



2012 Carbon Neutral ACTION REPORT



A document from the department of
Lower Mainland Facilities Management
Energy & Environmental Sustainability
the home of GreenCare



EXECUTIVE SUMMARY

IN THIS REPORT

Executive Summary _____	1
About PHSA _____	2
Changes in our Operations _____	3
Energy & Environmental Sustainability _____	4
2012 Green House Gas Emissions _____	5
Carbon Offsets _____	6
Green Buildings _____	7
Emissions Reduction Activities 2012 _____	8
Emission Reduction Goals 2013-2014 _____	10
Additional Resources _____	13



Lynda Cranston

President and Chief Executive Officer

Provincial Health Services Authority continues to integrate energy and environmental conservation values into work processes through an ecological perspective. In 2012, PHSA:

- Reduced our energy consumption by 0.6 GWh & 400 GJ
- Increased staff engagement through the Green+Leaders program and the new GreenCare Community website
- Decreased staff commuting, via single occupancy vehicles, through a Clean Commuter Challenge.

This year, we were proud to have opened BC Cancer Agency's Centre for the North in Prince George, which is anticipated to achieve LEED Gold certification. This sustainable facility was constructed to be a green, energy efficient building that will promote a healing atmosphere, while minimizing environmental impact.



Peter Goldthorpe

VP Capital Projects, Real Estate & Facilities

There is much evidence linking environmentally sustainable behaviours to healthy communities and ultimately to the health of the individuals we serve. As a provider of health services for the citizens of British Columbia...but also a material contributor to greenhouse gas emissions, we must demonstrate leadership and

continually seek ways to reduce our ecological footprint to improve population health. In other words, we must practice what we preach. To this end, our Energy & Environmental Sustainability team has created a strong vision for reducing the health sector's environmental impact. The 2012 Carbon Neutral Action Report highlights many of the initiatives that are currently underway to accomplish this goal.

Please join us in this quest to transform health care into a more environmentally-responsible sector focused on both human and environmental health. Please take a moment to check out our vision at the GreenCare Community website <bcgreencare.ca>. We welcome your feedback and your active participation!

ABOUT PHSA



The Provincial Health Services Authority is the only health authority in Canada that has a mandate to deliver specialized health services province-wide

We provide specialized health services

The Provincial Health Services Authority (PHSA) is a publicly funded health service provider in the province of British Columbia. Other health authorities in the province have a regional jurisdiction, but we're unique in Canada for being the only health authority having a province-wide mandate for specialized health services.

Operating nine provincial agencies

Our services are provided either directly through PHSA agencies or through funding or collaboration with regional health authorities. PHSA operates and manages nine well-recognized specialized agencies and two divisions:

- BC Cancer Agency
- BC Centre for Disease Control
- BC Children's Hospital & Sunny Hill Health Centre for Children
- BC Mental Health & Addiction Services
- BC Provincial Renal Agency
- BC Transplant Society
- BC Women's Hospital & Health Centre
- Cardiac Services BC
- Perinatal Services BC
- BC Emergency Health Services (incl. BC Ambulance Service)
- Health Shared Services BC

Voted Employer of the Year in 2008, 2011, and 2012

PHSA operates with an annual budget in excess of \$2 billion (CAD) and employs more than 13,000 staff. In October 2008, 2011 and again in 2012, PHSA was proud to be named one of BC's Top Employers by Mediacorp Canada Inc. This news was announced by The Vancouver Sun, The Province and the Victoria Times-Colonist.

Quick Facts

\$2 billion

Operating budget 2011/12

8,496 FTEs

Full time employees

1 FTE for projects

To improve our footprint

1 FTE to measure

Our energy/carbon use

13,000 staff

Full-time, part-time, casual

87 vehicles*

In our fleet

*Note that the number of vehicles was incorrectly stated in the 2011 overview report; however, the associated emissions were reported correctly.

"Climate change brings drought, floods, heat waves, and air pollution causing harm to human health. It is everyone's responsibility to be aware of their part in this and take steps to mitigate these impacts."

Dr. Graeme Duncan, FRCPC
Clinical Professor in Radiation Oncology, UBC
BC Cancer Agency

CHANGES IN OUR OPERATIONS

We created a new Energy & Environmental Sustainability group dedicated to reducing the environmental impact of all the Lower Mainland health authorities

Four health authorities are working together

Beginning in 2010, the following four health organizations began formally working together to manage and deliver administrative and clinical support services:

- **Fraser Health Authority (FHA)**
- **Providence Health Care (PHC)**
- **Provincial Health Services Authority (PHSA)**
- **Vancouver Coastal Health (VCH)**

This partnership allows us to consolidate operations across the four health organizations for greater efficiency, so our health care dollars can be effectively focused on patient care.

Facilities Management was one of the ten administrative and clinical support areas consolidated. Now, the new Lower Mainland Facilities Management team has a mandate that includes 27 acute care hospitals and 50 residential care facilities, which serve over 2.5 million British Columbians living in 37 municipalities and regional districts.

PHSA's Operations

PHSA's portfolio increased by almost 15% (43,000 m²) in 2012. This is due to a number of new leased sites and one new construction project (BCCA Centre for the North). The number of staff also increased by over 15% in 2012.

PHSA Operational Changes	2010*	2011*	2012
Distinct PHSA Buildings	64	66	70
% Owned**	79%	79%	71%
% Leased**	21%	21%	29%
Usable Square Meters	306,750	309,590	352,850
Full-Time Employee Equivalents [^]	8,886	8,458	9,758

* Note some values were updated from 2010 and 2011 based on more accurate information

** The percentages of leased and owned facilities are based on floor area

[^] Full-Time Employee Equivalents based on 1879.2 hours per FTE

Coordinating our Sustainability Work

Consolidation enabled the creation of an Energy & Environmental Sustainability (EES) group in 2010. This has presented new opportunities to coordinate our environmental and sustainability work across PHSA, FHA, VCH, and PHC.

Advisory Committees

Provincial Health Services Authority participates in two groups dedicated to collaborating on energy & environmental sustainability across the health care sector.

Environmental Sustainability Advisory Committee (ESAC)

The ESAC group is made up of key Health Authority leaders across the lower mainland. These individuals provide strategic council and decisions on energy & environmental sustainability issues within health care.

Provincial Environmental Tech Team (PETT)

The PETT group is made up of key stakeholders across all BC Health Authorities, the Ministry of Health, and the Climate Action Secretariat. These individuals provide strategic collaboration and sharing of best practices to enable more efficient energy & environmental sustainability work across the health care sector.

ENERGY AND ENVIRONMENTAL SUSTAINABILITY

We understand energy and environmental sustainability are important components of organizational, human and environmental health

Reducing our environmental impact

Our Energy & Environmental Sustainability (EES) group includes Energy Managers and Sustainability Managers tasked with reducing the waste and environmental impact of our health organizations.

It's the goal of this EES group to unite all four organizations in their commitment towards Economic Stewardship, Environmental Stewardship, and Health & Social Stewardship.

Increasing our staff's environmental stewardship

Provincial Health Services Authority is committed to reducing health care's impact on the environment, while increasing the health and wellbeing of British Columbians by maintaining the important link between health and the environment.

PHSA has endorsed an Environmental Sustainability Policy that includes a Vision Statement and Sustainability Conservation Goals, as well as our Strategic Framework and 10 Focus Areas.

Creating a conscious work culture

Mission Statement: Promote a health care community that is actively aware and engaged in creating sustainable and environmentally-conscious health care delivery.



GreenCare

GreenCare is the brand for all energy and environmental sustainability activities across the Lower Mainland health organizations. This includes work done through our EES group, our Green+Leaders staff champions, our recycling program, and through our online GreenCare community website www.bcgreencare.ca.

10 Focus Areas

Our EES group aims to create greater sustainability in ten key areas of focus:

1. Culture of Stewardship
2. Energy Conservation & Climate Neutral
3. Water Conservation & Restoration
4. Zero Waste
5. Active Transportation
6. Regenerative Design
7. Sustainable Procurement
8. Zero Toxicity
9. Healthy Land & Food
10. Transparent Reporting

Our Sustainability Goals*

	2015	2020
Energy Reduction	10%	20%
Green House Gas Reduction	15%	33%
Water Reduction	7%	10%
Alternate Commute Increase	10%	20%
Waste Diversion (Recycling) **	70%	80%
Staff Engagement (GreenCare)	40%	75%

* Targets use a 2009 baseline, except Green House Gas Emissions which uses 2007

** Goals aligned to Metro Vancouver targets



Facilities Commitment

Provincial Health Services Authority is committed to designing, constructing, and operating all new facilities to achieve LEED Certification and current best practices.

GREEN BUILDINGS

All new construction and major renovation projects are built to achieve a LEED (Leadership in Energy and Environmental Design) Certified Standard. In addition, some existing buildings have pursued BOMA BEST (Building Environmental Standards).

Two Buildings achieved BOMA BEST certification

- 520 W.6th Avenue, Vancouver
- 590 W. 8th Avenue, Vancouver

Two buildings achieved LEED certification

- BC Cancer Research Center (Gold)
- Child, Adolescent and Women's Mental Health Building (Silver)

Three building are pending LEED certification

- Children's and Women's Health Centre (CWHC) Clinical Support Building
- CWHC Centre for Translational Research
- British Columbia Cancer Agency Centre for the North in Prince George



Provincial Health Services Authority LEED Projects

LEED Project Name	City	Certification Date	Certification Level	Rating System	Status
Mental Health Building	Vancouver	11/3/2011	Silver	LEED-NC	Operational
BC Cancer Research Centre	Vancouver	7/22/2005	Gold	LEED-NC	Operational
CWHC Centre for Translational Research	Vancouver	n/a	TBD	LEED-NC	Operational
BCCA Centre for the North	Prince George	n/a	TBD	LEED-NC	Operational
CWHC Clinical Support Building	Vancouver	n/a	TBD	LEED-NC	Operational

2012 GREEN HOUSE GAS EMISSIONS

PHSA is committed to setting aggressive targets for the reduction of Greenhouse Gas Emissions

Our Goal: An 18% drop in GHG emissions by 2016

As a government funded organization PHSa must abide by the Provincial Government of British Columbia's *Greenhouse Gas Reduction Targets Act* (Bill 44), passed in 2007.

Under the Act, our Green House Gas emissions are to be reduced below our 2007 levels as follows:

- **18% by 2016**
- **33% by 2020**
- **80% by 2050**

The Act also laid the foundation for the *Emission Offsets Regulation* and the *Carbon Neutral Government Regulation*, both enacted in December 2008, which guides PHSa.

Our 2012 carbon footprint: 25,651 tCO₂e

The 2012 carbon footprint of PHSa has been calculated in accordance with the Greenhouse Gas Reduction Targets Act (as reported in SMARTTool), to be 25,651 tonnes. This represents a 9.6% increase over our 2011 footprint, largely due to a 10% net increase in building energy consumption. However, with a 15% net space increase, emissions per unit area are lower in 2012.

Our Carbon Footprint (in tCO₂e) ¹

	2010	2011 ²	2012
Mobile Fuel Combustion (Fleet & other mobile equipment)	195	181	204
Stationary Fuel Combustion & Electricity (Buildings)	20,079	22,302	24,609
Supplies (Paper)	891	912	839
Total Carbon Footprint (tCO ₂ e)	21,166	23,387	25,651
Emissions per Full-Time Employee	2.38	2.77	2.63
Emissions per Meter Square Facility Space	0.069	0.076	0.073
Weather (summarized in Heating Degree Days) ³	2,853	2,963	2,874

¹ It was estimated that Fugitive Emissions from cooling equipment comprise less than 0.01% of PHSa's total emissions and an ongoing effort to collect or estimate emissions from this source would be disproportionately onerous. For this reason, emissions from this source have been deemed out-of-scope and have not been included in our total greenhouse gas emissions profile.

² Carbon Footprint adjusted for 2011 in 2012, due to building data corrections from the Climate Action Secretariat.

³ Building energy consumption is heavily influenced by weather patterns. Heating Degree Days (HDD's) provide a summary of annual weather patterns (a higher value indicates a colder winter). HDD's listed are for Vancouver specifically, using a base temperature of 18 deg C.

"There are major health benefits from low carbon lifestyles, which can reduce obesity, heart and lung disease, diabetes and stress."

Prof. Anthony Costello, Institute for Global Health



Why our footprint increased

Fleet emissions increased due to improved procedures to enable capture and reporting of all fleet vehicle fuel purchases.

Emissions associated with Paper decreased due to changes to how paper is purchased and tracked; 2012 data reflects actual quantities dispatched to PHSa from the central warehouse.

In 2012
PHSA
was
carbon
neutral
for the
third year

CARBON OFFSETS



While we continue to work to reduce our carbon footprint, this year we purchased carbon offsets worth \$676,988.

Offsets applied to be carbon neutral in 2012

PHSA was carbon neutral in 2012. We achieved this through our commitment to reducing our in-scope emissions and by purchasing offsets.

The offsets, purchased from the Pacific Carbon Trust in 2012, for in-scope emissions, amounted to \$676,988. This figure is based upon the reported emission of 25,641 tCO₂e, plus an additional 149 tCO₂e from the 2011 reporting year, due to building data corrections.

Carbon Footprint since 2011

The reported emissions for PHSA have increased by about 9.6% in 2012, due primarily to a 10% net increase in building energy emissions. This increase is largely due to a change in the carbon accounting at Riverview Hospital; without which we would see a 3% decrease in PHSA's emissions despite increased leased and new construction space.

When looking at specific sites the impact of energy conservation efforts can be seen. For example, natural gas consumption at the Children's and Women's Health Centre (CWHC) campus decreased by 6% due in part to efficient central plant operations.

Our Carbon Offsets

	2010	2011 ¹	2012 ²
Carbon Footprint in tCO ₂ e	21,166	23,395	25,651
Emissions Which Do Not Require Offsets ³	0	-8	-10
Carbon Footprint (needing offsetting) in tCO ₂ e	21,166	23,387	25,641
Purchased Carbon Offsets	\$ 617,907	\$ 540,036	\$ 644,750
Purchased Carbon Offsets +HST / GST	\$ 692,056	\$ 604,841	\$ 676,988

¹ Purchased carbon offsets for 2011 include payment credit and space adjustments from 2010

² Purchase Carbon Offsets for 2012 include Carbon Footprint adjustment for 2011, due to building data corrections from the Climate Action Secretariat.

³ As outlined in the Carbon Neutral Government Regulation of the Greenhouse Gas Reductions Target Act, some emissions do not require offsets.



Energy Saved

PHSA completed **4** energy projects in 2012 which led to big savings for us...and the environment.

654,000 kWh

Electricity saved

400 GJ

Fuel saved

36 tCO₂e

Green house gas reduction

45,000 \$

Estimated annual cost avoidance

EMISSIONS REDUCTION

ACTIVITIES 2012

PHSA continued to take strides to reduce our carbon footprint. In 2012; the following are key highlights

ENERGY CONSERVATION & CLIMATE NEUTRAL:

We improved efficiency

- **We completed four (4) energy retrofit projects** in PHSA buildings this year for an estimated annual savings of 654,000 kWh of electricity, 400 GJ of natural gas and a reduction 36 tCO₂e of GHG
- **Energy Optimization:** We continued efforts started in 2010 through the BC Hydro Continuous Optimization Project:
 - **The Ambulatory Care Building at CWHC** is in the coaching phase.
 - **Investigation Phase initiated at five (5) new sites**
 - **BC Cancer Research Centre Implementation** Phase is 20% complete
- **CWHC Control system upgrade:** We undertook a controls upgrade at Children's and Women's Health Centre (CWHC)
- **Six (6) Air Leakage Assessments:** Completed Air Leakage Assessments at six (6) PHSA facilities totaling over 72,000m² in order to identify opportunities to reduce energy consumption through improved air sealing
- **Four (4) Energy Assessments:** Took advantage of FortisBC funding to complete "Energy Assessments" at four (4) sites (SHHC, FVCC, CCSI, & VICC) totaling over 32,000m² in order to identify gas conservation opportunities
- **Energy Performance Guidelines:** Guidelines were developed to define minimum energy efficiency requirements for new construction and major renovations to be embedded within the request for proposal for projects
- **UBC CEEN Student Energy Audits:** We participated in the UBC Clean Energy Engineering masters student energy audit program, enabling two (2) PHSA buildings to have a free energy audit



Clean Commuter Challenge

During May of 2012, as part of our Cut the Carbon Community at bcgreencare.ca, (currently being refreshed as The GreenCare Community) we ran a Clean Commuter Challenge and asked Lower Mainland staff at Provincial Health Services Authority, Vancouver Coastal Health, Fraser Health, and Providence Health Care to commit to taking actions to reduce their personal commuting carbon footprint.

The Clean Commuter Challenge by numbers:

36% increase
in kilometers through transit
by PHSA staff

11 teams
participated in the challenge

48% reduction
in participating staff's
commuting carbon footprint

249 goals
made by staff to support
sustainable commuting

EMISSIONS REDUCTION ACTIVITIES 2012 CONT'D

ACTIVE TRANSPORTATION:

We facilitated greener commutes

- **TDM Coordinator:** In collaboration with the other lower mainland health authorities, hired a Transportation Demand Management (TDM) Coordinator in 2012
- **2012 Clean Commuter Challenge:** See side bar for details.
- **Travel Smart Program:** Worked with TransLink and their new TravelSmart program to create customized travel plans for hospital sites across the lower mainland.

REGENERATIVE DESIGN:

We use green standards

- **LEED Gold, Evidence-Based Design, and LEAN principles:** We continue to apply these principles in new construction and major renovation projects.
- **CWHC Redevelopment:** The Children's and Women's Health Centre (CWHC), in undergoing a major redevelopment to be phased over many years. The new 50,000m² Acute Care Centre currently in the planning and design stage will target LEED Gold Certification. During the planning process PHSA has applied imPROVE (its leading edge health-care-specific adaptation of LEAN) to identify and remove waste and improve patient care
- **Green Playbook Version 1:** The Energy and Environmental Sustainability (EES) team created a "Green Playbook" document to provide sustainability principles and guidelines to the LMFM teams.

WATER CONSERVATION & RESTORATION:

We prioritized water conservation

- **CWHC Irrigation Upgrades:** Participated in a City of Vancouver Irrigation Audit pilot, which provided an irrigation audit at Children's and Women's Health Centre (CWHC).
- **CWHC Rainwater Management Plan:** As part of CWHC Redevelopment a Campus Rainwater Management Plan was completed in 2012. This plan will guide future developments on the site and includes targets of 25% reduction in both storm water runoff and potable water consumption for irrigation.



Green+Leaders

111 staff

Green+Leaders

Have been recruited and trained since 2009, including 32 in 2012

**300 G+L
campaigns**

Green+Leaders carried out 300 campaigns in 2012 to reduce waste, energy and promote sustainable transportation

**31 G+L special
projects**

Volunteers implemented an additional 31 special projects; examples include battery recycling programs, paperless timekeeping procedures, a hospital-wide recycling program at a P3 site and a working group for Laboratory staff to reduce waste and energy use.

EMISSIONS REDUCTION ACTIVITIES 2012 CONT'D

ZERO WASTE: We recycled and reduced

- **Reduction & Recycling Coordinator:** This position continues to enable Lower Mainland Health Authorities, including PHSA, to maintain and upgrade recycling strategies at major acute sites.
- **Solid Waste Diversion Strategy:** As part of CWHC Redevelopment a Campus Solid Waste Diversion Strategy was completed in 2012. This plan will guide future developments on the site and includes the following target:
 - A 50% reduction in solid waste to landfill by 2020 relative to 2008 levels
- **Diverting Food Waste:** Two (2) core PHSA sites have organics (food) waste diversion programs in place for kitchens (CWHC and Vancouver Cancer Centre).

CULTURE OF STEWARDSHIP:

We engaged staff

- **Cut the Carbon Community (C3):** This Fortis sponsored website and campaign attracted over 2,956 Lower Mainland staff including 546 PHSA employees to sign up and commit actions that reduced over 500 tonnes of CO2 emissions.
- **C3 Website Refresh:** We initiated a major refresh of the C3 website, to be called The GreenCare Community.
- **Green+Leaders (G+L) Program:** The successful G+L program recruited more PHSA staff volunteers. The G+L's champion and run behavior change campaigns at their hospitals, care facilities and offices focusing on:
 - **waste and paper reduction; energy reduction; and sustainable transportation.**
- **Energy Awareness Fairs:** Through BC Hydro's Workplace Conservation Agreement (WCA) Energy Awareness fairs were organized during 2012 at sites across the Lower Mainland including CWHC and Vancouver Cancer Centre.
- **Real-Time Energy Consumption:** Staff can access real time energy use data for seven (7) individual buildings through our GreenCare Community website.
- **Draft GreenCare Strategic Framework:** A comprehensive draft framework was developed for the EES team who serve the combined Lower Mainland Health Authorities. The framework outlines our vision, mission, values, as well as goals and targets for each of our 10 Focus Areas.

EMISSION REDUCTION GOALS 2013-14

Our plans to continue reducing greenhouse gas emissions 2013-2014

The four Lower Mainland health organizations, Provincial Health Services Authority, Vancouver Coastal Health, Fraser Health, and Providence Health Care will continue to coordinate, collaborate and integrate energy and environmental initiatives within all our operational clinical and non-clinical work.

As part of those efforts, the following is a list of tasks to be achieved by Provincial Health Services Authority in 2013/14.



ENERGY CONSERVATION & CLIMATE NEUTRAL:

We will improve efficiency

CWHC chilled water plant upgrades: Complete Phase 1 of the CWHC chilled water plant upgrades (Phase 2 pending available funding).

Continuous Optimization Program: Complete Implementation Phase at BC Cancer Research Centre; complete Investigation Phase at five (5) sites.

Coil Cleaning: Complete coil cleaning at remaining six (6) buildings at CWHC totaling over 88,000m².

Detailed Energy Studies: Complete a detailed Energy Study for two (2) PHSA sites and implement cost effective measures (pending available funding).



CULTURE OF STEWARDSHIP:

We will engage staff

Continue the Workplace Conservation & Awareness (WCA) program supported by BC Hydro.

Maintain & grow the Green+Leaders program. The existing and newly recruited G+L's will continue to promote behaviour change in their departments.

Rebrand and re-launch the staff engagement website. The Cut the Carbon Community (C3) will transform to become the GreenCare Community (GCC), which will continue to be a website that offers stories, tips, challenges, incentives, and collaboration for staff around energy and environmental conservation.

GCC "Badge" Program: Launch a program where staff, on the GCC, can earn badges, which are awarded for various commitments in energy & environmental conservation.



ACTIVE TRANSPORTATION:

We will facilitate greener commutes

Run a 2013 Clean Commuter Challenge for staff.

CWHC Shuttle Service: Explore a potential shuttle service from the King Edward Canada Line Station to the CWHC campus to remove barriers to commuting by public transit.

ZERO WASTE:

We will reduce garbage

Implement recycling at the following sites: Children's Hospital, Woman's Hospital and the Sunnyhill Health Centre. In 2013-2014, we will implement recycling at the Cancer Research Centre and BC Cancer Agency Vancouver.

BISS has developed a **biomedical waste reduction initiative** with a waste reduction target of 10% by April 2014. Funding was granted for a Hazardous Waste Coordinator to implement the program.

REGENERATIVE DESIGN:

We will improve building efficiency

All New Construction projects will be designed and built to LEED Gold standards.

Evaluate using Perkins Will Precautionary List and the Living Building Challenge's Red List for all project design.

HEALTHY LAND & FOOD:

Our land & food will be healthier

Pilot 1 community garden, and integrate it into health care services with the intention of community engagement and enhanced health care.

WATER CONSERVATION & RESTORATION:

We will reduce water consumption

Conduct a survey in PHSA facilities to determine the quantity and condition of 'once-through' cooling systems.

BCCRC Water Audit: Complete the comprehensive (indoor and outdoor) water audit is underway for BC Cancer Research Centre and implement cost effective water conservation measures (pending available funding).



ASSURANCES AND RESOURCES

Health Authority Resources

- **Provincial Health Services Authority**
<http://www.phsa.ca>
- **Fraser Health**
<http://www.fraserhealth.ca>
- **Vancouver Coastal Health**
<http://www.vch.ca/>
- **Providence Health Care**
<http://www.providencehealthcare.org>
- **GreenCare Community**
www.bcgreencare.ca

External Resources

- **LiveSmart BC: 2010 Carbon Neutral Action Reports: Health Authorities**
http://www.livesmartbc.ca/government/carbon_neutral/health_authorities.html
- **Bill 44 – 2007; Greenhouse Gas Reduction Targets Act**
http://www.leg.bc.ca/38th3rd/1st_read/gov44-1.htm
- **Canadian Green Building Council LEED description**
<http://www.cagbc.org/>
- **ASHRAE 189.1 standard for new buildings and renovations**
<http://www.ashrae.org/resources--publications/bookstore/standard-189-1>
- **BOMA BEST Environmental Certification**
<http://www.bomabest.ca/>

Partner Resources

- **Fortis**
<http://www.fortisbc.com>
- **BC Hydro**
<http://www.bchydro.com/>

Assurances

As part of meeting the Carbon Neutral Government Regulations, all Public Sector Organizations (PSOs) are now required to annually self-certify, i.e. declare that the data entered into SMARTTool is accurate and complete.

Beginning in 2012, each year a cross section of PSOs will undergo an independent verification process.

In 2011, our Energy and Environmental Sustainability team volunteered for the Climate Action Secretariat's pilot self-certification program.

Feedback from the auditors was good, indicating the Lower Mainland Health Authorities' new process for self-certification is sound.



Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions Towards Carbon Neutrality

The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act.

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Mobile Fuel Combustion (Fleet and other)					
Behaviour change program					
Provide fleet driver training to reduce fuel use	Completed (in Previous Year)				No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress	Ongoing enforcement of anti-idling.	Ongoing enforcement of anti-idling.	2009	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Encouraging Staff to participate in Jack-Bell Ride Share online car pooling coordination program.	Tie the Jack-Bell Ride Share program into the Cut the Carbon Community (C3) staff engagement program.	2008	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Using the Cut the Carbon Community (being rebranded as "GreenCare Community") website to promote travel and commuting options that are carbon reduced or carbon neutral.	Ongoing practice	2008	No End Date (Continuous)
Vehicle fuel efficiency					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	No new vehicles purchased in 2012.	All new vehicles purchases to be as fuel efficient as possible.	2008	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	In Development	No new vehicles purchased in 2012.	All new vehicles to be optimized according to need and "right sizing"	2010	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	All vehicles are subjected to stringent annual AirCare testing, a motor vehicle inspection/maintenance (IM) program implemented in BC in 1992, that requires all vehicles to undergo emissions testing prior to licence renewal.	Ongoing practice.	2008	No End Date (Continuous)
Stationary Fuel Combustion, Electricity					
Behaviour change program					
Help staff reduce personal energy use through ""workstation tune-ups""	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	The Green + Leaders (G+L) Lower Mainland Health Authority wide behaviour change program recruited more volunteers in the fall of 2012. As part of the energy reduction campaign the volunteers were supplied an energy audit tool and form which focused on unplugging and switching off equipment. Our online Cut the Carbon Community (C3) provides tips and encouragement for staff to unplug and switch off electrical equipment. This website is being renewed and rebranded as the GreenCare Community.	The existing and newly recruited G+L will continue to promote behaviour change in their departments. The online C3 (soon to be GreenCare Community) will continue to promote behaviour change and recruit more users.	2009	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	The Green + Leaders (G+L) Lower Mainland Health Authority wide behaviour change program recruited more volunteers in the fall of 2012. As part of the energy reduction campaign the volunteers were supplied an energy audit tool and form which focused on unplugging and switching off equipment.	The existing and newly recruited G+L will continue to promote behaviour change in their departments. The online C3 (soon to be GreenCare Community) will continue to promote behaviour change and recruit more users.	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Information provided to staff during Energy Awareness and education sessions. Also included in the Green+Leaders energy reduction campaign.	Maintain practice and awareness initiatives.	2009	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress	Included in the Green+Leaders energy reduction campaign.	Maintain practice and awareness initiatives.	2009	No End Date

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Actions Towards Carbon Neutrality					
The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act.					
Action	Status	Steps Taken	Steps Planned	Start Year	End Year
	Progress				(Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress	<p>Energy reduction is one of the three behaviour change campaigns in the Green+Leaders program.</p> <p>Tips and information provided on the Cut the Carbon (C3) website. This website is being renewed and rebranded as the GreenCare Community.</p>	<p>The existing and newly recruited G+L will continue to promote ehaviour change in their departments.</p> <p>The online C3 (soon to be GreenCare Community) will continue to romote behaviour change and recruit more users.</p>	2009	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress	<p>Energy awareness campaigns encourage staff to use stairs where feasible to save energy, and also promote and improve daily physical activity and social connection.</p>	<p>Maintain practice and awareness initiatives. "Take the stairs" awareness is incorporated into the Green+Leaders program.</p>	2009	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	<p>As part of the BC Hydro Workplace Conservation Agreement (WCA), Energy Awareness fairs were organized during 2012 at 2 core PHSA sites. These fairs included BC Hydro and a focus to "switch off" lights.</p> <p>The Green + Leaders (G+L) behaviour change program recruited more volunteers in the fall of 2012. As part of the energy reduction campaign the volunteers were supplied an energy audit tool and form which focused on switching off lights. They were also supplied with "lights off" posters and stickers to use in their departments.</p> <p>Various stories posted on our online Cut the Carbon Community (C3) site with reminders on the energy conservation benefit to switching off lights.</p>	<p>The G+L program will continue with the focus to turn off lights.</p> <p>The online C3 will continue to promote behaviour change, such as switching lights off and continue to recruit more users.</p>	2009	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	<p>Energy Awareness fairs were organized during 2012 at 3 core PHSA sites. These fairs included Fortis BC and a focus area is to reduce hot water use.</p> <p>Our online Cut the Carbon Community (C3) includes content and tips on water conservation (including hot water). This website is being renewed and rebranded as the GreenCare Community.</p> <p>Hot water conservation is part of the G+L Energy Campaign.</p> <p>Leveraged Fortis BC's free "Energy Assesment" program at four (4) PHSA sites in order to better understand how hot water is used and how we can promote hot water conservation.</p>	<p>The online C3 (soon to be GreenCare Community) will continue to promote behaviour change, such as hot water conservation, and recruit more users.</p> <p>Identify possible hot water conservation strategies to incorporate into G+L behaviour change program.</p> <p>A Water Conservation plan will be developed over the next 3 years</p>	2009	No End Date (Continuous)
IT power management					
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	<p>In 2009, the BC Health Authority Shared Services Organization (HSSBC) was initiated and mandated with responsibility for procurement, supply chain management and IMIS services including workplace technologies, desktop power management, data centre management, server technologies. Desktop Power Management Software will be implemented in the near future as new computers</p>	<p>Under review by Customer Technology & Service department of the Health Shared Services BC (HSSBC).</p>	2009	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions Towards Carbon Neutrality					
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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		and a new operating system is installed across FH, VCH, PHSA, and PHC Health Authorities. No new actions taken in 2012.			
Implement server virtualization	Ongoing/In Progress	Virtualization of servers within the Lower Mainland Health Authorities is in progress. This will affect core PHC sites with significant potential annual electrical savings. An end of year progress report from Health Shared Services BC (HSSBC) indicates that they are 30% complete.	Virtualization project to continue and will hopefully be complete in 2013.	2008	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	No new action steps in 2012. All monitors have a default auto-sleep setting of 20 minutes.	Under review by Customer Technology & Service department of the Health Shared Services BC (HSSBC).	2008	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Ongoing/In Progress	Working with various departments of the Health Shared Services BC (HSSBC) and the company who provides printer services to the Lower Mainland Health Authorities to develop and roll out a Print Strategy. The strategy includes efforts to remove stand alone printers and consolidate to larger shared devices.	Continue development and roll out Print Strategy.	2009	No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Ongoing/In Progress	PHSA has implemented this measure as a standard policy. Working with various departments of the Health Shared Services BC (HSSBC) and the company who provides printer services to the Lower Mainland Health Authorities to develop and roll out a Print Strategy. The strategy includes efforts to remove stand-alone printers and consolidate to larger shared devices. All new devices are equipped with auto-sleep function, while some of older standalone devices are not.	Continue development and roll out Print Strategy.	2009	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Completed (in Previous Year)				No End Date (Continuous)
Leased buildings					
Establish energy performance baseline for leased buildings	In Development	No actions taken in 2012.	Consider developing an energy performance baseline for the largest of leased sites in order to track progress relative to the baseline year.	2012	No End Date (Continuous)
Lease space with operations and maintenance performance labelling/certification (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Lease space with commercial interiors performance labelling/certification (e.g., LEED CI)	Not Yet Evaluated				No End Date (Continuous)
Lease space in buildings with new construction performance labelling/certification (e.g., LEED NC)	Not Yet Evaluated				No End Date (Continuous)
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	Ongoing/In Progress	A Tenant Improvement Handbook incorporating some elements of Green Lease policies was developed in 2007 and updated in 2009. In 2010 the Handbook then went through additional updates to incorporate the different standards for all of the consolidated lower mainland health authorities facilities Management (VCH, FHA, PHSA, and PHC). As part of the update, Facilities Energy & Environmental Sustainability staff incorporated green strategies in this handbook. Final edit and approval by the Steering Committee was completed in 2011.	Continue to apply the Tenant Improvement Handbook to leased facilities where feasible.	2008	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions Towards Carbon Neutrality

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Owned buildings					
Establish energy performance baseline for owned buildings	Ongoing/In Progress	<p>The performance of each owned PHSA site / building is summarized annually in terms of a Building Energy Performance Index (BEPI) in units of ekWh/m²/year.</p> <p>This standard performance metric is used to compare each site / building to the baseline year (2007-2008).</p> <p>The Clinical Service Buildings (CSB) and the Cancer Centre for the North in Pringle George were both completed in 2012. The consumption is being tracked for these facilities and the baseline will be the first full year of consumption.</p>	<p>The Building Energy Performance Index (BEPI) values in ekWh/m²/year are updated annually for each PHSA owned building in order to track progress relative to the baseline year.</p> <p>An energy performance baseline will be developed for all new owned buildings.</p> <p>Consider creating an energy performance baseline for leased sites.</p>	2009	No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Register for performance labelling/certification for commercial interiors of owned buildings (e.g., LEED CI)	In Development	All new construction and major renovations are mandated to meet a LEED Gold standard; however, there have not been any applicable projects initiated to date.	No specific new LEED-CI projects are currently planned; however there is a major redevelopment planned at the Children's and Women's Health Centre (CWHC) campus, which will include major renovations for which LEED-CI might be the applicable LEED rating system.	2010	No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	<p>All new construction and major renovations are mandated to meet a LEED Gold standard.</p> <p>There were no new construction or major renovation projects that achieved LEED-NC Certification in 2012.</p> <p>There is a major redevelopment underway at the Children's and Women's Health Centre (CWHC) campus, which will include new construction and major renovations for which LEED-NC will be the applicable LEED rating system.</p> <p>Specifically, the new Acute Care Centre (ACC), which will be a P3 project as part of the CWHC redevelopment is in the planning and development stage and it will be LEED Gold.</p>	<p>Once the winning P3 proponent team for the new Acute Care Centre (ACC) has been chosen, the LEED project registration will be initiated.</p> <p>Certification is pending for the following three completed buildings that are targeting Gold Certification through LEED-NC:</p> <ul style="list-style-type: none"> - BC Cancer Agency Centre for the North (CaGBC ID 12195) - CWHC Clinical Support Building (CaGBC ID 14264) - CWHC Centre for Translational Research (CaGBC ID 10134) 	2010	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	<p>A number of energy retrofit projects were completed in 2012 (detailed in sections below) for an estimated annual savings of 654,000 kWh of electricity, 400 GJ of natural gas and a reduction 36 tCO₂e of GHG.</p> <p>A variety of energy retrofit projects were initiated in 2012.</p>	Energy retrofits to continue as identified through energy studies and inefficient practices. Details of planned retrofits are summarized in relevant sections below.	2008	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Not Yet Evaluated				No End Date (Continuous)
Planning/management					
Reduce office space (square meters) per employee	Ongoing/In Progress	There is ongoing consolidation of under-utilized leased facilities to reduce energy utilities consumptions, the organization's carbon footprint, square footage footprint and leasing costs	Ongoing consolidation of under-utilized leased facilities to reduce energy utilities consumptions, the organization's carbon footprint, square footage footprint and leasing costs.	2010	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions Towards Carbon Neutrality

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		A 12,500 square meter office building was leased and underwent a major tenant improvement in 2012. This new leased space was converted into an open office to accommodate over 1000 employees from VCH, PHC, PHSA, and FH health authorities to maximize space usage, increase efficiency and reduce utilities consumption.			
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	No new metering systems installed in 2012. We took steps to take better advantage of a sub-metering system at Children's and Women's Health Centre (CWHC). We can now extract hourly data for all sub-metered points into excel in order to better understand how energy is being consumed within the campus and to identify and diagnose unusual consumption patterns, which can be flagged for correction (pending available resources).	Continue to add sub-metering as part of planned electrical upgrades, large equipment replacements and general building/area upgrades, subject to funding availability. Continue to utilize sub-meter data at CWHC.	2010	No End Date (Continuous)
Retrofit details for owned buildings					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	A detailed study of the central chilled water plant at Children's and Women's Health Centre (CWHC) was completed and as a result, a two-phase project to upgrade the plant is underway. The Investigation Phase of BC Hydro Continuous Optimization (C.Op.) Program at BC Cancer Research Centre (BCCRC) was completed and the Implementation Phase is about 20% complete. Completed two more coaching sessions as part of the Coaching Phase of the CWHC Ambulatory Care Building (ACB) C.Op. project. C.Op. Investigation Phase initiated at five (5) facilities in order to identify cost effective HVAC energy conservation measures. Initiated an Energy Study at four (4) PHSA facilities in order to identify HVAC energy conservation measures: Cancer Centre for South Interior (CCSI), and three buildings at CWHC (CFRI, MHB, and ACB). Completed coil cleaning at five (5) PHSA buildings. Completed some mechanical upgrades as part of the tenant improvement project at 1795 Willingdon.	Complete Phase 1 of the CWHC chilled water plant upgrades (Phase 2 pending available funding). Complete the Implementation, Handoff, and Coaching Phases of the BCCRC C.Op. project. Complete ACB C.Op. project. Complete the detailed Energy Study for CCSI and CFRI and implement cost effective HVAC measures (pending available funding). Complete coil cleaning at remaining six (6) buildings at CWHC totaling over 88,000 m2.	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	Complete a major lighting upgrade as part of the Tenant Improvement project at 1795 Willingdon Ave.	Continue to replace existing lighting systems with high efficiency lighting.	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	The Investigation Phase of BC Hydro Continuous Optimization (C.Op.) Program at BC Cancer Research Centre (BCCRC) was completed and the Implementation Phase is about 20% complete, including controls upgrades. C.Op. Investigation Phase initiated at five (5) facilities in order to	Complete Implementation, Handoff, and Coaching Phases of the BCCRC C.Op. project including associated controls upgrades. Complete Investigation Phase for the five (5) newly initiated C.Op. projects (at VCC, CFRI, MHB, SHHC, & FVCC).	2010	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions Towards Carbon Neutrality

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		<p>identify cost effective energy conservation measures:</p> <ul style="list-style-type: none"> - Vancouver Cancer Centre (VCC) - CWHC Children and Family Research Institute (CFRI) - CWHC Mental Health Building (MHB) - Sunny Hill Health Care Centre (SHHC) - Fraser Valley Cancer Centre (FVCC) <p>Initiated a detailed Energy Study at two PHSA facilities in order to identify HVAC and controls energy conservation measures: Cancer Centre for South Interior (CCSI) and CWHC Children and Family Research Institute (CFRI).</p> <p>Completed some mechanical and controls upgrades as part of the tenant improvement project at 1795 Willingdon Ave.</p>	Complete the detailed Energy Study for CCSI and CFRI and implement cost effective controls upgrades (pending available funding).		
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	<p>Upgraded a portion of the Children's and Women's Health Centre (CWHC) main building roof and added an additional 2 inches of insulation.</p> <p>Completed Air Leakage Assessments for six (6) PHSA buildings totaling over 73,000 m2 in order to identify opportunities to save energy and improve thermal comfort by improving air tightness*.</p> <p>*Note that "Building Insulation" is assumed to refer to building envelope upgrades beyond just insulation that can achieve energy savings.</p>	<p>Complete Air Leakage Assessments for an additional four (4) PHSA buildings totaling over 50,000 m2.</p> <p>Implement cost effective envelope upgrades identified through air leakage assessment (pending available funding).</p> <p>Continue to upgrade roof insulation in conjunction with planned roof upgrades.</p>	2009	No End Date (Continuous)
Supplies (Paper)					
Behaviour change program					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	PHSA have access to SharePoint sites and have the ability to create a SharePoint site for a specific collaborative project. Some training materials are available for new users. http://teamsites.phsa.ca/sites/	No new actions planned.	2009	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	Green+Leaders program includes a paper reduction campaign that includes a tool on paperless meetings.	<p>On-going as part of the paper reduction campaigns strategies.</p> <p>These tools will become publicly available with the launch of the new GreenCare Community website, which will have a public-facing portion to share the G+L toolkits more broadly.</p>	2009	No End Date (Continuous)
Electronic media in place of paper					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	PHSA have access to SharePoint sites and have the ability to create a SharePoint site for a specific collaborative project. Some training materials are available for new users. http://teamsites.phsa.ca/sites/	No new actions planned.	2009	No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	Shared drives and electronic document libraries are available to most staff at PHSA. Green+Leaders materials reduction campaign	Ongoing practice	2009	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions Towards Carbon Neutrality

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		includes an electronic filing tool. No new actions taken in 2012.			
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress	Business case developed and approved.	Implementation and maintenance	2011	No End Date (Continuous)
Paper Type					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	No new positive action steps in 2012, but there was a change in the reporting process from Health Shared Service BC (HSSBC). They provided reports based upon distribution (use) from their central warehouse rather than bulk warehouse purchasing from the vendor(s).	HSSBC are looking to renegotiate a new contract and provide the option for employees to buy direct from the approved vendor. This new suggested process may finally allow the Lower Mainland Energy and Environment Sustainability team to promote the purchasing of recycled paper.	2010	No End Date (Continuous)
Purchase 40% post-consumer recycled paper	Ongoing/In Progress	No new positive action steps in 2012, but there was a change in the reporting process from Health Shared Service BC (HSSBC). They provided reports based upon distribution (use) from their central warehouse rather than bulk warehouse purchasing from the vendor(s).	HSSBC are looking to renegotiate a new contract and provide the option for employees to buy direct from the approved vendor. This new suggested process may finally allow the Lower Mainland Energy and Environment Sustainability team to promote the purchasing of recycled paper.	2010	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	No new positive action steps in 2012, but there was a change in the reporting process from Health Shared Service BC (HSSBC). They provided reports based upon distribution (use) from their central warehouse rather than bulk warehouse purchasing from the vendor(s).	HSSBC are looking to renegotiate a new contract and provide the option for employees to buy direct from the approved vendor. This new suggested process may finally allow the Lower Mainland Energy and Environment Sustainability team to promote the purchasing of recycled paper.	2010	No End Date (Continuous)
Printer/document settings					
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	Working with Health Shared Services BC (HSSBC) and the Printer Works (the company who provides printer services to the Lower Mainland Health Authorities) to develop and roll out a Print Strategy. The strategy includes ensuring double-sided printing is a default. All new multi-function printers and photocopiers installed since 2009 have double-sided as the default setting. All printers and copiers have been adjusted to default to double-sided printing.	Ongoing practice and roll out Print Strategy.	2009	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Business Travel					
Behaviour change program					
Train staff in web-conferencing	Ongoing/In Progress	Staff training for web-conferencing is now part of the HSSBC mandate and responsibility. PHSA has a leading edge program in Telehealth.	Staff Training for web-conferencing will be expanded.	2008	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress	Green+Leaders sustainable transportation campaign includes a tool to encourage staff to hold virtual meetings. Staff are encouraged to participate in video conferencing and other virtual attendance/presentation.	Maintain practice where possible. Part of the Green+Leaders program will include encouraging staff to hold virtual meetings as part of the sustainable transportation focus.	2009	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress	Green+Leaders sustainable transportation campaign includes a tool to encourage staff to carpool to meetings.	Practice to continue. Green+Leaders program will include encouraging staff to carpool as part of the sustainable transportation focus.	2009	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Green+Leaders sustainable transportation campaign includes a tool to encourage staff to take sustainable travel alternatives to meetings.	Practice to continue. Part of the Green+Leaders program will continue to encourage alternatives to SOVs when travelling to meetings.	2009	No End Date (Continuous)
Policy and budgeting					
Create a low-carbon travel policy or travel reduction goal	Not Yet Evaluated				No End Date (Continuous)
Virtual meeting technology					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	Web-conferencing software is installed on some management desktop as well as in major conference rooms. Desktop sharing software is installed on new management computers.	The installation of Office Communication System (OCS), including web-conferencing software, is now part of HSSBC mandate and responsibility. Use will be expanded.	2009	No End Date (Continuous)
Make desktop web-cameras available to staff	Ongoing/In Progress	New office devices (computers and monitors) have built-in webcams. Not applicable for clinical devices.	New office devices (computers and monitors) will continue to have built-in web-cams.	2012	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	Most main conference rooms in the larger facilities have videoconference units installed	The installation of Office Communication System (OCS), including video-conferencing, is now part of HSSBC's mandate and responsibility. Installation of video-conferencing units will continue to be installed across PHSA.	2009	No End Date (Continuous)
Education, Awareness, and Engagement					
Awards/Recognition					
Establish a sustainability/green awards or recognition program	Ongoing/In Progress	Recognition event held annually for Green+Leader program volunteers and supporters.	Ongoing practice.	2009	No End Date (Continuous)
Staff Professional Development					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	Green+Leaders program offers at least 6 hours of training to Staff who participate. In addition, there are educational events organized through th G+L	Practice to continue.	2009	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions to Reduce Provincial Emissions and Improve Sustainability

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		<p>program that are available to a wider range of staff, including the GreenCare Fairs.</p> <p>The online Cut the Carbon Community (C3) also offers resources for ongoing learning related to sustainability.</p>			
Include green options in employee performance measurement system	In Development	<p>The Lower Mainland Health Authorities including PHSA have a webbased in-house custom-developed performance management system (PerformanceLink) that houses individual Performance Plans and Performance Evaluations for all employees and are linked to the health authorities strategic directions. The system was developed within Fraser Health and has been available to PHSA since 2012.</p> <p>While sustainability performance measurement options are not embedded within the system for all employees, employees can highlight their participation in the Green+Leaders program and other sustainability initiatives within their PerformanceLink Performance Plans.</p>	Encourage G+L's to highlight their participation in the Green+Leaders program within their PerformanceLink Performance Plans.	2011	No End Date (Continuous)
Staff awareness/education					
Provide education to staff about the science of climate change	Ongoing/In Progress	<p>A brief overview of climate change was presented to the Green + Leaders as part of the Energy Reduction launch campaign.</p> <p>As part of the Green + Leaders education sessions a speaker from Greenpeace (Bill Darnell - founding member) provided education on the the founding of Greenpeace and how it relates to our work in healthcare today.</p> <p>Ongoing Climate Change Education is transmitted to staff through C3 and POD News.</p>	<p>The G+L coordinator will continue to schedule education events for the G+L volunteers that include education on climate change science.</p> <p>Consider making resources on climate change science available through the online Cut the Carbon Community (C3), soon to be rebranded GreenCare Community.</p>	2009	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	<p>The ongoing Green + Leaders (G+L) behaviour change program recruited more volunteers in the fall of 2012. They were provided with education on energy and waste reduction.</p> <p>The online Cut the Carbon Community (C3), launched in 2011, continued to provide education on conservation of energy, water and raw materials. Over 100 online community discussions were initiated around the subject of conservation and great resources were shared.</p> <p>Another means used to share information is the POD (PHSA On Demand) Newsletter.</p>	<p>The G+L program will continue to provide education on conservation of water, energy, and raw materials.</p> <p>The Cut the Carbon Community (C3), soon to be rebranded GreenCare Community, website will continue to provide education on conservation of energy, water and raw materials.</p> <p>Information will continue to be shared via the POD Newsletter.</p>	2009	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	The Green + Leaders (G+L) coordinator issues monthly electronic newsletters, including green tips, to all G+L.	The new version of the C3 tool will be launched in May 2013 and renamed "The GreenCare Community" to reflect the evolution from campaign-based to project-based communication. The site is being	2009	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions to Reduce Provincial Emissions and Improve Sustainability

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		The online Cut the Carbon Community (C3) site included tips and community discussion around environmental sustainability and energy conservation. Green tips are also communicated more broadly POD Newsletter.	redesigned and will use more innovative engagement and behavioural change strategies. The G+L monthly newsletters will continue with improved formatting and branding to align with the GreenCare Community website and contribute to a more cohesive and consistent messaging to foster a culture of stewardship.		
Provide sustainability education during new staff orientation	Ongoing/In Progress	There is some sustainability education content incorporated into new staff orientation materials.	Consider improving sustainability education content incorporated into new staff orientation materials and linking to the new GreenCare Community.	2008	No End Date (Continuous)
Team-building					
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	Green + Leaders program incorporates all of these features. The Green+Leaders program recruits, trains and supports staff volunteers to run behaviour change campaigns in their departments. The program is supported by Executive Team	Maintain and expand Green+ Leaders program.	2009	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	The Green+Leaders program has a Coordinator (one FTE) dedicated to recruiting, training and supporting the volunteers.	Demonstrate ongoing benefits of the G+L program in order to secure ongoing and increased funding for the Coordinator position.	2009	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress	Green + Leaders program incorporates all of these features. The Green+Leaders program provides training on behaviour changes including community-based social marketing and CBSM is integrated into its tools.	Continue with annual behaviour change training events and tools for G+L's.	2009	No End Date (Continuous)
Other Sustainability Actions					
Adaptation to Climate Change					
Assessed whether extreme weather events and/or long term changes in climate will affect the organization's business areas	Not Yet Evaluated				No End Date (Continuous)
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	Not Yet Evaluated				No End Date (Continuous)
Building construction, renovation					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	In Development	The Lower Mainland Facilities Management (LMFM) Energy and Environmental Sustainability (EES) team created and issued a "Green Playbook" document to provide sustainability principles and guidelines to the LMFM teams. Included within this document was our commitment to the Metro Vancouver Zero Waste Challenge and the recycling of construction and demolition waste. Zero Waste is also one of the key focus topics for the GreenCare Strategic Framework developed in 2012. The requirement for all new construction and major renovation projects to achieve LEED Gold Certification contributes toward construction waste diversion since most projects successfully pursue at least 50% diversion and many achieve 75% or more.	We plan to work with the Capital Projects team to ensure that our requirement for diversion of construction and demolition waste is being embedded within project specifications.	2010	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	<p>BC Hydro's New Construction Program encourages Life Cycle Costing for new construction and major renovation projects. Through this program BC Hydro provides financial support for energy modeling and analysis during the design stages in order to assess the long term costs and benefits of implementing a more energy efficient design. Participating in this program also makes projects eligible for a capital incentive based on projected energy savings achieved relative to a code baseline.</p> <p>The Lower Mainland Facilities Management (LMFM) Energy and Environmental Sustainability (EES) team has encouraged participation in BC Hydro's New Construction Program (where applicable) by embedding this requirement into the "Energy Design Guidelines" issued in 2012.</p> <p>The EES team created and issued the first version of the "Green Playbook" document, designed to provide sustainability principles and guidelines to the Lower Mainland Facilities Management (LMFM) teams.</p>	<p>Add section on Life Cycle Costing to the "Green Playbook" document.</p> <p>Proactively encourage any new construction and major renovation projects to participate in the BC Hydro New Construction Program.</p>	2008	No End Date (Continuous)
Commuting to and from home					
Introduce telework/work from home policy	Ongoing/In Progress	No new action steps in 2012.	This initiative is being investigated.	2008	No End Date (Continuous)
Offer staff a compressed work week	Not Yet Evaluated				No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress	<p>The G+L Sustainable Transportation focus included a campaign to encourage alternative transportation, such as walking, biking and public transit for work commutes.</p> <p>The Green+Leaders (G+L) behaviour change program recruited more volunteers in the fall of 2012.</p> <p>Greencare Fairs were organised and held at several large sites, including representation from Translink (Travel Smart).</p> <p>The online Cut the Carbon (C3) ran a second Clean Commuter Challenge event following the success in 2011. The concept was to challenge Health Authority employees out of single-occupancy vehicles and into public transit, carpools or other forms of more sustainable commuting like biking or walking. The outcome was very successful, and participation was up by 200% compared to 2011.</p>	G+L's program, C3 website (soon to be The GreenCare Community), and the Clean Commuter Challenge will continue in 2013 and 2014.	2009	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress	The EES team created and issued the first version of the "Green Playbook" document, designed to provide sustainability principles and guidelines to the Lower Mainland Facilities Management (LMFM) teams who manage new construction and major renovation projects. Included within this document was guidance related to best practices to promote alternative transportation, such as provision of	<p>Conduct an audit of all sites in order to identify which sites currently offer shower and locker facilities.</p> <p>Develop Commuter Strategy Plan to promote shower and locker room facilities to meet increase in demand pending availability of space and funds.</p>	2009	No End Date (Continuous)

Provincial Health Services Authority (PHSA) - 2012 Carbon Neutral Action Report

Actions to Reduce Provincial Emissions and Improve Sustainability

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		showers and lockers. The requirement for all new construction and major renovation projects to achieve LEED Gold Certification contributes toward this since most LEED projects pursue the "Alternative Transportation: Bicycle Storage and Changing Rooms" credit.			
Provide secure bicycle storage	Ongoing/In Progress	PHSA has secure bicycle storage in many locations. The EES team created and issued the first version of the "Green Playbook" document, designed to provide sustainability principles and guidelines to the Lower Mainland Facilities Management (LMFM) teams who manage new construction and major renovation projects. Included within this document was guidance related to best practices to promote alternative transportation, including secure bicycle storage. The requirement for all new construction and major renovation projects to achieve LEED Gold Certification contributes toward this since most LEED projects pursue the "Alternative Transportation: Bicycle Storage and Changing Rooms" credit.	Conduct an audit of all sites in order to identify which sites currently offer shower and locker facilities. Develop Commuter Strategy Plan to promote shower and locker room facilities to meet increase in demand pending availability of space and funds.	2010	No End Date (Continuous)
Procurement (non-paper supplies)					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	In Development	Zero Waste and Sustainable Procurement are two of the focus topics for the Lower Mainland Facilities Management Energy & Environmental Sustainability (EES) team. A draft GreenCare Strategic Framework has been created, including goals and targets for both these focus areas.	Engage the Procurement team from Health Shared Services BC (HSSBC) and implement a sustainability procurement program.	2012	No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	In Development	Zero Waste and Sustainable Procurement are two of the focus topics for the Lower Mainland Facilities Management Energy & Environmental Sustainability (EES) team. A draft GreenCare Strategic Framework has been created, including goals and targets for both these focus areas.	Engage the Procurement team from Health Shared Services BC (HSSBC) and implement a sustainability procurement program.	2012	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress	Contracted services are using leading edge practices.	Ongoing practice	2008	No End Date (Continuous)
Waste reduction/diversion					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	In Development	The Lower Mainland Health Authority Recycling Renewal program is being rolled out across the region by the Recycling Coordinators in order to implement or improve existing recycling and waste diversion initiatives. Recyclable materials include paper, confidential paper, plastics, soft drink cans, cardboard, batteries, Mercury, electronics, and fluorescent and HID lighting. Planning was completed in 2012 for implementation of PHSA lower mainland health authority sites.	Implement the LMHA Recycling Renewal program at the following five (5) core PHSA buildings: Children's Hospital, Woman's Hospital, Sunny Hill Health Centre, Cancer Research Centre and Vancouver Cancer Centre. It is expected that recycling volumes and diversion rates, staff awareness and satisfaction with recycling will increase as the program moves forward.	2011	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		<p>PHSA's largest site, the Children's and Women's Health Centre (CWHC), is undergoing a rezoning process as part of the major CWHC Redevelopment. As part of this process a Campus Solid Waste Diversion Strategy was completed in 2012. This plan will guide future developments on the site and included the following target:</p> <ul style="list-style-type: none"> - A 50% reduction in solid waste to landfill by 2020 relative to 2008 levels <p>Organic waste (food) diversion from kitchens has been implemented at two (2) core PHSA sites (CWHC & Van Cancer Centre).</p>			
Implement a hazardous waste reduction and disposal strategy	In Development	PHSA labs continued with their strategies.	Program to continue in development in other labs	2011	No End Date (Continuous)
Water conservation					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	In Development	<p>A draft GreenCare Strategic Framework has been created in order to identify and prioritize the full scope of sustainability efforts underway at PHSA through the Lower Mainland Facilities Management Energy & Environmental Sustainability (EES) team. The frame identifies goals and targets for the combined Lower Mainland Health Authorities across ten (10) areas of focus.</p> <p>Water Conservation is one area of focus and includes a target of 10% reduction in water use by 2020 (based on 2010 baseline).</p> <p>PHSA participated in a City of Vancouver Irrigation Audit pilot, which provided PHSA with a free irrigation audit at Children's and Women's Health Centre (CWHC). Based on the findings, a number of water conservation upgrades are being implementing.</p> <p>A comprehensive (indoor and outdoor) water audit is underway for one (1) PHSA facility (BC Cancer Research Centre).</p>	<p>Consider developing a water conservation strategy for PHSA.</p> <p>Implement (pending available fundings) cost effective water conservation strategies identified through the BCCRC water audit.</p> <p>Plan and coordinate another water use audit at one PHSA facility.</p>	2012	No End Date (Continuous)
Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features	In Development	<p>As noted previously, Water Conservation targets are included in the draft GreenCare Strategic Framework.</p> <p>One priority action to achieve these targets is to upgrade/replace heavy water use equipment such as once-through cooling systems.</p> <p>Another action is to upgrade inefficient irrigation systems or replace with xeriscaping.</p> <p>These targets are also aided by the fact that all newly constructed facilities and major renovations are mandated to meet LEED NC Gold. As part of the LEED process, strategies will be incorporated to reduce potable water consumption.</p> <p>Other renovations will also include plans to replace inefficient water</p>	Conduct a survey in PHSA facilities to determine the quantity and condition of 'once-through' water refrigeration systems.	2012	No End Date (Continuous)

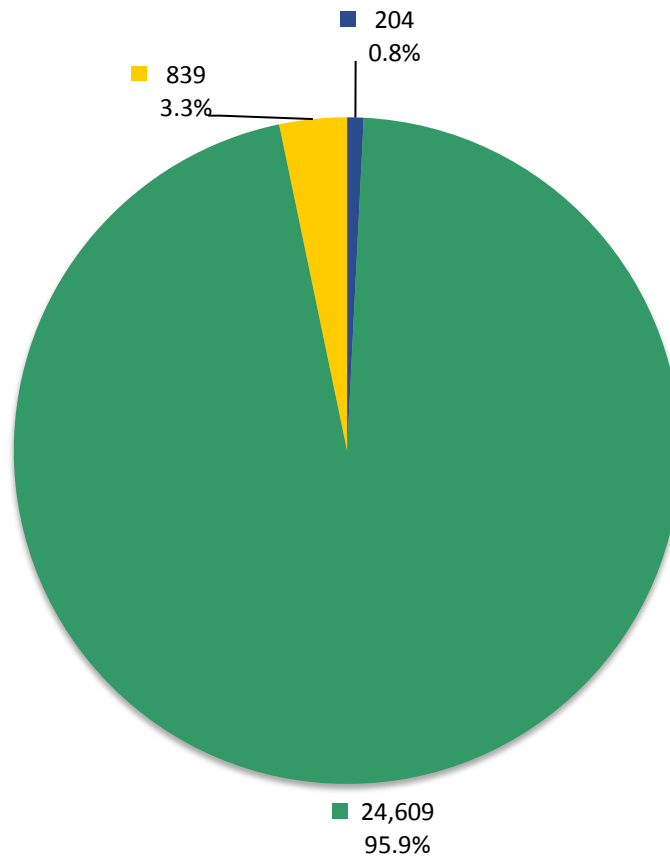
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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	In Development	<p>fixtures with efficient models</p> <p>As noted previously, water management is a component of the draft GreenCare Strategic Framework for the combined Lower Mainland Health Authorities.</p> <p>All new constructed facilities and major renovations are mandated to meet LEED-NC Gold standards. As part of the LEED process, such projects may incorporate stormwater management landscape strategies where feasible and practical.</p> <p>PHSA's largest site, the Children's and Women's Health Centre (CWHC), is undergoing a rezoning process as part of the major CWHC Redevelopment. As part of this process a Campus Rainwater Management Plan was completed in 2012. This plan will guide future developments on the site and included the following targets: 1: 25% decrease in the rate and quantity of stormwater runoff, relative to the 2012 condition; and 2: 25% decrease in potable water consumption for irrigation, relative to the 2012 condition or compared to conventional means.</p>	Future developments at CWHC will be guided by the Campus Rainwater Management Plan .	2012	No End Date (Continuous)

Provincial Health Services Authority Greenhouse Gas Emissions by Source for the 2012 Calendar Year (tCO₂e*)



Total Emissions: 25,651

- 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 2012 (Generated May 27, 2013 11:12 AM)

Total offsets required: **25,641**. Total offset investment: **\$641,025**. Emissions which do not require offsets: **10** **

*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.