



island health

2015 Carbon Neutral Action Report

Vancouver Island Health Authority, May 30, 2016



Executive Summary – Island Health 2015

2015 was the warmest year on record beating out previous warmest years recorded in the twenty-first century. The changing climate is causing some troubling weather events affecting our communities. Fortunately the world leaders have agreed to limit greenhouse gas emissions to hold global warming to 2°C, or better yet 1.5°C, by the end of the century. Unfortunately only a few months after that agreement was reached the global average temperatures passed the 1.5°C mark in February of 2016. While the governments of the world try to figure out how to do this we can look at British Columbia's Greenhouse Gas Emissions Reduction Act legislated in 2007 as an example of the type of changes needed. Island Health, being a public sector organization, has been part of the Carbon Neutral Government Program and has achieved reductions that would likely not have occurred otherwise.

When Island Health started the journey of being carbon neutral with a commitment to reduce emissions in 2010 the task seemed daunting. By developing a strategic plan for emissions reduction Island Health has had lower greenhouse gas emissions each year since 2011 – even though the organization continues to grow. With four years remaining to implement projects that will impact our 2020 emissions, achieving the target is within reach. The commitment to reduction and the solid business cases that reduction projects deliver has made being carbon neutral not only a good environmental commitment but a solid economic decision that will reduce the cost of the delivery of health care.

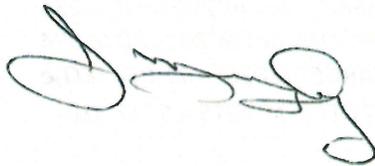
There is a continual need to balance the funding for organizational priorities at Island Health. Initiatives that will improve the delivery of care take priority for investments. Through safety and quality improvements and focusing on treating people in the community, rather than acute care settings, more people can receive excellent health care. Initiatives include implementing iHealth (transformation of patient information and medical history into a single electronic record available to the patient and all care providers); increasing opportunities for surgical access; and developing primary care homes.

Where it is possible emissions reductions are included as part of major capital investments especially infrastructure renewal to replace aged assets. The construction of the new North Island Hospitals is an example where health care delivery is being improved for the community while also improving sustainability. The new facilities will have 75% to 80% lower greenhouse gas emissions than the smaller facilities they are replacing. This is a significant achievement and even more so as it was accomplished with existing technology and within the project budget.

To date most of the emissions reductions have been achieved through infrastructure renewal and incorporating heat recovery within existing facilities. Working with the Facilities Maintenance and Operations Department, efficiencies are found by conducting energy studies of existing buildings. General Support Services has implemented initiatives to reduce emissions from laundry, increase recycling rates and reduce food waste Capital Design and Construction incorporates energy conservation, greenhouse emission reduction and sustainability principals into the renovations and additions that are carried out within Island Health facilities.

The efforts of the projects implemented by these departments to date are the backbone of our emissions reductions.

Renewal of our large boiler plant at Nanaimo Regional General Hospital remains a prime opportunity by switching one of the several boilers to biomass technology. This requires a greater initial investment but provides significant reductions in operating costs and greenhouse gas emissions. We look forward to moving to the next phase of planning for this project. The efforts and achievements Island Health and other organizations within British Columbia have made in reducing greenhouse gas emissions are an example to the world that emissions reductions are possible and often provide many co-benefits including reduced operating costs.



Joe Murphy
Vice President, Planning and Operations Support



Overview

Island Health provides health care to residents on Vancouver Island, the islands of the Salish Sea, and the mainland communities north of Powell River and south of Rivers Inlet. We are a diverse region serving a diverse population. Providing health care over this wide geographic area requires many buildings dispersed across the region. Facilities are the largest source of greenhouse gas emissions for the health authority. Some *quick facts* about Island Health's greenhouse gas emissions:

ISLAND HEALTH QUICK FACTS...

FACILITIES = 221 Buildings
BUILDING AREA 2014 = 550,000 m²
INCREASE IN AREA SINCE 2007 = 9.4%
LEED GOLD, FACILITIES = 3 Buildings
LEED GOLD, BUILDING AREA = 50,935 m²
STAFF FULL TIME EQUIVALENT 2015 = 12,211

GHG EMISSIONS OFFSET (2014) = 30,944 tCO₂e
GHG EMISSIONS OFFSET(2015) = 28,015 tCO₂e
GHG REDUCTION SINCE 2014 = 2,929 tCO₂e
GHG EMISSIONS per m²2007 = 0.06234
GHG EMISSIONS per m²2015 = 0.05094
EMISSIONS TARGET (2020) = 21,060 tCO₂e
PAID IN CARBON OFFSETS 2015 = \$737,310

Commitment

Island Health Executive and the Board of Directors (the Board) remain committed to achieving a 33% carbon emissions reduction from 2007 levels by 2020 and are fully supportive of energy conservation programs and sustainability.

The *Greenhouse Gas Reduction Targets Act* states that greenhouse gas emissions should be 33% below 2007 levels by 2020. In 2011, Island Health's emissions peaked at 35,226 tCO₂e due to the addition of the Patient Care Centre in Victoria. Since this peak, Island Health's emission levels have decreased by 20%.

By 2020 Island Health's emissions will need to be 21,060 tCO₂e or 6,955 tCO₂e below 2015 levels. This will require Island Health to cut emissions each year by an average of 1,739 tCO₂e per year. Projects underway in 2016 will reduce emissions by 1,800 tCO₂e. That leaves 5,155 tCO₂e to reduce before 2020 and will require that any new growth beyond what is currently planned is net zero emissions.

Challenges for Island Health Meeting GHG Reduction Commitment:

Emissions Reduction Projects – Average emission reductions resulting from Energy Conservation projects is **1,094 tCO₂e per year** over the past 3 years.

Costs – Average cost to reduce emissions has been **\$3,700/tCO₂e** for Island Health.

- Average funding to date has been **\$2,544,473/year** investment (past 3 years).
- Investment required **to meet 2020 target \$12,000,000/based on 5 Year Plan**

Alternate Energy Technology – Biomass is the alternative energy that will provide hospitals with a reliable locally available fuel and reduce emissions capital investment cost per tonne to **\$1,667/tCO₂e**.



Greenhouse Gas Emissions Reporting and Offset Purchase

Statement of 2015 Emissions and Previous Year Comparison

Internal data collection processes are in place to identify all sources of carbon emissions as defined by the *Greenhouse Gas Reduction Targets Act*. A methodology document is produced each year outlining the reporting and self-certification process. This year is our fourth year of self-certification. Island Health has reported on carbon emissions using the BC Government's SMARTTool program and started offsetting emissions in 2010. Our total emissions to offset, from all sources, are as follows:

<i>Emission Source</i> [tCO ₂ e] ¹	2010	2011	2012	2013	2014	2015
<i>Fleet</i>	922	901	878	892	911	845
<i>Office Paper</i>	831	747	717	714	691	706
<i>Buildings Owned & Leased</i>	31,241	33,631	32,874	30,517	29,448	27,328
<i>Total Emissions</i>	32,994	35,279	34,469	32,123	31,050	28,879
<i>Carbon Neutral or Offset Exempt Emissions</i>	55	53	46	47	56	865
<i>Total Emissions to Offset</i>²	32,939	35,226	34,423	32,076	30,994	28,014

² Reported May 19, 2016 in SMARTTool

Due to usage of biodiesel and renewable natural gas, 865 tCO₂e are offset exempt. Buildings are the primary source of greenhouse gas emissions accounting for 94.6% of total emissions. Island Health has determined its consumption of fugitive gas (i.e. leaks from pressurized equipment) is less than 1% of the overall emissions and is disproportionately onerous to collect data. For this reason, these gasses have been deemed out of scope. Please see Appendix A for the Emissions Report from SMARTTool.

Statement of Adjustments to Reported Greenhouse Gas Emissions and Offsets

Following the public release of Island Health's 2014 Carbon Neutral Action Report, corrections were made due to the end of calendar year billing and corrections to data. This resulted in an increase to 2014 emissions requiring offset purchases; changing from 30,922 tCO₂e to 30,994 tCO₂e. Overall these adjustments resulted in an increase to the emissions requiring offset purchase of an additional 73 tCO₂e. The following table shows the changes as well as the total cost of adjustments.

Year	Adjustment [tCO ₂ e]	Emissions After Adjustment ²	Emissions Previously Reported ³
2014	73 ¹	30,994	30,922
Total Adjustments	73	Emissions as of May 2016	
Cost Adjustment	\$1,916.25	(73x \$25/tonne) x (5% GST)	

¹Rounding adjustment ²As invoiced on 05/17/16: ³From 2014 Carbon Neutral Action Report, May 2015

Carbon Neutral Government

For 2015, Island Health purchased \$737,310 in offsets from the Ministry of Environment Climate Action Secretariat in order to be Carbon Neutral. The payment includes \$700,375 for 2015 emissions, \$1,825.00 in adjustments for 2014 and \$35,110 in GST. The offset payments provide incentives to greenhouse gas reduction projects within British Columbia that would otherwise not have been completed. These projects support British Columbia's green economy and provide social, environmental and economic benefits to all British Columbians. At \$25 per tCO₂e, this investment provides a cost effective means of reducing British Columbia's greenhouse gas emissions. The 2015 Offset Portfolio can be found at [CNG Annual Offset Report](#).

In 2014 the government also announced the Carbon Neutral Capital Program would be extended to the Ministry of Health and this program continued in 2015 and 2016. The result has provided Island Health with capital intended to be spent directly on greenhouse gas emissions reduction projects.

Operational Changes in 2015

The following table tracks the net new space added to Island Health's building inventory since 2007.

Net New Space Added or Removed Since 2007 as of December 2014	Year	Area square metres
Decommissioned – Bay Pavilion, Royal Jubilee Hospital Campus	2007	-2,232
Nanaimo Regional General Hospital Perinatal Department	2008	2,189
Victoria General Hospital Emergency Department	2009	1,660
Port Hardy Hospital Multilevel Care Beds	2009	499
Royal Jubilee Hospital Energy Centre	2009	218
Nanaimo Regional General Hospital Renal Department	2010	1,109
Cowichan District Hospital Pharmacy	2010	152
Cowichan District Hospital Island Medical Program	2011	219
Royal Jubilee Hospital Patient Care Centre	2011	41,139
Decommissioned – South, East and Centre Block RJH Campus	2012	-9,130
Nanaimo Regional General Hospital Emergency Department	2012	6,179
Cowichan Lodge Psychogeriatric & Tertiary Care Facility	2012	603
Saanich Peninsula Hospital Operating Rooms	2012	827
Decommissioned - Campbell River Home and Community Care	2013	-517
Oceanside Health Centre	2013	3,436
Port Hardy Primary Care Centre	2014	475
Nanaimo Estevan Road	2014	1,124
	TOTAL NET NEW	46,854

Fleet and Paper

Emissions from fleet were 845 tCO₂e down from the peak in 2010 of 922 tCO₂e. Paper emissions have remained below 2010 levels through device consolidation, double sided printing and going paperless for many processes. Emissions from paper for 2015 were 706 tCO₂e.

For a year to year comparison, refer to the chart in the Statement of 2015 Emissions and Previous Year Comparison section above. For a percentage breakdown by emissions type refer to Appendix for Vancouver Island Health Authorities Greenhouse Gas Emission Source report from SMARTTool for 2015.

In Scope Emission Reduction Activities 2015

Single Site Reduction

The project that had the largest emission reductions for 2015 was the Victoria Regional Laundry that had heat recovery wheel devices installed on the ten commercial dryer exhaust and air intake vents. Instead of the hot air being expelled to the outside, the wheels capture heat from the dryer exhaust and use it to preheat the incoming air. This heat recovery product had never been used in Canada so General Support Services funded a pilot to confirm the savings. The device worked so well that it took less time to dry the loads, in effect allowing one extra load per shift to be processed.

This project has the largest single source emission reduction reducing 357 tCO₂e of greenhouse gas emissions which is close to the amount of emissions from 75 homes. The project was funded from the Carbon Neutral Capital Project funding (see Appendix for full story).

Summary of Reduction Measures for 2015

The following table is a summary of the various projects that were completed in 2015/16 fiscal year and the associated GHG emissions reduction, savings, cost and payback:

Project Type	GHGs Avoided [tCO ₂ e/yr]	Total Annual Cost Savings [\$]	Total Costs [\$]	Incremental Costs [\$]	Payback on Incremental Cost [yrs]
Boiler & Heating Plant Upgrades	85.18	\$ 39,675	\$ 941,351	\$ 491,469	12
Continuous Optimization	93.60	\$ 40,542	\$ 99,167	\$ 99,167	2
Lighting & Electrical Savings Projects	1.03	\$ 2,585	\$ 50,000	\$ 5,000	2
HVAC Conservation Measures	62.11	\$ 27,176	\$ 214,000	\$ 214,000	8
Energy Efficient Equipment	97.88	\$ 109,575	\$ 50,000	\$ 50,000	0
Heat Recovery Project	430.50	\$ 136,250	\$ 932,000	\$ 932,000	7
Green Teams 2% of Site Consumption	189.36	\$ 90,719	\$ 12,000	\$ 12,000	0
2015/16 Total	959.67	\$ 446,521	\$ 2,298,518	\$ 1,803,636	4

The total cost is the cost required to replace existing infrastructure or equipment plus the incremental cost. Incremental cost is the extra cost to achieve a higher efficiency from the equipment being replaced such as mid-efficient boilers being replaced with high efficiency boilers. Payback is based on incremental cost divided by total annual cost savings. For energy efficient upgrades that are new additions to the existing infrastructure the total cost equals incremental costs.

From the projects above the carbon neutral capital project funding provided \$828,505 resulting in annual emissions reductions of 525 tCO₂e/ year and annual operational cost avoidance of \$172,639.

In Scope Emission Reduction Activities- 5 Year Plan

Emission Reduction is Possible

The majority of Island Health's carbon emissions come from buildings. A strategic reduction plan has been put in place to reduce those emissions. The plan focuses largely around energy conservation for existing buildings but includes reduction strategies for new construction where there is significant opportunity.

Energy Management in Existing Buildings

As reported in previous Carbon Neutral Action Reports, Island Health has been conducting energy management activities for the past several years. In 2015 we invested \$2.5 million of which \$828,505 was from the Carbon Neutral Capital Program (CNCP). The total investment resulted in 960 tCO₂e GHG reduction. To meet our 2020 target, we will need to reduce our emissions by 6,955 tCO₂e. The projects underway for 2016 will yield 1,800 tCO₂e reductions leaving 5,155 tCO₂e to be reduced over the next 3 fiscal years. That is an average reduction of 1,718 tCO₂e per year.

Past projects indicate that energy conservation measures result in greenhouse gas reductions. On average annual GHG savings is approximately 1,094 tCO₂e per year and requires an investment of approximately \$3,700 per tCO₂e. Projects include zoning, retro-commissioning, heat recovery, domestic hot water system upgrades, boiler plant upgrades and building control systems optimization. Based on the 5 Year Plan, if Island Health is to meet its greenhouse gas reduction targets, an investment of \$12,000,000 million is required before 2020. Investment in a single biomass boiler at NRGH will provide half of the required emissions reduction for \$5,000,000 or \$1,667 per tCO₂e of annual emissions reduction.

As noted above it is costly to the organization to reduce GHG emissions through energy conservation measures alone. Using a biomass boiler at one site provides a significant reduction in the capital investment and yields higher operational savings. These systems also provide resiliency through the use of locally supplied fuel source. Having said this all greenhouse gas emission reduction projects have provided significant utility cost savings and reasonable paybacks.

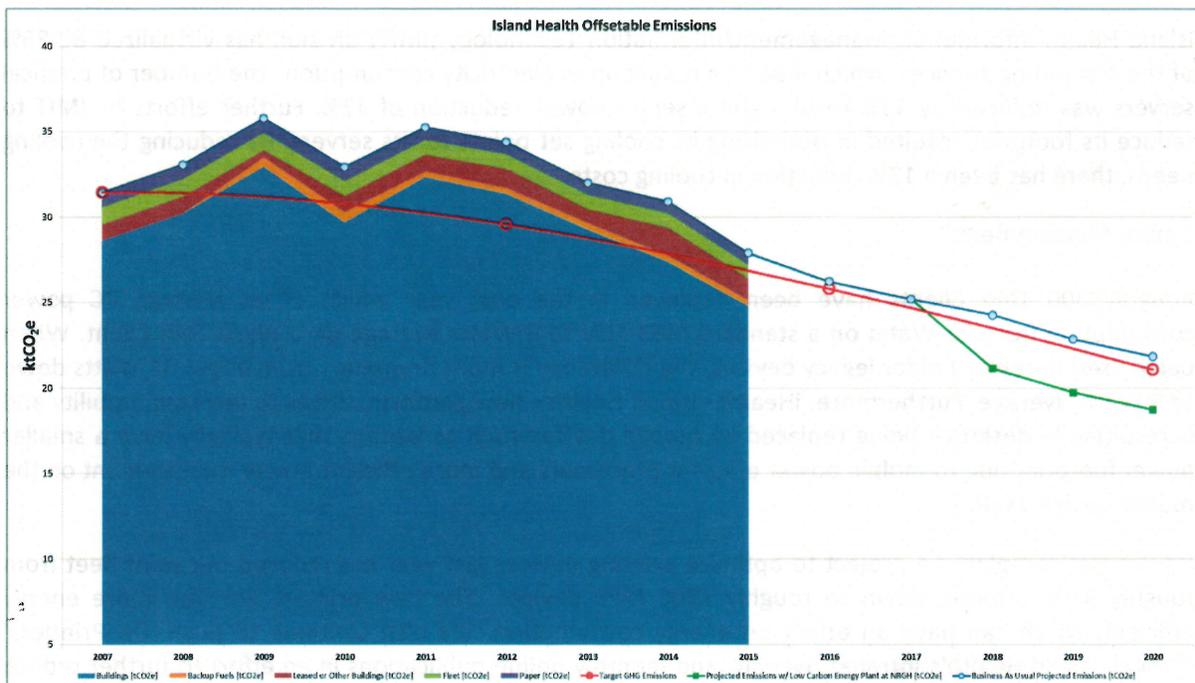
New Construction

New construction provides a great opportunity to improve a building's greenhouse gas emissions performance as well as to include adaptive strategies for the changing climate. Island Health has ensured that new buildings are as environmentally sustainable as possible by requiring the facilities be constructed to LEED® Gold standards. Energy and greenhouse gas emission goals are achieved by requiring that the facility is enrolled in BC Hydro's and FortisBC's New Construction Whole Building Program thereby receiving technical input and incentives for energy conservation measures. Emissions reductions are assured by providing aggressive energy targets for the facility.

The new hospitals under construction in Comox and Campbell River are expected to emit 75% to 80% less greenhouse gas emissions than the existing facilities while providing larger modern facilities. This is exciting as it proves that significant reduction targets can be met with existing technology and construction methods. New construction will become more efficient as new building codes and technologies are adopted.

Island Health Emissions Reductions from 5 Year Plan and Biomass Boiler

The impact of the biomass boiler is demonstrated in the graphical representation below of Island Health's Five Year Plan. The red line represents Island Health's target emission to meet the 33% reductions by 2020, the blue line represents business as usual case including energy conservation, and the GREEN line represents the potential impact of a low carbon energy plant at Nanaimo Regional General Hospital.



Island Health Annual GHG Emissions, Targets and Projected Emissions to 2020

Initiative to Reduce Provincial Emissions and Improve Sustainability

To become sustainable, efforts must be made throughout the organization. Some of the notable actions taken in 2015 include:

Linen Utilization

Island Health Environmental Support Services has several initiatives to reduce in scope as well as out of scope greenhouse gas emissions and minimize the impact on the environment. Projects include an initiative to actively reduce linen utilization by liaising with clinical staff to manage linen effectively and encourage best practice. There was a measurable reduction in linen utilization at the pilot site during fiscal year 2015-16.

Composting

Organic composting has been expanded to the kitchens at several Island Health facilities, including: Aberdeen Hospital, Mount Tolmie Hospital, Glengarry Hospital, Gorge Road Hospital, Priory Hospital, and the Queen Alexandra Centre for Children's Health. In 2015 coffee and food retailers in South Island Facilities began separating and recycling organic kitchen waste. Participating retailers include Tim Horton's, Good Earth, 2Mato, and Subway.

IMIT

Island Health Information Management/Information Technology (IMIT) division has virtualized 80-85% of the computing services, which lead to a reduction in electricity consumption. The number of physical servers was reduced by 43% resulting in a server power reduction of 32%. Further efforts by IMIT to reduce its footprint resulted in optimizing its cooling set points for its servers. By reducing the cooling needs, there has been a 12% reduction in cooling costs.

Device Management

Roughly 300 Thin Clients have been deployed in the past year which offset average PC power consumption from 22 Watts on a standard M93 Tiny to 9 Watts average on a Wyse Thin Client. When being used to replace older legacy devices, the difference is more dramatic - from about 31 Watts down to 9 Watts average. Furthermore, iHealth - Island Health's new platform, drives to increase mobility and is resulting in desktops being replaced by mobile devices such as laptops that typically have a smaller power footprint due to mobile power efficient processors and more efficient power management on the mobile device itself.

Having just completed a project to optimize printing devices last year has reduced our print fleet from roughly 3700 printers down to roughly 1900 MPS devices. The new printers are also more energy efficient, which can have an effect on energy consumption. We also continue to push 'Dr. Printless' through Island Health's intranet, weekly, and monthly online publications in an effort to further reduce paper use.

Packaging Waste Management

Responding to lessons learned from the first iHealth equipment order that consisted of 5,000 individual boxes and related packaging waste, Island Health has included pre-build requirements for subsequent orders that reduced the overall number of boxes and packaging waste to approximately 1,580. That is a reduction of 3,420 boxes and packaging waste.

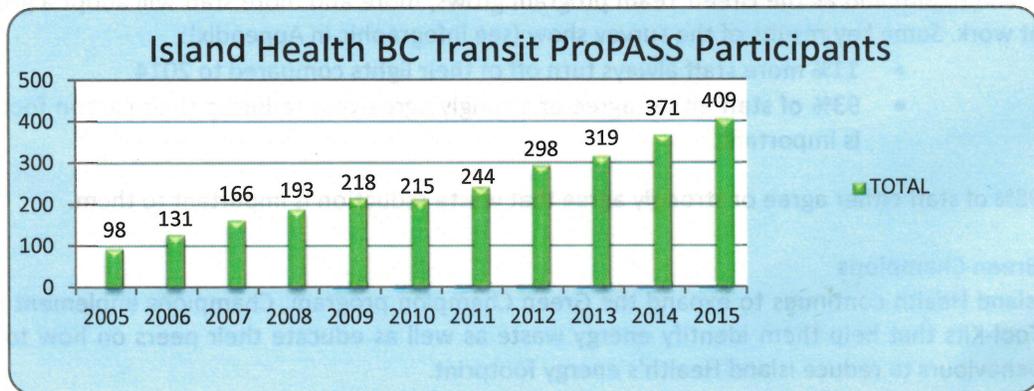
Transportation Demand Management

Island Health Parking Services (PS) has identified strategies that support a healthy alternative for employees to arrive at Island Health facilities and contributed to Island Health being selected as one of Canada's Top 100 Employers and Greenest Employer in 2016. Initiatives include the following:

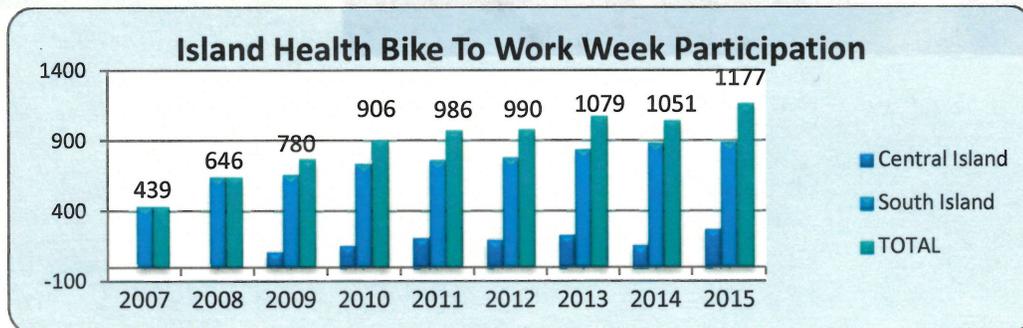
1. BC Transit - Public transportation routes which transport patients and staff directly to Royal Jubilee Hospital campus, Victoria BC.
2. Enhanced Shuttle - Island Health offers shuttle services to staff who work in multiple locations.

3. BC Transit Employee Subsidized ProPASS Program:

- Island Health provides permanent full time employees a subsidized annual bus pass through the BC Transit ProPASS program. The table below details the number of employees using the program since 2005 showing a steady increase in participation



- The bus pass is paid through payroll deductions at a 35% annual savings compared to an employee general parking permit. *Propass participation is up 15% since 2014.
4. Rideshare Parking/Formal Carpool Program – Island Health promotes ridesharing between staff and offers dedicated parking stalls for employees at participating sites, reduced parking fees and a guarantee of a ride home in case of emergency.
5. Bike To Work Week - BTWW participation is a strong reason why employees now bicycle year round to our facilities. Employee participation since 2014 has increased 12% and more than 250% since it had started in 2007. See the following graphical representation of the results:



6. **Bicycling Storage Facilities** - There is bicycle storage capacity (Victoria BC region and NRGH Pay Parking Facilities) for over 1100 bicycles at Island Health as well as plug-in for electric bicycles.
7. **E-Charging Stations for Vehicles** – Island Health hosts EV charging stations at 2 facilities.

Behavior Change

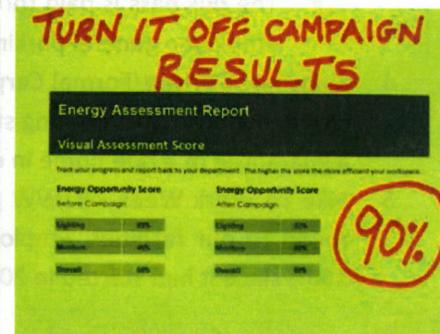
The annual Green Survey, of which 19% of the entire staff population completed in 2015, monitors employee's participation and attitude towards environmental sustainable activities. The results from the 2015 survey show that staff are continuing to make more energy conscious choices and are more aware of Island Health's goals in terms of sustainability. It is clear that a green culture is growing at Island Health and as the Green Team program grows, more and more staff will adopt a greener lifestyle at work. Some key results of the survey show (see infographic in Appendix):

- 11% more staff always turn off of their lights compared to 2014
- 93% of staff either agree or strongly agree that reducing their carbon footprint at work is important.

98% of staff either agree or strongly agree that waste reduction is important to them.

Green Champions

Island Health continues to expand the Green Champion program. Champions implement departmental Tool-Kits that help them identify energy waste as well as educate their peers on how to change their behaviours to reduce Island Health's energy footprint.



Conclusion

In the past five years Island Health has:

- become carbon neutral by purchasing carbon offsets;
- established an emissions reduction target;
- planned, invested and implemented reduction measures; and
- developed an achievable five year plan to take the organization to 2020.

Island Health has continued for the second year to achieve emissions reductions below 2007 levels. However, there are still many opportunities to become an environmentally sustainable organization less reliant on fossil fuels and with a more diversified energy supply. Many employees are working hard to minimize waste and find better ways to deliver health care that are not as resource intensive yet also provide better service to patients and the communities served.



Laundry Project Supports Sustainability by Reducing Carbon Emissions & Costs

Although Island Health's Victoria Regional Laundry (VRL) has already implemented several green initiatives (such as eco-friendly soaps), laundry manager Jim Munro suspected the 20 year old facility had considerable energy saving opportunities. VRL is one of the largest hospital laundries in BC and their staff of 35 daytime employees process laundry for health care facilities from Ladysmith south. Special care is taken to ensure linen products are sanitized to hospital standards and meet non-allergic and other requirements. Island Health's Energy Efficiency and Conservation team confirmed that the two laundries combined are the fourth largest user of natural gas in the organization and enrolled the site into FortisBC's Commercial Custom Design Program. The resulting energy study identified heat from the dryer exhaust was a major opportunity and would dramatically reduce natural gas and carbon emissions while qualifying for FortisBC rebates.

Dryer Heat Recovery

Heat recovery wheel devices were installed on the roof and placed between each of the ten commercial dryers' exhaust and air intake vent. Instead of expelling the dryers' hot air to the outside, the wheels capture heat from the dryer exhaust and use it to preheat the incoming air. This heat recovery product had never been used in Canada so General Support Services funded a pilot to confirm the savings. The device worked so well that it actually took less time to dry the loads, in effect allowing one extra load per shift to be processed.

Success Story

Out of a dozen sites studied, the dryer heat recovery project was the single largest opportunity for reducing natural gas, costs and carbon emissions. The project was successful for several reasons; foremost was the Carbon Neutral Capital Program (CNCV) that provided funding which made this project possible. Other key factors were the knowledge and can-do attitude of the VRL facilities team; and the collaboration between the various stake-holders such as Facilities Capital Construction (FCC) who were the Project Managers, General Support Services who operate the laundry, the Energy team and FortisBC.

Environmental Benefits

It's important to have a good partnership and ample communication with the various stakeholders. The VRL team were so highly skilled in dryer calibration and the software used to run the laundry equipment that many potential pitfalls were avoided. Through FCC's skillful management, the project came in on time and is on track to meet the energy study's estimate of a 20% reduction in natural gas use, with corresponding emissions and costs reductions.

The dryer heat recovery project is expected reduce

357 tonnes

of GHGs per year or equivalent to reducing enough natural gas to heat 75 homes annually.



Laundry Project Supports Sustainability

The Canadian dollar dropped about 35% against the US dollar after the project approval date and the final cost of the equipment was unavoidably higher than expected. The project implementation ran smoothly – thanks to the endeavours of the VRL team and FCC. With the positive results confirmed from the VRL project, a similar heat recovery project is being planned for Cumberland Laundry which services facilities in the central/north.

By adding heat recovery to the dryers we anticipate saving an estimated 7,146 GJ of natural gas annually - or enough to heat 75 homes for a year. Once performance is confirmed we'll qualify for FortisBC incentives.



Our Largest Carbon Emission Reduction for 2015

This project was our largest single source emission reduction for 2015 reducing 357 tonnes of carbon and avoiding an estimated \$8,931 in carbon offset fees annually. Island Health is still in the early stages of benefitting from this project and will save energy and emissions every day going forward. When you consider these new energy measures added to existing green initiatives and water efficiency, the Victoria Regional Laundry may very well be one of the most efficient and sustainable commercial laundries in the province!

This project is just one example of the many ways Island Health is working behind the scenes to help make health care more sustainable...for healthy people, healthy communities and a healthy planet.

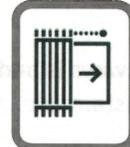
Greening Care Green Survey Results 2015

Sustainability is important - and we have made progress - but there's still a lot of room for improvement in taking action. In 2014 we emitted 29,350 tonnes of carbon from our buildings and reduced emissions by 6% (from 2007 baseline). Let's do more.

Employees' Sustainability Values

- 
93% of staff believe reducing our carbon footprint at work is important
- 
68% agree energy conservation is part of Island Health's mandate
- 
93% of staff recycle at work if contaminated it will be thrown out. To learn more visit the green intranet site: <https://intranet.viha.ca/green>
- 
71% feel environmental concerns are important when making daily decisions at work (such as purchasing materials)

Opportunities for Action

- 
39% turn off computer monitors when away from their desks
Some are unable to be turned off due to the need to access patient records
- 
33% of staff have taken steps to use less laundry at work
- use a mop or rag for spills
- 
50% use the blinds to keep heat in during the winter and out during the summer
- 
33% unplug electrical equipment
...when it's safe to do so and does not impact patient care

Sustainability Facts

- 
95% of our emissions come from heating buildings and making hot water
- 
33% Island Health is trying to reduce emissions 33% by 2020
- keep heat/air conditioning in; if you must open a window remember to close it
- 
66% of staff use less paper at work
- buy wheat paper or recycled instead of virgin paper
- 
33% 1,200 staff read a Green Tip
- For green tips visit: <https://intranet.viha.ca/green>



"We are all part of the green team!"

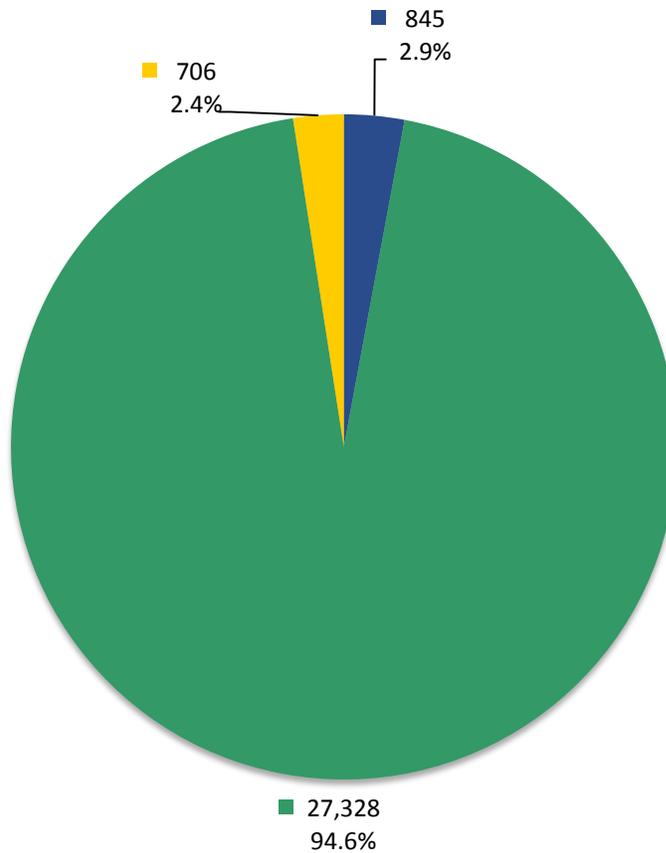
Thank you to our funding partners



Green Team



Vancouver Island Health Authority Greenhouse Gas Emissions by Source for the 2015 Calendar Year (tCO₂e*)



Total Emissions: 28,879

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2015 (Generated May 25, 2016 9:44 AM)

Total offsets required: **28,015**. Total offset investment: **\$700,375**. Emissions which do not require offsets: **865** **

*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.

** Under the *Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act*, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.

2015 Carbon Neutral Action Report Survey

Organization Name:

Vancouver Island Health Authority (Island Health)

Please select your sector:

- Health Authority or Affiliate

1) Stationary Sources (Buildings, Power Generators, Ext. Lighting) Fuel Combustion, Electricity use, Fugitive Emissions:

Please indicate which actions your PSO took in 2015:

Have developed an overall strategy/plan to reduce energy use in your organization's buildings inventory:

Yes

If Yes, please describe:

The greenhouse gas emissions reductions has come from:

- 1. heat recovery projects,*
- 2. green teams and green champions,*
- 3. HVAC zoning and isolation projects,*
- 4. condensing boilers replacing end of life conventional boilers*
- 5. kitchen demand ventilation*
- 6. continuous optimization of HVAC systems*

Undertook evaluations of building energy use:

Yes

Performed energy retrofits on existing buildings:

Yes

Built or are building new LEED Gold or other "Green" buildings:

Yes

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from buildings:

Yes. Oceanside Health Centre was certified LEED Silver on February 26, 2016.

North Island Health Projects are targeting LEED-HC Gold certification and are under construction. The two hospitals were registered in the BC Hydro New Construction Program and given an energy and greenhouse gas emissions reduction target. The design should provide a greenhouse gas emissions reduction of 80% below the existing .

Our two largest facilities purchase a small percentage of renewable gas from FortisBC.

2) Mobile Sources (Fleet, Off-road/Portable Equipment) Fuel Combustion:

Indicate which actions your PSO took in 2015:

Have put in place an operations policy/program to support systematic reductions in fleet related emissions:

(e.g., program to convert fleet to renewable fuels)

No

If Yes, please describe:

(No response)

Replaced existing vehicles with more fuel efficient vehicles (gas/diesel):

Yes

Replaced existing vehicles with hybrid or electric vehicles:

No

Took steps to drive less than previous years:

Yes

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from fleet combustion:

Replacing older units with new or near new..

3) Supplies (Paper):

Indicate which actions your PSO took in 2015:

Have put in place an operations policy/program to facilitate a systematic reduction in paper-related emissions:

(e.g., policy to purchase 100% Recycled Content; default to double-sided printing)

Yes

If yes, please describe:

Double-sided printing defaults IMIT controls the print devices. HSSBC sets the paper purchasing policies.

Have put in place an operations policy/program to facilitate behavioural changes from paper use:

(e.g. awareness campaign to reduce paper use):

Yes

If yes, please describe:

Organization wide campaigns to promote double sided printing or alternatives to using paper such as paperless meetings and electronic documents.

IMIT has set print devices to default double sided printing wherever possible.

Dr. Print Less Campaign in place.

Promoting the use of ePay rather than paper pay statements

A self-directed toolkit focusing on paper use reduction and promoting 100% recycled or wheat paper use.

Used only 100% recycled paper:

No

Used some recycled paper:

Yes

Used alternate source paper:

(e.g., bamboo, hemp, wheat etc.)

Yes

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from paper supplies:

Large scale trial of Social Print brand wheat paper. Accepted for use by IMIT

1.) ePay - Island Health implemented Electronic Paystubs or "ePay" in Jan 2015 and launched a campaign encouraging its 20,000 employees to sign up. Since then 15,000 employees have joined the ePay program and paystub printing has been reduced from 15,000 to 4,000 sheets every two weeks a reduction of almost 75%

2.) Island Health created a working group to look at the benefits and any issues with wheat paper, research other's experiences with it, confirm it is not an allergic issue with the Celiac Association, test the running of wheat paper on our multitude of printer devices and receive approval from our IMIT department to proceed, pilot wheat paper use at a small Long Term Care site, discuss with provincial purchasing representatives and other health authorities about including wheat paper as an option in future purchasing contracts.

4) Other Sustainability Actions:

Please note that this section is optional

Business Travel

Created a low-carbon travel policy or travel reduction goal:

(low-carbon = lowest emission of greenhouse gas per kilometer per passenger)

(No response)

Encouraged alternative travel for business:

(e.g. bicycles, public transit, walking)

Yes

Encouraged or allow telework/working from home:

Yes

Other:

Promoted staff participating in Bike to Work Week, carpooling, ride share, bus or walking to work. Also updated staff on sites that have Electric Car Charging Stations plus provided two Green Tips: "Maintain Tire Pressure" and "Walk to Work or Part Way to Work"

Education Awareness

Have a Green/Sustainability/Climate Action Team:

Yes

Supported green professional development:

(e.g. workshops, conferences, training)

Yes

Supported or provided education to staff about the science of climate change, conservation of water, energy and/or raw materials:

Yes

Other:

1) Collaborated with Island Health's General Support Services Department in preparation for a "recycling refresh" and a one year recycling Pilot at Victoria General Hospital. Collaborated with other health authorities and provided research, input and support for the refreshed recycling program with graphic materials (3 posters, signage for 4 recycling streams, webpage and help formatting the "Waste and Recycling Guide"). Participated in meetings with commercial waste haulers to learn of their issues accepting recycling items from medical facilities. Provided updates to Green Champions and helped address for redirect enquiries from general staff.

2) Published Green Tips in the staff newsletter included topics such as:

- Close the blinds to keep heat in/winter or out/summer
- Energy Star windows
- The choice between CFLs or LED light bulbs
- Phantom Loads (electricity)
- PowerSmart

Programmable Thermostats for Optional Heating

3) Stories in The Weekly newsletter:

- "Island Health Presented with Two Awards for Energy Efficiency" story was published in the staff newsletter reporting to employee that their efforts such as "Turn It Off" campaigns, combined with technological upgrades and other efforts have resulted in two awards to acknowledge major energy reductions (and carbon emission reductions).

4) Team member presented Best Practices for Energy Specialist to students at Douglas College, BC.

5) Shared case example of Laundry-Wise campaign with others at BC Hydro Energy Managers Forum

6) Provided Greening Care Tours to Green Team Sites that included a discussion around climate change and Island Health's emission reduction target. Nineteen Departments and 150 staff participated

7) Based on estimations through BC Hydro's Workplace Conservation Awareness Program the actions of the Green Teams and Green Champions have reduced emissions by 95 tCO₂e annually

Adaptation Planning for Climate Risks

Have assessed whether increased frequency of extreme weather events and/or long term changes in climate will affect your organization's infrastructure, its employees and/or its clients:

No

Have incorporated these anticipated changes in climate into your organization's planning and decision making:

No

Other:

Assessing one site and incorporating information for new construction

Other Sustainability Actions

Established a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models:

Yes

Have put in place an operations policy/program to facilitate the reduction and diversion of building occupant waste stream from landfills or incineration facilities:

(e.g., composting, collection of plastics, batteries)

Yes

Established green standards for goods that are replaced infrequently and/or may require capital funds to purchase:

(e.g., office furniture, carpeting, etc.)

No

Incorporated lifecycle costing into new construction or renovations:

Yes

Please list any other sustainability actions your organization has taken not listed above:

Check Kevin Greenest Employer Application

Health Environmental Support Services has a project to manage and advance linen utilization. An awareness campaign was launched to encourage clinical staff to manage linen effectively.. The linen use reductions as compared to the previous fiscal year fluctuated between -1.9% to -5.7% per period throughout last fiscal year and we are projecting a 3.0-4.0% overall linen consumption rate decrease. Linen use affects greenhouse gas emissions, water consumption, and chemical use a decrease has a significant positive environmental impact.

Environmental Support Services has expanded organics composting to the kitchens at several Island Health facilities, namely Aberdeen Hospital, Mount Tolmie Hospital, Glengarry Hospital, Gorge Road Hospital, Priory Hospital, and the Queen Alexandra Centre for Children's Health. Island Health has also begun separating and recycling organic kitchen waste from the coffee and food retailers in South Island facilities, such as Tim Horton's, Good Earth, 2Mato, and Subway.

Island Health Information Management/Information Technology, IMIT division has virtualized 80-85% of our computing services, which leads to a reduction in our electricity consumption. Also, the number of physical servers has been reduced by 43%, which has resulted in a server power reduction of 32%. Further efforts by IMIT to reduce its footprint resulted in optimizing its cooling set points for its servers. By reducing the cooling needs, there has been a 12% reduction in cooling costs.

Roughly 300 Thin Clients have been deployed in the past year which offset average PC power consumption from 22Watts on a standard M93 Tiny to 9 Watts average on a Wyse Thin Client. When being used to replace older legacy devices the difference is more dramatic from about 31Watts down to 9Watts average.

iHealth's, Island Health's new platform, drive to increase mobility is resulting in desktops being replaced by mobile devices such as laptops, etc that typically have a smaller power footprint due to mobile power efficient processors, more efficient power management on the mobile device itself.

Optimization of printing devices last year has reduced our print fleet from roughly 3700 printers down to roughly 1900 MPS devices; the new printers are also more energy efficient, which can have an effect on energy consumption.

Responding to lessons learned for the first iHealth equipment order that consisted of 5000 individual boxes and related packaging waste, we have included pre-build requirements that has reduced the overall number of boxes and packaging waste to approximately 1580. That is a reduction of 3420 boxes and packaging waste