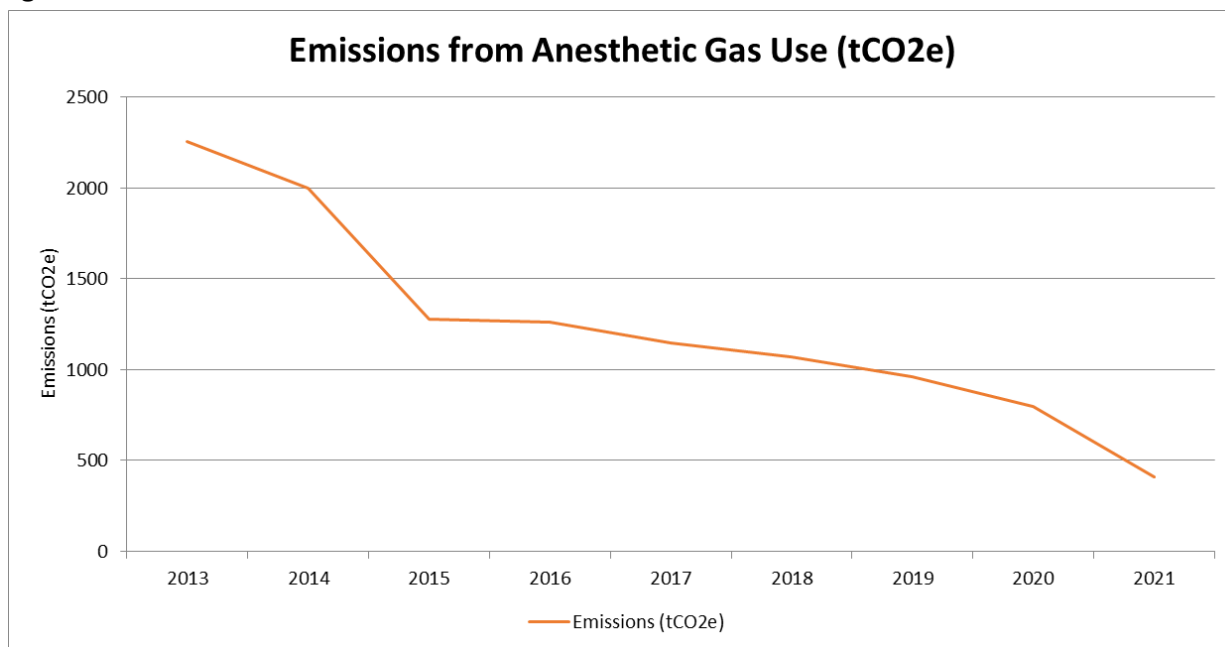
Anesthetic Gas

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 2021 estimated emissions from anesthetic gas declined by approximately 82%, 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 4: Island Health’s Emissions from Anesthetic Gas Use⁴



⁴ Emissions are estimated using factors from Sulbaek Andersen et al, 2012

6. CLIMATE CHANGE ADAPTATION & RESILIENCE

Climate change continues to present risks for healthcare operations and infrastructure, and also to the health of our communities. 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.

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 the fiscal year 2021/22 CNCP projects and adjust the scope of work to include climate resilience measures.

Island Health contributed to a provincial health authority initiative for establishing [Resilience Guidelines for Health Facility Design and Operations](#). These guidelines have been adopted and are being used in developing business cases and procurement documents for new projects.

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

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.

In 2021, the Energy, Environment and Climate Change department completed a study at Nanaimo Regional General Hospital, reviewing the use of once-through-cooling practices at three locations within the facility. The result of the study produced feasible technical solutions that would significantly reduce water use. A moderate capital investment will be required to execute the changes.

Waste Reduction

Island Health is advancing sustainability best practices by reducing waste and moving towards a greener supply chain. In 2019, Provincial Health Services Authority (PHSA) Supply Chain introduced new environmental fields to the province-wide Product Investigation Portal. Health authority staff are able to submit product concerns related to excess packaging, recyclability and other environmental issues.

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 early 2021, the 4th floor South Unit at the Royal Jubilee Hospital made the transition to reusable Level 2 Gowns. The pandemic intensified the risks associated with a volatile supply chain and also significantly increased the volume of personal protective equipment (PPE) waste being generated by single-use PPE. Reusable gowns addressed the need for consistent availability of gowns for staff protection and a growing urge to eliminate waste and reduce organizational exposure to supply chain challenges. The reusable gowns can be washed 75-100 times and inspections at the laundry facilities ensure they maintain infection control requirements. Studies show that reusable gowns use less water and energy, and emit less carbon emissions over their lifetime in comparison to single-use gowns.

Public Electric Vehicle Charging Stations

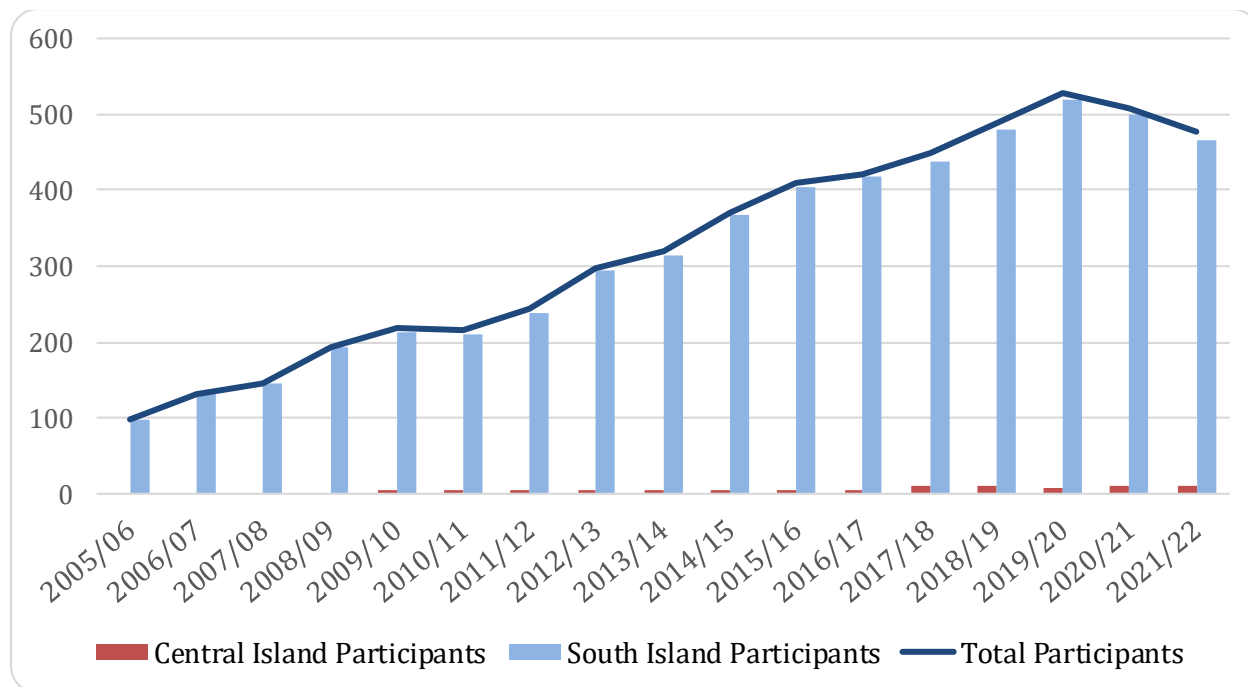
Emissions from public vehicles are out-of-scope; however, the health authority recognizes the negative health impacts associated with pollution. Island Health has Level 2 electric vehicle charging stations at

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, offering employees subsidized BC Transit ProPass enrollment and providing an inter-site shuttle between two major hospitals in Victoria. In 2021/22 ProPass enrollment declined 6.5% following a 3.5% decline in 2020/21. Results have been significantly affected by COVID-19 closures, and distancing protocols. Shuttle services have remained closed since March 2020.

Figure 5: Island Health’s BC Transit ProPass Participation



End of report.