

## **Vancouver Coastal Health** **2009 CARBON NEUTRAL ACTION REPORT**

### **Executive Summary:**

**Vancouver Coastal Health Authority (VCHA)** has taken strong steps to reduce its carbon footprint.



Representing 97% of the organization's carbon footprint, energy has been a key focus point of the organization's drive for carbon neutrality. Within this work, Energy Management, from 2007-2008, has reduced electrical consumption by an estimated 3.7 million kWh and 24,008 GJ of Natural Gas and 1,275 tCO<sub>2</sub>e of Green House Gases (GHG) per annum, a reduction of 2.82% from the carbon footprint base of 2007 for VCH owned and leased facilities. Additional energy projects, currently in progress since 2009, will result in an estimated savings of 4.5 million kWh and 4,545 GJ of Natural Gas and reduce our carbon footprint by an additional 325.6 tCO<sub>2</sub>e per annum, representing an incremental reduction of 0.7% from our carbon footprint. Additional Energy savings initiatives are currently in the planning stage for 2010-2013.

Representing less than 3% of the organization's carbon footprint, waste (paper) management has been a key focus too. Waste management has focused on improving recycling initiatives of consumed paper and encouraging the elimination of any non-recycled content paper.

VCHA continues to encourage staff to commute carbon neutral (bike/walk) or carbon reduced (car pool/transit) and has dramatically increased the bus subsidy for staff. To promote more biking, VCHA conducted workshops and took steps to create a stronger organization/strategy for the coming years. Staff enrollment in the VCH supported Translink Employer Pass program has increased from 500 staff to over 1,000 since 2008/2009.

With the current collaborative consolidation of non-clinical services at Vancouver Coastal Health Authority (VCHA), Fraser Health Authority (FHA), Providence Health Care (PHC), and Provincial Health Services Authority (PHSA), we are all united in our commitment to reduce our impact on the environment and to increase the health and well being of British Columbians while maintaining the important link between health and the environment. A key outcome of the consolidation is the creation of a dedicated Energy and Environmental Sustainability team reporting to an Executive Director of Facilities Operations and Environmental Sustainability. An increased focus will be placed on engaging our staff, communities and key stakeholders to take action on climate change and to reduce our organizations' overall carbon footprint. Together, we will work to coordinate, consolidate and integrate environmental initiatives within all our operational work plans, which will include both clinical and non-clinical services.

### **Overview:**

Vancouver Coastal Health Authority (VCHA) is a regional health authority providing direct and contracted health services including primary, secondary, tertiary and quaternary care, home and community care, mental health services, population and preventive health and addictions services in parts of Greater Vancouver, the Coast Garibaldi area, and the Sunshine Coast area. VCHA is one of six publicly-funded healthcare regions within the Canadian province of British Columbia. The Provincial Government of British Columbia, through the British Columbia Ministry of Health, sets province-wide goals, standards and performance agreements for health service delivery by the six health authorities.

VCHA (VCHA & PHC) serves one in four of British Columbia's four-million population who live in a geographic area of 58,560 square kilometers including twelve (12) municipalities, four (4) regional districts and fourteen (14) Aboriginal communities, including:

- Vancouver
- Richmond (within Greater Vancouver))
- The North Shore (The municipalities and districts of North and West Vancouver, within Greater Vancouver)
- Coast-Garibaldi (Sea-to-Sky including Whistler), Sunshine Coast, Powell River, Waglisla-Bella Bella (Affiliate) and Bella Coola (Affiliate).

### **Actions Taken to Reduce Greenhouse Gas Emissions since 2007:**

VCHA, FHA, PHSA, and PHC are united in their commitment to reduce their impact to the environment. One of the goals and objectives for all four health organizations is to increase the health and well being of British Columbians while maintaining the important link between health and the environment. An increased focus has been placed on infrastructure improvements and engaging our staff, communities and key stakeholders to take action on climate change and to reduce our organizations' overall carbon footprint. Here is a brief list of carbon reducing actions taken since 2007, in progress and planned .

- **Energy Initiatives Completed 2007-2009 at VCHA**

- Twenty two (22) energy retrofit projects in 17 separate VCH buildings were initiated in 2007 and completed in 2008 to reduce electricity (kWh) and Natural Gas consumption (GJ) and reduce GHG emissions. Estimated electricity savings of 3,663,398 kWh and 24,008 GJ of Natural Gas per annum and a reduction of 1,275 tCO<sub>2</sub>e of GHG emissions, a reduction of 2.82% from the total 2007 baseline GHG footprint for VCH facilities (A.2)

- **Other Sustainable Initiatives**

- **Recycling Initiatives** – A recycling program is in place at most of our owned facilities. Recycled materials include paper, cardboard, beverage containers, plastic, printer cartridges and electronic equipment. Staff are encouraged to shift paper orders towards using more “recycled content” in their purchases. (A.3) (B.6)
- **Green Building** – VCH is constantly striving for innovative sustainable design and project delivery solutions to resolve challenges to upgrade aging hospital facilities while balancing new demands for modern health care practices and political harmony. Integrated design management principles and the participation of willing client groups are applied to all of our new and renovations projects. Leadership in Energy and Environmental Design (LEED) standards are being implemented in all of our owned buildings renovations and new constructions. A new leased West Vancouver Community Care Centre (7,826 sq.meters) in West Vancouver was built in 2009 to meet LEED standards and occupied on March 15, 2009. (A.2)(B.5)
- **Transit/Commuting** - Corporate Bus Pass subsidy from Translink is a discount of 15%. In October, 2009, VCH announced a “commuting transit strategy” which provides an additional discount of \$ 11 to \$ 13 per month from VCH, depending on the number zones, to all regular staff (full time and part time) who purchased a yearly bus pass through the Employer Bus Pass Program. Enrollment in this program has increased from 350 staff in December 2008 to 1,000 staff in December 2009 and to 1,200 staff as of March 10, 2010. (A.4)(B.6)

Most VCHA owned facilities have implemented secure bicycle cages/rooms for staff use GreenCare “TravelWise” (behavioural program) encouraged staff to participate in bike-To-Work Week in May, 2009. During June, 2009, bike to work month, VCHA conducted cycling workshops as well as Lunch & Learn events on June 17<sup>th</sup>, 23<sup>rd</sup>, & 24<sup>th</sup>. (B.6)

- **Reducing Waste and Pollution** – VCH has implemented recycling and disposal initiatives for fluorescent and HID lights and batteries to ensure the safe disposal of Mercury. (B.6)
- **Biohazardous Waste** – Biohazardous waste, including Biomedical and Anatomical waste, and Cytotoxic and other pharmaceuticals is collected and disposed off as per Provincial, Federal and OHS safety regulations and standards. (B.6)

### **Operational Changes in 2009:**

In March 2008, the Presidents and CEOs of VCHA, PHC, PHSA, and FHA outlined their firm commitment to ensure that health care dollars are focused on direct patient care by announcing that the four organizations will formally work together to manage and deliver clinical services and non-clinical support services. This partnership allows for new opportunities to coordinate environment and sustainability work across the three organizations in a unified manner, which:

- Provide services to British Columbia communities ranging in location from Boston Bar to Pemberton, encompassing the North Shore, Powell River and the Sunshine Coast, including Vancouver and surrounding area in the Lower Mainland
- Oversee the operation of 25 acute care hospitals and 27 residential care facilities
- Serve a total population of over 2.5 million British Columbians, and includes 37 municipalities and regional districts.

### **Plans to Continue Reducing Greenhouse Emissions (GHG) 2009 – 2012 :**

The four organizations, VCHA/FHA/PHSA/PHC, will work to coordinate, consolidate and integrate environmental initiatives within all operational work plans, which will include both clinical and non-clinical services. A new departmental structure has recently been established to coordinate environmental work plans, identify Green House Gas (GHG) reduction opportunities and to search for new economies by working in a collaborative fashion. We have adopted the term "**GreenCare**" as the common brand name across the four organizations. This common branding supports communications and tactical planning efforts.

#### **• VCHA Energy Retrofit Initiatives in Progress – 2009-2010**

- In partnership with BC hydro, two (2) Continuous Optimization Program (COP) energy retrofit projects were initiated in 2009 to reduce electrical (kWh) and Natural Gas (GJ) consumption and GHG emissions. These projects will provide an estimated savings of 860,000 kWh of electricity, 6,906 GJ of Natural Gas and a reduction of 363 tCO<sub>2</sub>e of GHG per annum, a reduction of 0.8% from the total 2009 GHG footprint for VCH facilities. Completion is scheduled for late 2010 early 2011. (A.2).
- Initiated 11 Energy Retrofit projects in 2009 in 10 separate VCH buildings to reduce electricity (kWh) and Natural Gas consumption (GJ) and reduce GHG emissions. Estimated GHG emission savings of 574.17 tCO<sub>2</sub>e per annum, a reduction of 1.2% from the total 2009 GHG footprint for VCHA owned and leased facilities. Scheduled completion for October/November 2010. (A.2)

#### **• Energy Retrofit Initiatives in Progress and Planned at VCHA – 2010-2012**

- Planning in place to Initiate the investigation phase of BC hydro's Continuous Optimization projects (COP) in 6 separate VCH owned buildings. The approved COP Energy measures to be implemented, pending available funding, in 2011-2012. BC

- hydro Continuous Optimization Programs (COP) are designed to have a 2 year payback or less. (A.2)
- A list of energy retrofit projects have been identified for PSECA 3 funding opportunity (A.2)
- **Travel/Commuting**
  - Corporate Bus Pass subsidy from Translink's and VCH will continue into the coming year(s). Employees who purchase a yearly bus pass through the Employer Bus Pass Program would receive an additional discount of \$11 to \$13 dollars per month from VCH, effective October 2009, depending on the number of zones. (B.6)
  - GreenCare "TravelWise" (behavioural program) – This program has brought in an external consultant to help organize and focus the program. A one year strategy, including bike to work week/month and associated fairs/events will be contained in this strategy. This strategy will be delivered in April 2010. (B.6)
  - In August/September 2010, TravelWise will join with the other GreenCare programs to launch an online community site (C3: Cut the Carbon) focused on all staff at VCH. This web site will provide a direct channel of communication and networking with interested staff from across the region. This will bridge a continual communication gap the program has had.(B.6)
- **Waste and Recycling**
  - A new and improved system for the collection and handling of confidential patient and staff material will begin in March 2010, under a new contract with Shred-it. The new service will provide single handling of confidential material that will be standardized across all health authorities to achieve efficiency, increase security, and cost savings. It is a system that has been implemented successfully at other health facilities.
  - Aramark (contracted Housekeeping services provider) Healthcare's Environmental Program staff visited most of the VCH owned sites during November and December, 2009 and January, 2010 to conduct an assessment of current waste management practices and to collect baseline data prior to implementation of environmental initiatives and prioritize and improve upon recycling programs at each site.
  - A Single-Stream recycling program was introduced to the OR and SPD/CSD areas of the UBC Hospital (UBCH) on February 15, 2010. This allows mixing of recycling materials (paper, cardboard, tin and plastics). Before this program was implemented, Aramark's Environmental Sustainability Manager conducted a stakeholder involvement exercise and provided three education sessions to hospital staff. This program is focused on making it easier for staff to recycle, more efficient to manage by recycling materials handlers, and increase the recycling volumes. Success of this new initiative will result in the expansion of this program to other parts of VCH areas and facilities.
  - Composting initiatives are currently in place in the food preparation areas of the UBC Hospital, Lions Gate Hospital and Richmond Hospital.(B.6)
- **Design - Leadership in Energy and Environmental Design (LEED) 2010 - 2012**
  - St. Mary's Hospital expansion (4,830 sq meters ) – Sechelt – Occupancy 2012 (LEED GOLD NC). OWNED. (A.2)
  - LGH Hospice (3,134 sq. meters) – North Vancouver – Currently under construction with occupancy scheduled for September 2010 (LEED Standard). OWNED (A.2)
  - Grandview/Woodlands Mental Health Team (4,622 sq. meters) – currently under construction with occupancy scheduled for August 2010 (LEED Standard). LEASED. (A.2)

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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 (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
<b>Mobile Fuel Combustion (Fleet and other mobile equipment)</b>						
<b>Vehicle fuel efficiency</b>						
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100 % of vehicles are subject to regular maintenance for fuel efficiency	Fleet of 60 leased vehicles used by VCH-PHC for supplies deliveries are managed by PHH-Arval Fleet Management Services Three (3) other vehicles owned by VCH and used by Facility Operations and Maintenance at Richmond Hospital, Lions Gate Hospital and Squamish Hospital. One (1) Resident bus, owned by VCH is also used for resident outings at the UBC Hospital Purdy Pavilion Resident Care All vehicles are maintained regularly to ensure vehicle safety and optimize fuel efficiency. Stringent annual AirCare, a motor vehicle inspection/maintenance (IM) program implemented in BC in 1992, requires all vehicles to undergo emissions testing prior to licence renewals.	Maintain current practice	1992	No End Date (Continuous)
<b>Behaviour change program</b>						
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Complete	100 City of Vancouver has had an Anti-idling by-law since 2006. Anti-idling signage is in place at all buildings air intake areas and in receiving dock areas. Delivery vehicles drivers and taxi drivers are requested to shut off engines at all public entrances	Ongoing enforcement of anti-idling	Maintain current practice	2006	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)</b>						
<b>Planning/management</b>						
Enrol in a building energy benchmarking program (e.g., GREEN UP)	Ongoing/In Progress		Enrolled in two (2) BC hydro Continuous Optimization Programs (COP) to retro commission two (2) hospital buildings (53,732 square meters) to help maintain and continually enhance the level of efficiency in building operations systems, reduce energy consumption and carbon footprint	1) Complete the implementation of the two (2) 2009 Continuous Optimization Programs initiatives by March 31, 2011. 2) Pending available funding, Implement five (5) additional Continuous Optimization Programs (COP) for 6 separate VCH buildings (189,102 square meters) to proceed through the investigation phase in 2010 and the implementation phase in 2011-2012.	2009	No End Date (Continuous)
Reduce office space (square meters) per employee	Ongoing/In Progress	14 is the current average rentable square meters per employee	Consolidated some under-utilized leased facilities to reduce energy utilities consumption, square footage footprint and leasing costs	Continue consolidation of under-utilized leased facilities and other leased facilities where feasible. Initiated planning to implement Open Office concept in a leased facility (960 square meters) to maximize space usage, increase efficiency and reduce utilities consumption	2009	No End Date (Continuous)

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)		Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	40	% of buildings have a real time metering system installed	Approximately 40% of VCH owned facilities have active PML submetering in place. Two (2) new real time monitoring energy meters are being implemented at two (2) VCH facilities as part of the BC hydro Continuous Optimization Program (COP)	Pending available funding, Implement six (6) additional Continuous Optimization Programs (COP) for 6 separate VCH buildings (189,102 square meters) to proceed through the investigation phase in 2010 and the implementation phase in 2011-2012. These will include the implementation of real time Pulse metering systems	2009	2012
<b>Owned buildings</b>							
Establish energy performance baseline for owned buildings	Ongoing/In Progress	100	% of owned buildings have an established energy performance baseline	All owned VCH buildings have a Building Energy Performance Index (BEPI - kWh/m2/yr) for Acute, and Extended/Residential Care facilities. These can be compared to the average BEPI for same function facilities at VCH and other Health Care Authorities in BC where applicable	Building Energy Performance Index (BEPI - kWh/m2/yr) are updated annually for all VCH owned buildings	2007	No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	In Development	0		1) One (1) facility, an extension (4,830 square meters) of St Mary's Hospital in Sechelt is currently under construction to LEED NC Gold standards-Occupancy in 2012. 2) A standalone hospice/palliative care facility ( 3,134 square meters) is currently under construction across from the Lions Gate Hospital in North Vancouver. This facility is being built to LEED standards, not GOLD NC though, and will have the first roof top solar heat panels at VCH. Occupancy is scheduled for September 2010.	All new constructed facilities and major renovations are mandated to be LEED NC Gold certified. One (1) facility currently under construction to be occupied in 2012 will be certified LEED NC GOLD	2009	No End Date (Continuous)
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	100	% of buildings built or renovated since start year indicated used the integrated design process	All new construction and major renovations incorporated Integrated Design Process into new construction and LEAN principles where appropriate	All new construction and major renovations will incorporate Integrated Design Process into new construction and LEAN principles where appropriate	2008	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress			Chiller and refrigeration maintenance contracted services incorporate refrigerant leak detection and monitoring, leak repair, system retirement and retrofitting, and appropriate bleeding of banned refrigerants.	Maintain practice	2005	No End Date (Continuous)
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	22	% of owned buildings have undergone energy retrofits since start year indicated	Initiated 12 Energy Retrofit projects in 10 separate VCH buildings to reduce electricity (kWh) and Natural Gas consumption (GJ) and reduce GHG emissions. Estimated GHG emission savings of 574.17 tCO2e per annum, a reduction of 1.2% from the total 2009 GHG footprint for VCH facilities. Projects Detailed below	1) 2010: Complete the implementation of eight (8) energy retrofit projects 2) 2010: Pending available funding, initiate the investigation phase of BC hydro's Continuous Optimization Projects (COP) in six (6) separate VCH owned buildings (189,102 square meters). 3) 2011-2012: The approved COP energy projects/measures in 2010 to be implemented in 2011-2012 4) 2010: Submit energy retrofit proposals to PSECA 3 for funding 5) 2010-2012: Implement energy retrofit projects, pending other available funding	2007	No End Date (Continuous)
<b>Retrofitting owned buildings</b>							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Complete	48	% of retrofits (captured above) had heating, cooling, and ventilation systems upgrades	Boiler replacement, Variable speed drive (VAV) installation, Summer Feedwater pump installation, Absorption chiller replacement, Heat Recovery pump installation and other HVAC mechanical retrofit at seven (7) owned facilities	2010: Pending available funding, initiate the investigation phase of BC hydro's Continuous Optimization Projects (COP) in six (6) separate VCH owned buildings (189,102 square meters). Most Energy measures will be to upgrade/optimize mechanical systems. All COP projects will also include DDC systems upgrade 2011-2012: The approved COP energy projects/measures in 2010 to be implemented in 2011-2012	2007	No End Date (Continuous)

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)		Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Upgrade lighting systems during retrofits	Complete	39	% of retrofits (captured above) had lighting systems upgrades	1) Lighting Retrofit projects were completed in eight (8) VCH owned facilities in 2008 2) Lighting Retrofit projects were initiated in one (1) VCH owned facility in 2009	Completed one (1) lighting retrofit in one (1) building at Vancouver General Hospital in March, 2010 Identify and implement lighting retrofit opportunities at VCH sites, pending availability of funding	2007	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Complete	13	% of retrofits (captured above) had control system upgrades or adjustments	DDC building controls systems adjustments at three (3) VCH owned facilities	2010: Pending available funding, initiate the investigation phase of BC hydro's Continuous Optimization Projects (COP) in six (6) separate VCH owned buildings (189,102 square meters). 2011-2012: The approved COP energy projects/measures in 2010 to be implemented in 2011-2012  All Continuous Optimization Programs will require DDC systems upgrades/adjustments/optimization	2007	No End Date (Continuous)
<b>Leased buildings</b>							
Establish energy performance baseline for leased buildings	In Development				Energy performance indexes and Building Energy Performance Indexes (BEPI) to be developed	2010	No End Date (Continuous)
Lease space with commercial interiors performance labelling/certification (e.g., LEED CI)	In Development				Advanced Office Concept currently in planning at one (1) leased facility to implement a 10,000 sq ft open office concept to maximize energy efficiency and meet LEED standards	2010	No End Date (Continuous)
Lease space in buildings with new construction performance labelling/certification (e.g., LEED NC)	In Development			1) VCH leased a 1,806 square meters in a 7,825.6 square meters facility in West Vancouver in March, 2009 for a Community Care Centre. The building was constructed to LEED NC standards and includes geothermal heating and cooling features and solar heat panels. 2) A newly constructed and leased facility (4,622 square) and built to LEED NC standards will be occupied in August 2010.	VCH is committed to leasing space in buildings which are certified as LEED Gold where feasible.	2010	No End Date (Continuous)
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	In Development				A Tenant Improvement Handbook incorporating tenant improvement work to leased office space will be implemented at VCH, PHC, FHA, PHSA Health Authorities for all new building leases and current leases where applicable. Discussions with the consolidated Real Estate group to include green lease policies to existing Tenant Handbook.	2010	No End Date (Continuous)
<b>IT power management</b>							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	0	% of computers shut down automatically outside of regular business hours	A Desktop Energy Study was completed to implement a Desktop Power Management program, Windows based network, to power down almost 15,000 PCs throughout the VCH and PHC organizations. An RFP was implemented and a service vendor chosen. The implementation feasibility of this program is still under assessment due to the current average age of the current desktop computers (7-8 years old) which presents operational issues.	In 2009, the Health Authority Shared Services Organization (SSO) that includes all BC Health Authorities was initiated and includes IMIS services responsible for workplace technologies, including desktop management, data centre, including server technologies, and network services (data and voice), as well as Supply Chain Management. Desktop Power Management Software implementation for the future will be integrated into this new initiative.	2009	2012
Implement server virtualization	Ongoing/In Progress	70	% of servers have been virtualized since start year indicated	65 Servers of the remaining 300 at VCH/PHC have undergone assessment for virtualization but were not done due to budget restrictions	Planning to finalize assessment of the remaining 300 physical servers and virtualize as many as possible, pending available resources.	2010	No End Date (Continuous)

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)		Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	35	% reduction in printers, copiers and/or fax machines since start year indicated	A VCH/PHC Output Management Strategy business case was developed and submitted by IMIS management to implement an output management strategy that will result in a managed output management service with a refreshed fleet of reliable and efficient devices, increased functionality from fewer devices, and a reduction in costs through standardization. Substantial energy utilities savings are also expected.	In 2009, the Health Authority Shared Services Organization (SSO) that includes all BC Health Authorities was initiated and includes IMIS services responsible for workplace technologies, including desktop management, data centre, server technologies, and network services (data and voice), as well as Supply Chain Management. Output Management Strategies for the future will be integrated into this new initiative	2007	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress			Auto-sleep settings are the standard configuration setting for all devices that support this functionality. All new printers, copiers, fax machines and/or MFPs (Multi-function Printers) have auto-sleep settings applied. A VCH Output Management Strategy business case was developed in 2009 to replace all of VCH's aging and inefficient output devices Initiative will result in a managed output management service with a refreshed fleet of reliable and efficient devices, increased functionality from fewer devices, and increased energy efficiency.	There is an overall strategy in place to replace stand alone devices from the environment and replace with MFPs (Multi-function Printers) as the standard and for all new purchases. Pending approval of the VCH Output Management Strategy, completed in 2009, and available resources, most of the current old and inefficient devices will be replaced with a refreshed fleet of reliable, energy efficient, and increased functionality devices.	2007	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress			Newly purchased computers are ENERGY STAR models. However, due to lack of funding, very few new computers have been purchased and most of the current 7-8 year old units tend to be recycled within VCH use.	It is anticipated that the Health Authority Shared Services Organization (SSO) will begin a computer replacement program to retire the current old units and install new computers and monitors with ENERGY STAR models. This is also critical if Desktop Power Management is to be implemented to reduce energy utilities consumption.	2007	No End Date (Continuous)
<b>Appliances and electronic devices</b>							
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress			Desk lamp Incandescent lamp bulbs are not supported by VCH Maintenance departments and are replaced with CFL bulbs as may be requisitioned through Maintenance . The purchase of more efficient desk lamps using CFL lamps and/or LED lighting are recommended where needed.	All desk lamps incandescent bulbs to be replaced with CFL compact fluorescent bulbs or more efficient lighting where required	2007	No End Date (Continuous)
<b>Behaviour change program</b>							
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			"Stop the Energy bleed, Turn off lights no one is using" book marks are provided by energy management staff to employees during energy fairs and other Energy Awareness sessions.	Maintain practice and awareness initiatives	2007	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			Information to staff during Energy Awareness and education sessions	Maintain practice and awareness initiatives	2007	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			Information to staff during Energy Awareness and education sessions	Maintain practice and awareness initiatives	2007	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress			Energy awareness campaigns encourage staff to use stairs where feasible to save energy and encourage personal fitness	Maintain practice and awareness initiatives	2007	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			"Stop the Energy bleed, Turn off lights no one is using" book marks are provided by energy management staff to employees during energy fairs and other Energy Awareness sessions.	Develop a more effective awareness campaign for staff to turn off unnecessary lights at work and at home.	2007	No End Date (Continuous)
<b>Other Stationary Fuel Combustion and Electricity Actions</b>							



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Energy retrofit projects initiated in 2007 and completed in 2008	Complete	22	22 Energy Retrofit projects completed in 2008 in 17 separate VCH owned buildings (18% of total owned)	Completed energy retrofit projects, initiated in 2007 and completed in 2008, resulted in an estimated savings of 3.7 million kWh of electricity, 24,008 GJ of Natural Gas and a reduction of 1,275 tCO <sub>2</sub> e of GHG per annum, a reduction of 2.82% from the total 2007 base year GHG foot print for VCH facilities		2007	2009
Development of a Strategic Energy Management Plan (SEMP) 2009-2011 as part of the BC hydro Energy Managers program	Ongoing/In Progress			VCH/PHC Strategic Energy Management Plan (SEMP) was updated on September 29, 2009. The aim of this plan is to develop an Energy Management Strategy for 2009-2011	The VCH/PHC Strategic Energy Management Plan (SEMP) will be updated annually in conjunction with BC Hydro's oversight.	2009	No End Date (Continuous)
BC hydro's Energy Management Assessment (EMA) for VCH/PHC	Ongoing/In Progress	48	% increase in the International Benchmark Rating (IBR)	In January, 2009, the International Benchmark Assessment (IBR) for VCH/PHC was 1.52, an increase of 48% from the IBR assessment of 1.03 for VCH/PHC in April, 2007. The average industry increase in the first year is 29%. VCH/PHC registered as equal to or greater than 85% of the sector participants (78)	The BC hydro Energy Management Assessment (EMA ) review for VCH/PHC will be updated annually (spring of each year) in conjunction with Hatch Energy and BC Hydro.	2007	No End Date (Continuous)
<b>Supplies (Paper)</b>							
<b>Paper Type</b>							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	10	% of total paper purchased contains 30% recycled content	No standard established as yet.	The Health Authority Shared Services Organization (SSO) to review paper purchases and establish post-consumer recycled content paper standards for VCHA, PHC, FHA, PHSA Health Authorities	2010	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	0	% of total paper purchased contains 100% recycled content	No standard established as yet.	The Health Authority Shared Services Organization (SSO) to review paper purchases and establish post-consumer recycled content paper standards for VCHA, PHC, FHA, PHSA Health Authorities	2010	No End Date (Continuous)
<b>Printer/document settings</b>							
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress			All new Multi-function printers and photocopiers installed in 2009 had automatic double-sided set as the default setting. All printers and copiers have been adjusted to default to double-sided printing	All new Multi-function printers and photocopiers will be set to double-sided printing as a default setting.	2008	No End Date (Continuous)
<b>Electronic media in place of paper</b>							
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	100	% of staff workstations with software installed	Current use of MS Sharepoint Collaborative software for Electronic editing is available to staff where required. Planning in place for facilities to upgrade to one centralized web-based system using Sharepoint 2010	Initiative in place to enhance use of a centralized web-based MS Sharepoint 2010 electronic editing and make available to all approved facilities staff across VCH, PHC, FH, PHSA Health Authorities. Initiative to be completed in June 2010 with professional 2 hour training to follow.	2008	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 VCHA	Practice will continue. Enhance and extend use in Facilities, including Planning, Construction and Engineering	2008	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			Public Affairs and Communications post most materials that were previously printed through various web-based media	It is expected that most printed material will be slowly reduced and replaced with various on-line electronic media including e-mail bulletins, intranet newsletters and other electronic media	2009	No End Date (Continuous)
<b>Behaviour change program</b>							

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress		Some Training is currently available through limited training staff resources	Health Authority Shared Services Organization (SSO) to review training needs and develop action plan	2008	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress		Departments are encouraged to hold paperless meetings or presentations.	On-going and part of the paper reduction campaigns strategies	2008	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress		Practice is encouraged	On-going and part of the paper reduction campaigns strategies	2008	No End Date (Continuous)
<b>Other Paper Supplies Actions</b>						
Paper recycling programs in place at most of VCH owned facilities located in Vancouver, Richmond, North Vancouver, Sea-to-sky, and Garibaldi areas	Ongoing/In Progress		Aramark (contracted housekeeping services provider) Healthcare's Environmental Staff conducted an assessment of current waste management at most VCHA owned facilities to collect baseline data of recycled material, including paper, prior to implementation of environmental initiatives and improve upon recycling programs	It is expected that the implementation of improved recycling programs and awareness will result in increased paper consumption reductions.	1990	No End Date (Continuous)

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## 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 organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
<b>Business Travel</b>						
<b>Virtual meeting technology</b>						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	In Development			Office Communication System (OCS) which includes web-conferencing software is now part of the Health Authority Shared Services Organization's (SSO) mandate and responsibility for planning, installation and training	2010	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	8	% of meeting rooms have access to video-conferencing equipment	None	2010	No End Date (Continuous)
<b>Behaviour change program</b>						
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress			Limited Video-conferencing technical support and training at this time due to lack of staff resources	2010	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress			Staff are encouraged to participate in video conferencing and other virtual attendance/presentation. Most staff are not aware of availability at this time	2010	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress			Staff are encouraged to carpool to meetings where possible	2008	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Practice is encouraged where feasible	2007	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>						
<b>Team-building</b>						
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	In Development			Re-organized ownership and strategy around GreenCare. Created contact list with key "champions" on the list	2007	No End Date (Continuous)
<b>Staff Professional Development</b>						
Support green professional development (e.g., workshops, conferences, training)	In Development			Workshops conducted around "energy" and "travel". 1) Two (2) facilities focused "energy" workshops hosted by Lighthouse Sustainable Buildings Centre. 2) Three (3) general staff focused "travel" workshops hosted by Vancouver Area Cycling Coalition	2007	No End Date (Continuous)
<b>Staff awareness/education</b>						

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress		Workshops conducted around energy and green buildings. Two (2) facilities focused workshops were hosted by Lighthouse Sustainable Buildings Centre.	2010-2012: Workshops for facilities teams on sustainable buildings. Promotion of calendar events (World Water Day, Earth Hour, Earth week, Bike to Work month, etc...). 2010/2011: Currently looking for funding to support and educational session around LEED Principles during the 2010/2011 fiscal year.	2007	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress		Quarterly "EnergyWise" online newsletter	Re-design and re-launch the Green GreenCare EnergyWise online newsletter	2007	No End Date (Continuous)
Provide sustainability education during new staff orientation	In Development		New staff orientation includes one Power Point slide that provides contact information for GreenCare.	Engage Human Resources to include conservation messaging in their new staff orientations across Vancouver Coastal Health, Fraser Health, Providence Health Services, and Provincial Health Services Health Authorities. The goal is to get 1-3 2 minute videos included	2007	No End Date (Continuous)
<b>Other Education, Awareness, and Engagement Actions</b>						
Earth Day hosting	In Development			Aramark's (Contracted Housekeeping Services provider) Environmental Sustainability team will be hosting Earth Day activities at five (5) VCH facilities (Lions Gate Hospital, UBC Hospital, Richmond General Hospital, St Mary's Hospital, and Vancouver general Hospital) on April 19th & 20th. This activity may expand to other PHC sites	2010	No End Date (Continuous)
Green Cleaning Week hosting	Ongoing/In Progress		Aramark's (Contracted Housekeeping Services provider) Environmental Sustainability team hosted Green Cleaning Week from January 25th to February 3rd, 2009, at a number of VCH facilities ( Lions Gate Hospital, UBC Hospital, St Mary's Hospital, Vancouver general Hospital, and Richmond General Hospital). This event provided information to staff on various Green cleaning products for home use, recipes to make Green cleaning products for home use, and information on water saving initiatives	This Green Cleaning hosting activity is expected to be an annual event and expanded to other VCH Sites.	2008	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
<b>Waste reduction/diversion</b>						
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress		Aramark (contracted housekeeping services provider) Healthcare's Environmental Staff conducted an assessment of current waste management at all facilities owned and run by VCH to collect baseline data of recycled material, prior to implementation of environmental initiatives and improve upon recycling programs. Recycling at VCH facilities includes paper, confidential paper, plastics, soft drink cans, cardboard, batteries, Mercury, electronics, and fluorescent and HID lighting. .	It is expected that the implementation of improved recycling programs and awareness will result in increased recycling efforts and diversion of recyclable waste from landfills. A more formalized operations policy to be implemented to facilitate the reduction and diversion of waste and recyclable materials. As a result of consolidation of Energy and Sustainability initiatives for VCH, PHC, PHSA, and FH Health Authorities, it is anticipated that a single policy will be implemented that will apply across of the four Health Authorities	2004	2011
Implement a hazardous waste reduction and disposal strategy	Complete		Maintain current compliance levels for the safe disposal of all hazardous waste	Maintain current practice	1992	No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>						

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)	Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		Practice to continue	Practice to continue with additional Green products to be implemented pending approval for use in health care facilities and by infection control authorities	2008	No End Date (Continuous)
<b>Indoor air quality</b>						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		Current Scented Products Policy does not prohibit the use of scented products except in areas where staff have medically confirmed sensitivities or have strong reactions to scented products. In all other areas, staff, patients, residents, visitors, physicians, students and contractors are encouraged to minimize the use of scented products	None at this time	2007	No End Date (Continuous)
<b>Commuting to and from home</b>						
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress		Additional funding was sought and realized for 2010/2011 through an increase in parking fees. Enrollment in VCH subsidized staff translink usage increased from 500 to 1000 staff	New funding will be used to support a communication strategy and educational opportunities	2007	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress		None	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)
Provide secure bicycle storage	Ongoing/In Progress		The largest site, Vancouver General Hospital, took steps to provide additional bicycle storage space (phase 1) and tighten up the security of the existing bicycle storage spaces	A complete audit of all sites. This will entail the exact amount of the currently offered storage space and shower facilities being offered. Steps will be taken to implement Phase 2 of the expanded bicycle storage where feasible and availability of space and funding	2007	No End Date (Continuous)
Modify parking fees or parking availability for staff/students	Ongoing/In Progress		Parking fees increased at the largest parkade at Vancouver General Hospital. This increase in revenue will help with Translink/public transport subsidies and the funding of the GreenCare TravelWise program.	Investigate further increases to parking fees at all other VCH owned parking locations	2007	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
Waste recycling programs in place at most of VCH owned facilities located in Vancouver, Richmond, North Vancouver, Sea-to-sky, and Garibaldi areas	Ongoing/In Progress		Aramark (contracted housekeeping services provider) Healthcare's Environmental Staff conducted an assessment of current waste management at most VCHA owned facilities to collect baseline data of recycled material, including paper, prior to implementation of environmental initiatives and improve upon recycling programs	It is expected that the implementation of improved recycling programs and awareness will result in increased recycling efforts and diversion of recyclable waste for landfills.	2007	No End Date (Continuous)
Composting Initiatives	Ongoing/In Progress		Composting initiatives at three (3) VCH facilities food preparation areas (UBC Hospital, Lions Gate Hospital, and Richmond Hospital).	Potential of additional composting initiatives in the food preparation areas of other VCH owned facilities where feasible	2009	No End Date (Continuous)
Single-Stream waste recycling initiative at the UBC Hospital	Ongoing/In Progress		A waste assessment of current waste management practices was conducted in November and December 2009, and January 2010 to collect baseline data prior to the implementation of or more efficient environmental recycling initiatives	Single stream waste recycling initiative was implemented in the UBC Hospital's OR, PACU, Preop, Anesthesia CSD/SPD areas on February 15, 2010, to allow for the mixing of recycling materials (paper, cardboard, tin and plastics). Program is focused on making it easier for staff to recycle, more efficient to manage by recycling materials handlers and increase the recycling volumes. Success of these new initiatives will result in the expansion of this program to other VCH facilities where feasible.	2010	No End Date (Continuous)

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Action	Status (as of 12/31/09)	Performance to Date (as of 12/31/09)		Steps Taken in 2009	Steps Planned for 2010 -2012	Start Year	End Year
Launch an online community web site (C3-Cut the Carbon) focused on all VCH and PHC staff.	In Development			Plan development	In August/September 2010, TravelWise will join with the other GreenCare programs to launch an online community site (C3: Cut the Carbon) focused on all staff at VCH. This web site will provide a direct channel of communication and networking with interested staff across the region.	2010	No End Date (Continuous)
Implement GreenCare "TravelWise" (behavioural program) strategy	In Development			Strategy Plan in development	A one (1) year strategy, including bike-to-work week/month and associated fairs/events will be contained in this strategy to be delivered in April 2010. This program uses an external consultant to help organize and focus the program	2010	No End Date (Continuous)