



# 2012 - Our Environmental Accountability Report

*Benchmarking our past.*

*Measuring our present.*

*Committing our future.*

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





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# MESSAGE FROM THE VP



**Peter Goldthorpe**  
*VP Capital Projects, Real Estate & Facilities*

“It is my pleasure to announce the release of the first Lower Mainland wide Environmental Accountability Report!

This report outlines the joint efforts of Fraser Health, Vancouver Coastal Health, Provincial Health Services, and Providence Health Care to support energy and environmental sustainability. Moreover, it reflects the on-going commitment of each health organization to take responsibility for the environmental impact of the health sector in British Columbia. This commitment is reflected in the Environmental Sustainability policies of the health organizations which state that each *“will act as a leader with respect to environmental stewardship while engaging the healthcare community in a collaborative approach towards sustainability.”*

Lower Mainland Facilities Management (LMFM) supports this effort by managing and coordinating a variety of “green” initiatives with a view to reducing our collective environmental footprint and supporting ecological health. Some of the initiatives noted in this report include energy management, recycling programs, and the Green+ Leaders program. LMFM also provides support to other partners with other support departments in areas such as transportation management and sustainable purchasing.. Momentum for all of these initiatives continues to build as does interest in promoting environmentally-friendly practices as evidenced by the growing number of members in our GreenCare community

[www.bcgreencare.ca](http://www.bcgreencare.ca) . Thanks to the tremendous efforts of health authority staff, physicians, volunteers, and others, it is clear that we are making a difference!

Providing an annual Environmental Accountability Report is a visible sign of the health sector’s commitment to accountability and transparency as it relates to environmental sustainability.

**It is my hope that this report will achieve three goals:**

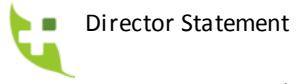
- 1. Assist readers to better understand the organizations, their environmental impact, and the challenges they face in addressing environmental concerns.
- 2. Inform key stakeholders and decision-makers of the continuing commitments required to improve our environmental footprint.
- 3. Set out goals and metrics in order to measure our progress towards these commitments.

As you will see from the report, there is a lot of activity underway. While much has been achieved to date, there is no question that we are only at the beginning of this journey. Given the size of the Lower Mainland health organizations, it is imperative that we continue to demonstrate both local leadership and be engaged in regional/global efforts to support environmental sustainability.

In closing, I hope you enjoy reading this inaugural Environmental Accountability Report. There is an inextricable link between a healthy environment and a healthy population. This report provides a glimpse of the extensive work that is done to ensure we continue to fulfil our stewardship role, and mandate as health care providers.”



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### Mauricio Acosta

*Director, Energy & Environmental Sustainability*

“Social responsibility, or rather the triple bottom line perspective of sustainability, is part of the core values, strategic imperatives and a guiding principle embedded in the nature of the Lower Mainland Health Authorities. Several individual programs and projects have been completed throughout the years. However, only when the Lower Mainland Health Care Organizations decided

to consolidate support services, was the Energy & Environmental Sustainability (EES) team created and tasked to advance the agenda and provide leadership in environmental sustainability for the entire region.

Progress to date has been significant, especially considering the challenges and pressures that the Health care system faces on a daily basis to provide British Columbians with the health care we all enjoy today. The EES team has developed a Strategic Framework for Environmental sustainability, identified 10 themes and areas of focus and priorities, and created a general GreenCare brand to group all sustainability initiatives. The main programs developed include Energy Management, Zero Waste, Water Conservation and Restoration, Active Transportation, Culture of Stewardship and the GreenCare Community, among others. The objectives, targets and progress of these programs and the 10 areas of focus are presented in this document.

The programs developed by EES require close collaboration with other departments like Business Initiatives and Support Services (BISS), Human Resources and Employee Engagement, Integrated Protection Services (IPS), Communications and Public Affairs, Health Shared Services (HSSBC), as well as external partners like BC Hydro and Fortis Energy, in order to be successful.

As such, it is my pleasure to present the first Lower Mainland Health Care Organization’s Our Environmental Accountability Report. This document does not intend to replace the Climate Neutral Action Report, prepared every year as part of the Green House Gases reduction legislation.

It is my hope that this report will evolve with time into a corporate responsibility report.”

## Snapshot

### The GREEN FUND

BC Hydro (BCH) has partnered with Vancouver Coastal Health (VCH) to pilot a new "Green Fund" in 2012.

The Green Fund is intended to be a self generating and revolving fund to support VCH energy conservation projects. Projects associated with this fund must meet the energysavings criteria set up by BCH in their PowerSmart Partner's and Express program, Continuous Optimization program, or New Construction program.



The intent of this fund is to generate energy savings, which are then directed into a fund to provide fresh seed money for new energy conservation projects.

The initial pilot will be conducted over two years, starting in 2012, and has a target of saving 6.8 GWh of energy.

With seed money from BCH and VCH, 15 energy projects were initiated in 2012 with a savings of 2.4 GWh and 30,000 GJ. This will result in the Green Fund receiving \$260,000 of funding for future projects.

It is hoped that this pilot will prove successful and the self generating fund will be rolled out in the other lower mainland health authorities.



Lower Mainland Facilities Consolidation  
Energy & Environmental Sustainability Scorecard  
Reporting: 2012

(colour indicates status of work towards GOALS)  
(circle indicates % of work completed towards TARGETS)

- Work On Goals Is Ahead of Schedule or Exceeding
- Work On Goals Is On Track But Need Monitoring
- Work On Goals In Progress But Falling Behind

TOPIC	GOAL	TARGETS	STATUS	TOPIC	GOAL	TARGETS	STATUS
<b>Culture of Stewardship</b> Pg. 15	Promote a health care community that is actively aware and engaged in creating sustainable and environmentally-conscious	1. Recruit, train and maintain a minimum of 150 Green+Leaders for each of the LM Health Organizations. 2. Increase the number of registered users by 1,000 per annum on the GreenCare Community (former C3).		<b>Water Conservation &amp; Restoration</b> Pg. 48	Reduce water consumption through behavioural and mechanical conservation measures.	1. 10% reduction in water use by 2020 (based on a 2010 baseline). 2. Ten new rainwater harvesting projects implemented by 2020. 3. Four new grey water reuse projects implemented by 2020.	
<b>Energy Conservation &amp; Climate Neutral</b> Pg. 21	Achieve climate neutral operations through conservation, efficiency, low carbon supply, and carbon offsets	1. Reduce carbon emissions by 33% by 2020 (relative to 2008). 2. Reduce energy consumption of existing building stock by 20% by 2020 (relative to 2008). 3. All new construction to achieve energy intensity targets (project-specific).		<b>Sustainable Supply Chain</b> Pg. 54	Establishing and maintaining a world-class health care supply network, with minimized waste, efficient processes, and working relations with environmental and socially responsible suppliers.	1. Reduce Paper Consumption: At source the volume of sourced paper entering the Healthcare system is reduced 2. Continuous Process Improvement: Optimize operational square footage. 3. Implement Sustainability Criteria in the RFP Process: Establish sustainability criteria for consumable and equipment RFPs.	
<b>Zero Waste</b> Pg. 31	Minimize waste generated from the health care system and all its supporting systems and operations.	1. Reduce waste to landfill and increase waste diversion by 35% by 2012, 50% by 2014 and 70% by 2015 for acute and residential care sites 2. Implement the Recycling & Resue program in all LMC Acute health care sites.		<b>Zero Toxicity</b> Pg. 57	Reduce the use of toxic chemicals, materials, and known carcinogens within the health care setting.	1. Zero use of mercury based thermometers and thermostats within Health Care facilities 2. 25% use of "green" cleaners by staff 3. Zero use of cosmetic pesticides on Health Care property 4. Reduction of PVC, DEHP, and brominated flame retardants	
<b>Active Transportation</b> Pg. 36	Make walking, cycling, car pooling, and public transit the preferred transportation and commuting options for LM Staff.	1. 25% of the staff will use active transportation to commute minimum 2 days per week by 2020. 2. Increase the number of staff who uses active transportation by 10% by 2015 (Baseline 2010). 3. Increase the number of staff that sign up for a transit pass by 5% per annum.		<b>Healthy Land &amp; Food</b> Pg. 62	Improve the connection between land use, food, healthy environments and communities	1.Increase Gardens: The number of urban agriculture / therapeutic garden projects on health care property by two (per annum). 2.Include Green Spaces: Where applicable, promote the inclusion of green spaces within health care property in major renovations and long term master planning projects. 3.Source Locally: Within the context of nutritional value and economics, support and source food locally (within British Columbia).	
<b>Regenerative Design</b> Pg. 41	Employ Regenerative Design principles to enhance the built environment and improve human and environmental health	1. All newly constructed facilities achieve LEED Gold rating. 2. Achieve the Living Building Standard or Passive House Standard for one new facility by 2015 . 3. Incorporate Regenerative Design principles into new construction and major renovation criteria by 2016.		<b>Transparent Reporting</b> Pg. 66	Provide results orientated work reports on Carbon, Energy, and overall Sustainability, that are routine, transparent, and engaging.	1. Publish a distinct annual report, which will provide an update, according to the Provincial mandate, on the organizations carbon footprint and associated actions: Carbon Neutral Action Report CNAR 2. Publish a distinct annual report, which will encompass all elements of past, present, and future energy conservation work as requested by the Power Smart Energy Manager Program sponsored by BC Hydro 3. Publish a distinct annual report, which will encompass and provide progress response on all focus areas of the Energy & Environmental Sustainability group.	





*“To work in sustainability is to work in fluid complexity.  
You don't have to know or understand all the solutions.  
But you have to lead by example and with optimistic passion.  
You have to be the lead protagonist of current sustainability  
discourse and decision making. And you have to know when  
to be the key antagonist in a larger bureaucratic system.”*

**-Glen A. Garrick**

**Sustainability Manager**

**Lower Mainland Facilities Management**



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# Who We Are

An **Energy & Environmental Sustainability** group dedicated to reducing the environmental impact of the **Lower Mainland health authorities**.

## Four health organizations are working together

Established 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)**

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.

## Coordinating our sustainability work

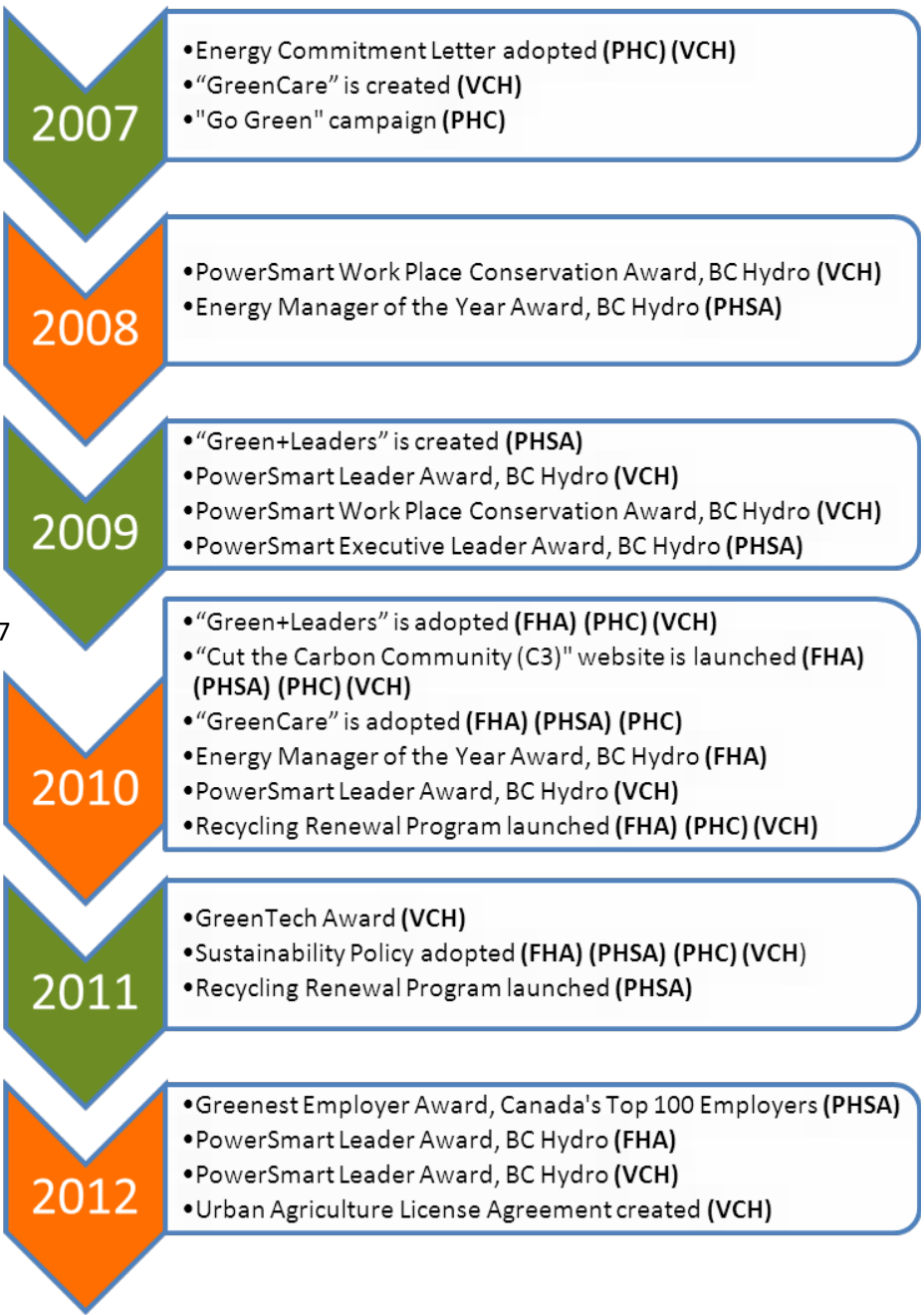
Consolidation enabled the creation of an **Energy & Environmental Sustainability (EES)** group in 2010 within the Lower Mainland Facilities Management department.

## Advisory Committee

### Environmental Sustainability Advisory Committee (ESAC)

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

## Energy & Environmental Sustainability MILESTONES





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**Fraser Health** is British Columbia’s largest health authority by population and serves some of Canada’s fastest growing communities

**Fraser Health** is one of the Province’s six health authorities.

Fraser Health serves a region that spans from Burnaby to White Rock and east to Hope.

**Fraser Health provides integrated health services**

Staff of Fraser Health equals 22,000, which includes 13,600 full-time equivalent employees, provide the following:

- **Primary health care; Community home care; Residential care; Acute medical and surgical services; Mental health and addiction services**

**Twelve hospitals including B.C’s oldest**

Among Fraser Health’s twelve acute care sites is the Royal Columbian Hospital, the oldest hospital in British Columbia, which celebrates its 150<sup>th</sup> anniversary in 2012. Located in New Westminster, it’s one of Fraser Health's busiest as well.

The Royal Columbian Hospital is a major tertiary care facility known for trauma care, neurosurgery and open-heart surgery. It has the only cardiac program capable of performing surgery for expectant women in British Columbia.

**Growing communities and greener buildings**

Three of Fraser Health’s rapidly growing communities are Abbotsford, Maple Ridge, and Surrey. All three are served by expanding community-focused acute care hospitals and related services.

This new growth provides us with opportunities to build to greener LEED standards. In 2012 the Jim Pattison Outpatient Care and Surgery Centre in Surrey became the third LEED Gold certified health care site within Fraser Health.



Quick Facts

\$2.6 billion

Operating budget 2012/13

12 hospitals

From Burnaby to Hope

7,760 beds

In residential care facilities

22,000 staff

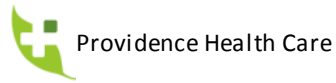
Full-time, part-time, casual



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## Providence Health Care is one of the largest faith-based (Catholic) health care organizations in Canada

**Providence Health Care (PHC) owns and/or operates 16 facilities** within the Vancouver Coastal Health region.

Providence operates one of two adult academic health science centres in the province, performs cutting-edge research in more than 30 clinical specialties, and focuses its services on six “populations of emphasis”: cardiopulmonary risks and illnesses, HIV/AIDS, mental health, renal risks and illness, specialized needs in aging and urban health.

PHC is a party to the Master Agreement between the Denominational Health Care Facilities Association and the Province. This agreement provides PHC the right to own, manage, operate and conduct the affairs of its health facilities and to plan and deliver health related services in collaboration with other health bodies. Our facilities include:

- **St. Paul's Hospital (SPH)** is an acute care, teaching and research hospital. It is home to many world-class medical and surgical programs, including heart and lung services, HIV/AIDS, mental health, emergency, critical care, kidney care and numerous surgical specialties.
- **Mount Saint Joseph Hospital (MSJ)** offers both acute care (101 beds) and extended care services (100 residents), and is respected province-wide for its multicultural focus and community programs.
- **Holy Family Hospital (HFH)** is a recognized leader in the provision of specialized rehabilitation for older adults and residential care serving patients from across BC. HFH has 75 rehabilitation beds and 142 residential beds.
- **St. Vincent's: Langara** is a 197-bed complex residential care home with a 20-bed specialized adult mental health unit.
- **St. Vincent's: Brock Fahrni (BF)** is a complex residential care home to 148 residents, many of whom are armed forces veterans.
- **St. Vincent's: Honoria Conway-Heather** is a 60 unit residence for seniors who live independently with assistance. It is part of a larger planned development for a “Campus of Care” on this site.
- **Youville Residence** is a 42-bed complex residential care home with a unit capable of serving 32 older adult mental health clients.
- **Marion Hospice** has 12 hospice beds for people who are at the end of their lives.



### Quick Facts

**\$800 million**

Operating budget 2012/13

**6,000 staff**

Including 5,026 full-time equivalents

**1,200 physicians**

Plus 1,600 volunteers





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

Provincial Health Services Authority provide specialized health services

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

PHSA 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

**\$2.5 billion**  
Operating budget 2011/12

**9,684 FTEs**  
Full time employees

**17,800 staff**  
Full-time, part-time, casual



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**Vancouver Coastal Health** is a health care provider that serves over one million people in British Columbia

Vancouver Coastal Health serves one in four British Columbians

Vancouver Coastal Health (VCH) is one of six publicly funded healthcare regions within the Canadian province of British Columbia. One in four of British Columbia’s population of 4 million people are served by Vancouver Coastal Health.

VCH provides direct and contracted health services including:

- **Primary health care**
- **Secondary, tertiary and quaternary care**
- **Home and community health care**
- **Mental health and addiction services**
- **Population and preventive health services**

Thirteen hospitals and 230+ facilities

VCH operates in part of Greater Vancouver and in the Coast Garibaldi area. We administer 103 VCH-owned facilities and 127 leased facilities. This includes 9 hospitals, 3 diagnostic and treatment centers, and 15 community health centers. VCH also contracts services to third parties, primarily long term care facilities.

As a health authority in British Columbia, the Provincial Government, through the British Columbia Ministry of Health, sets province-wide goals, standards and performance agreements for health service delivery. This includes a mandate for Vancouver Coastal Health to reduce its carbon emissions.



Quick Facts

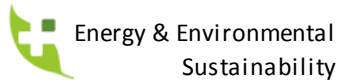
**\$3.1 billion**

Operating budget 2012/13

**22,000 staff**

Including 13,293 full-time equivalents (FTE)





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# ENERGY AND ENVIRONMENTAL SUSTAINABILITY

We consider energy and environmental sustainability to be 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 environmental impact of our health organizations.

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

## Increasing our staff’s environmental stewardship

We are committed to reducing health care’s impact on the environment, while increasing the health and wellbeing of British Columbians. This is achieved by maintaining the important link between health and the environment.

We have endorsed an Environmental Sustainability Policy, along with the other Lower Mainland health organizations. This policy includes a Vision Statement and Sustainability Conservation Goals.

## 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 name for all the 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](http://www.bcgreencare.ca).

## 10 Focus Areas

Our EES group aims to create greater sustainability in 10 key areas of focus:

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

*“The key to achieving carbon neutrality and sustainable health care is a balance among environmental conservation, improved public health and fiscal responsibility.”*

**-Mary Procter**  
**VP Finance & Planning**  
**Providence Health Care**



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## REPORTING & CONTEXT

We consider energy and environmental sustainability to a strong element in the overall delivery of health care.

### Sustainability through STEWARDSHIP

The Lower Mainland Health Authorities strive to find sustainability in three key areas:

- Financial Stewardship
- Environmental Stewardship
- Health / Social Stewardship

### An indirect focus on Financial Stewardship & Health / Social Stewardship

Our Energy & Environmental Sustainability (EES) group is focused primarily on Environmental Stewardship. But many of the topic areas have impacts on the Financial Stewardship such as cost reductions and revenue generation.

The EES group supports Social Stewardship too, including volunteering and healthier lifestyles in staff and patients.

### Why create an Environmental Accountability Report?

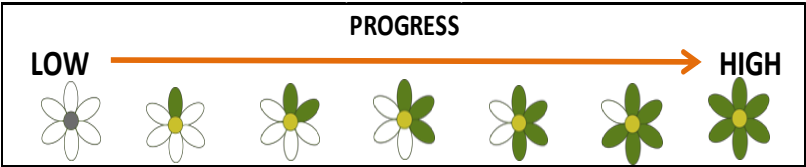
- **alignment** with the relevant health authority strategic frames / missions / goals
- **raising awareness** inside and outside the organization on its strategies and objectives, plans, performance and challenges for energy and environmental sustainability;
- helping to **engage stakeholders to create a two way dialogue**;
- **helping to engage and motivate employees** to support the organization's activities in energy & environmental responsibility;
- **facilitating benchmarking** internally and among peer organizations;
- provide **transparent reporting**
- **illustrating** how the organization is meeting its commitments and targets on energy and environmental sustainability;

### Reporting Framework


Our Environmental Accountability Report will present our current Strategic Framework and related topic areas of focus. These topic areas were chosen by a process that included prioritizing input from internal Executive Leadership, internal staff, and a review of best practices in the global health care sector.

The document will review each topic area and report on current targets successes and challenges.

Target reporting will either have a **quantifiable measure (data)** or a less quantifiable measure, which will be presented in a **flower illustration to indicate the amount of progress** that has been made towards that target.





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## GREENCARE STRATEGIC FRAMEWORK



### GreenCare Vision

A province wide health care system and community that embraces, promotes and lives a holistic approach to sustainability.

### GreenCare Mission

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

<https://bcgreencare.ca/framework>

***“The future of our health care belongs to those with  
a passion for both human and environmental health.”***

**-Anne Harvey  
VP Human Resources  
Vancouver Coastal Health**



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Culture of Stewardship	
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Zero Waste	
Active Transportation	
Regenerative Design	
Water Conservation & Restoration	
Sustainable Supply Chain	
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# CULTURE OF STEWARDSHIP

## Context

Developing a culture of energy and environmental sustainability is a key responsibility of the **Energy & Environmental Sustainability group**. However it could not be done without key partnerships with many other departments across health care.

A Culture of Stewardship within GreenCare and the Lower Mainland Health Organizations means building staff capacity and leadership to integrate sustainability values into all decision-making and actions at work.

Every two years a survey is conducted to determine what the staff value the most, concerning sustainability in health care. See figure 1 for a comparison of 2010 and 2012.

Our Culture of Stewardship focus and relevant programs, are a direct response to that survey feedback and dialogue with our Environmental Sustainability Advisory Committee

The Health Authorities are committed to decreasing the environmental impact of our staff through basic cultural change in behaviours.

## Health Impact

Direct staff engagement provides a healthy communication channel for productivity and sharing of best practices. As staff feel more engaged and that the organization shares their values, a culture of stewardship will form and reduce waste

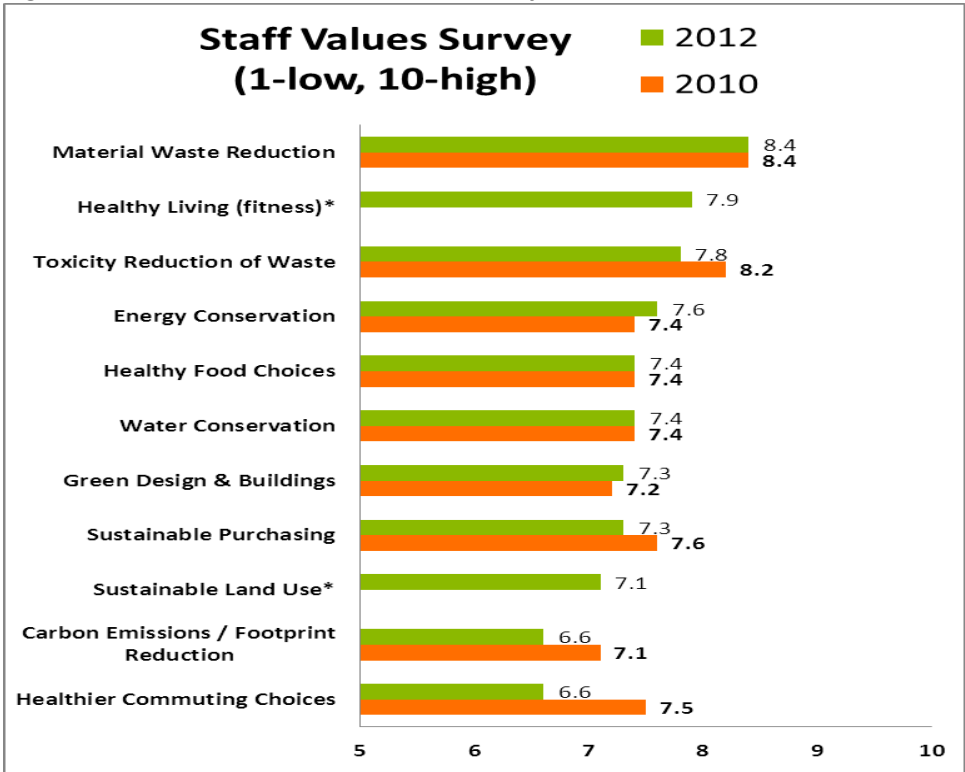
and inefficiencies.

## Economic Impact

While some initiatives may require initial investments, the benefits of an empowered and engaged workforce will include a stronger identity with the organization, better employee retention and recruitment, increased identification

of projects that could save resources.

Figure 1. “You and the Environment” Survey



\*No data for 2010

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Goals

Create a culture of sustainability (environmental, social, economic) in the workplace

Targets

- 1. Recruit Green+Leaders
  - a. Train and maintain a minimum of 150 Green+Leaders for each of the Lower Mainland Health Care Organizations
- 2. Promote the GreenCare Community Website
  - a. Increase the number of registered users by 1,000 per annum on the Greencare Community website

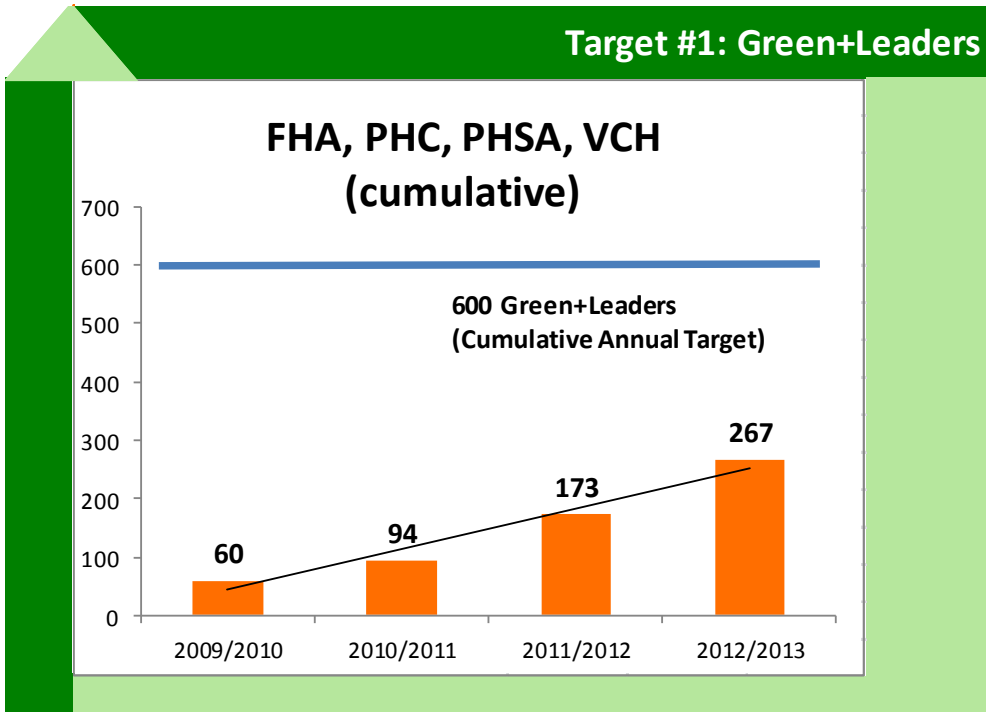
Reporting on Targets

RECRUIT GREEN+LEADERS:

Green+Leaders are staff volunteers from the Lower Mainland Health Authorities, collectively trained and supported in their role as sustainability role models. They help foster sustainable behaviour in the areas of materials reduction, energy conservation and sustainable transportation by:

- Acting as early sustainability adopters
- Modelling new behaviours for others to adopt
- Providing colleagues with information and support about sustainability initiatives
- Helping co-workers to identify alternatives, thereby lessening their environmental impact

The Green+Leaders Program was designed specifically to champion the enthusiasm and ideas of Lower Mainland Health Authority staff.



GREENCARE COMMUNITY WEBSITE:

The GreenCare Community website is primarily a staff engagement tool for the Energy & Environmental Sustainability group and secondly a public communication tool.

During 2012 the site went through major technical improvements and so very little marketing was conducted. Despite this, the site has continued to see more registered users.



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Culture of Stewardship

Energy Conservation &  
Climate Neutral

Zero Waste

Active Transportation

Regenerative Design

Water Conservation &  
Restoration

Sustainable Supply  
Chain

Zero Toxicity

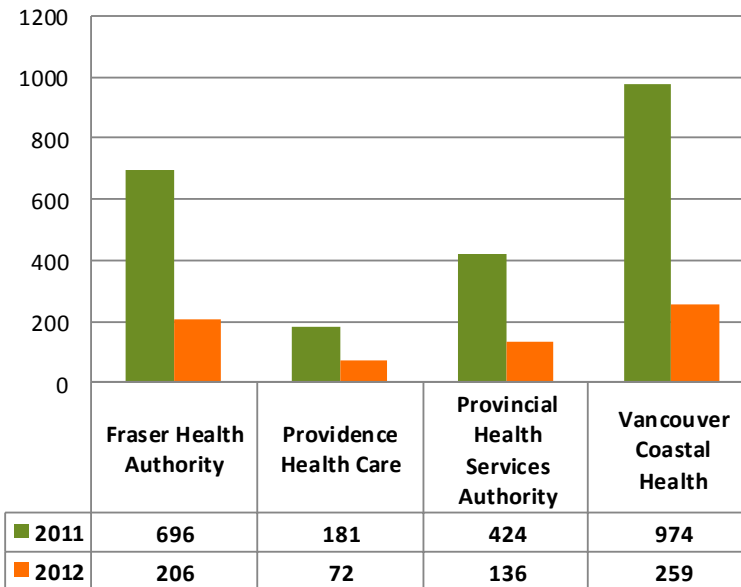
Healthy Land and Food

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## Target #2: GreenCare Community Website

### Staff Registrations on GreenCare Annually by Health Authority



**Note:** In 2011 the website was piloted. In 2012, though the site was still accessible by staff, no marketing or promotion of the site happened as redevelopment work took place. Even without marketing, the site experienced growth. The site will be relaunched in the Spring of 2013.

### Priority Actions

- Build and maintain capacity to run expanded **Green+Leaders program**
- Improve employee engagement** in alignment with health authority Human Resources targets

- Build capacity to integrate special projects inspired by the Green+Leaders program (e.g. paperless paystubs)
- Maintain social media focused engagement of staff through the **Greencare Community website**

### Key Partnerships

**Internal:** Lower Mainland Facilities Management, Human Resources, Integrated Protection Services, Business Initiatives and Support Systems

**External:** BC Hydro, FortisBC

### 2012 Progress Report

- The Greencare Community website was piloted in 2011. The energy and carbon reduction focus on design and construction of the site was accomplished through the funding support of FortisBC.
- With over 2,000 staff registering and making various conservation commitments, the pilot was seen as a success. In 2012 the site went through a transition to encompass all the elements and work of the Energy & Environmental Sustainability group. During this period no marketing or promotion of the site took place
- Despite the lack of marketing and promotion, the GreenCare Community website continued a slow viral spread as 653 more staff registered on the site.

### 2013: We Will Engage Staff

- Recruit more staff volunteers** and continue to support our Green+ Leaders.
- Hold a Food Waste Forum** for residential care stakeholders to reduce food waste. (VCH)
- Run Green+Leaders materials reduction campaign** in 120 departments across all four health authorities by the end of 2013.

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- **Run energy reduction campaigns** in 120 departments across all four health authorities by end of 2013.
- **Continue agreement with BC Hydro** in their Workplace Conservation Program.
- **Re-brand and re-launch the staff engagement website “GreenCare Community” (GCC)**, which will continue to be a website that offers stories, tips, challenges, incentives, and collaboration for staff around EES.
- **Launch a “badge” program where staff, on the GCC, can earn badges**, which are awarded for various commitments in energy & environmental conservation.

A PERSONAL NOTE from the topic LEAD



Ruth Abramson  
SUSTAINABILITY MANAGER

*“The Green+Leaders (G+L) program was successful in its fourth year. We recruited, oriented, trained, supported, and recognized our staff volunteers throughout all levels of the four lower mainland health authorities. Many G+Ls went above and beyond the program requirements of carrying out our materials and energy reduction tools, along with promoting active transportation. Last year, G+Ls completed 40 of their own unique projects including:*

- *Bike safety workshops*
- *Facilitating the implementation of light motion sensors*
- *Purchasing recycled paper*

*What’s more, we were invited to present the G+L program to the BC Hydro PowerSmart Forum in the fall and to Canada’s Top Employer conference in the winter. Participants at these presentations were not only interested in the environmental benefits of the G+L program. They also asked us how the program*

*impacts employee engagement levels. We were thrilled to report program evaluations revealed that:*

- *98% of Green+Leaders found the program enriching and would recommend it to a friend*
- *93% felt they had an opportunity to learn and grow*
- *75% said their tips and strategies were well-received by their colleagues*

*Some of our annual survey questions are also based on the ‘Engagement Matters’ questionnaire which is administered through the Human Relations departments. The rating average among G+Ls was higher than for non-G+L staff.”*

[<RUTH.ABRAMSON@FRASERHEALTH.CA>](mailto:RUTH.ABRAMSON@FRASERHEALTH.CA)



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Snapshot

Meet Nadia Gale: she's a PHSA employee and a Green+Leader

**Q. Describe your role at the BC Cancer Agency.**  
I'm section head of histopathology. It's a clinical lab, where we do some research, but mostly work with tissue samples from patients in active treatment. We do cancer screening, type cancer, and test for certain markers. I've been in this position for almost three years, and prior to this worked at the CTAG lab, or the Centre for Translational and Applied Genomics Lab at PHSA.

**Q. And you're a Green+Leader as well. Why did you get involved in that initiative?**  
I saw the call for Green+Leaders education a few years ago; this is my third year being involved. It seemed like it wasn't a huge time commitment, and was something I felt that could benefit our lab. I don't consider myself really "green", but I feel like I do think about the choices I make. I may not always make the right ones but it's something I think about on a daily basis.

**Q. How has your participation in the Ride to Conquer Cancer or being a Green+Leader inspired your work colleagues?**  
I hope I've been an inspiration to some of my colleagues. One of our staff members has stopped driving to work and plans to start riding to work when the weather gets a bit nicer, and I would say this is indirectly related to both Green+Leaders and my participation in the Ride.

It's hard to quantify, but most of my co-workers in our area take the bus to work or walk; very few people drive. Generally there is more interest in cycling, mostly around how people can join the Ride to Conquer Cancer.

In terms of the Ride to Conquer Cancer, discussion is something that happens all the time; that's why I was asked to start a team in the first place. And now we're the largest 'internal' team -- that means a team that's associated with the cancer agency. It's a thread that holds us together -- we share the feeling of wanting to be connected to the community. The riders on our team have a common vision.



Snapshot

Kevin MacDuff, Leader, HR Data Analysis for VCH is a Green+Leader with a can-do attitude.

**Q. What inspired you to get involved in G+L?**  
I signed up for the Green+Leader program because someone forwarded me the information, saying: "You do a lot already, why not consolidate it and join the Green+Leader team?" I love that it is designed as a grassroots program, utilizing simple tools to inspire and inform action. The program echoed my feeling of self-empowerment in the workplace. I really do believe I can achieve change at work - sometimes just on a small scale, sometimes on a larger scale.

This program makes so much sense to me as it leverages people's desire to create change and it builds capacity within teams and groups, so that there is this inspiring can-do attitude that emerges.

**Q. What have you achieved as Green+Leader at this stage?**  
The greatest success is the real sense of community on our floor at 601 West Broadway, which centers on these green initiatives that we all participate in.

During the 'Materials & Waste Reduction' module of the program, I worked on the "One Less Cup" campaign. Over two weeks I gathered the disposable cups that came into our office. The idea was to gather data on the kind of impact there would be if our group stopped using disposable cups. I'm a data guy and having the collection of cups displayed as a visual example of our waste for everyone to see was quite eye opening.

At first, I thought the solution was to start a system where we bought a bunch of re-usable "real" mugs and housed them at one of the coffee shops nearby, meaning that everyone could go and get a coffee in a re-usable mug and then return it. Instead, we started a "coffee club" in the office. We now buy really good beans from Elysian coffee - they are organic, fair trade and delicious - and we brew our own coffee in the office. The results? We are now all drinking really good coffee and most importantly, it's been a community-building experience for our team. We are all learning more about coffee and different people step-up to buy it, make it...and then we all drink it. Everyone enjoys it and we are more connected as a team!

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Your Green+Leader is: \_\_\_\_\_

**GREEN+LEADERS**

Snapshot



Green+Leaders

We’ve recruited **265** staff volunteers throughout the Lower Mainland

300 G+L campaigns

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

40 special projects

G+L staff volunteers implemented an additional 31 projects in LMHA departments; examples include implementing battery recycling programs, setting up paperless timekeeping procedures, rolling-out a hospital-wide recycling program at a P3 site and creating a working group for Laboratory staff to reduce waste and energy use.

22 Educational Events

The program offered 22 different educational events to support and provide additional training for the volunteers.





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# ENERGY CONSERVATION & CLIMATE NEUTRAL

## Context

For the **third year** in a row, all four lower mainland health care organizations have achieved **CARBON NEUTRAL** status through the Pacific Carbon Trust.

The energy we use today has an environmental impact on climate change. We depend on energy for almost everything in our lives. Embracing an energy efficient lifestyle today will help you get a better life tomorrow. By slowing down the demand for energy and we ensure a better future for generations to come.

Health Impact

British Columbia is fortunate to have an abundance of water resources and hydro-electric plants to provide energy. Unfortunately not all of the British Columbia’s needs can be supplied via hydro-electricity, and hydro-electricity is not entirely a clean energy source.

Imported energy often is sourced from fossil fuel burning energy plants. And the creation of dams for hydro-electricity has an environmental impact and an increase in methane released from standing water.

Economic Impact

The LMHAs spend over \$35 Million annually on energy to operate our buildings, which represents over 95% of our GHG emissions. As one of the most energy intensive sectors, we have an intensified need to reduce our energy consumption and our reliance on fossil fuels.

## Goals

Achieve energy efficiency (and support the achievement of climate neutral operations) through the implementation of energy retrofits and optimization projects and energy conservation campaigns aimed to reduce consumption

## Targets

- 1. **Reduce carbon emissions**
  - a. by 33% by 2020 (relative to a 2007 baseline)
- 2. **Reduce energy consumption**
  - a. of existing building stock by 20% by 2020 (relative to a 2007 baseline)
- 3. **Energy Efficiency Targets** with all new and retrofit construction projects

## Reporting on Targets

### REDUCE CARBON EMISSIONS:

The health authority carbon footprints are reported in accordance to the B.C. Provincial Government’s Climate Action Secretariat’s requirements, which include reporting on three main criteria:

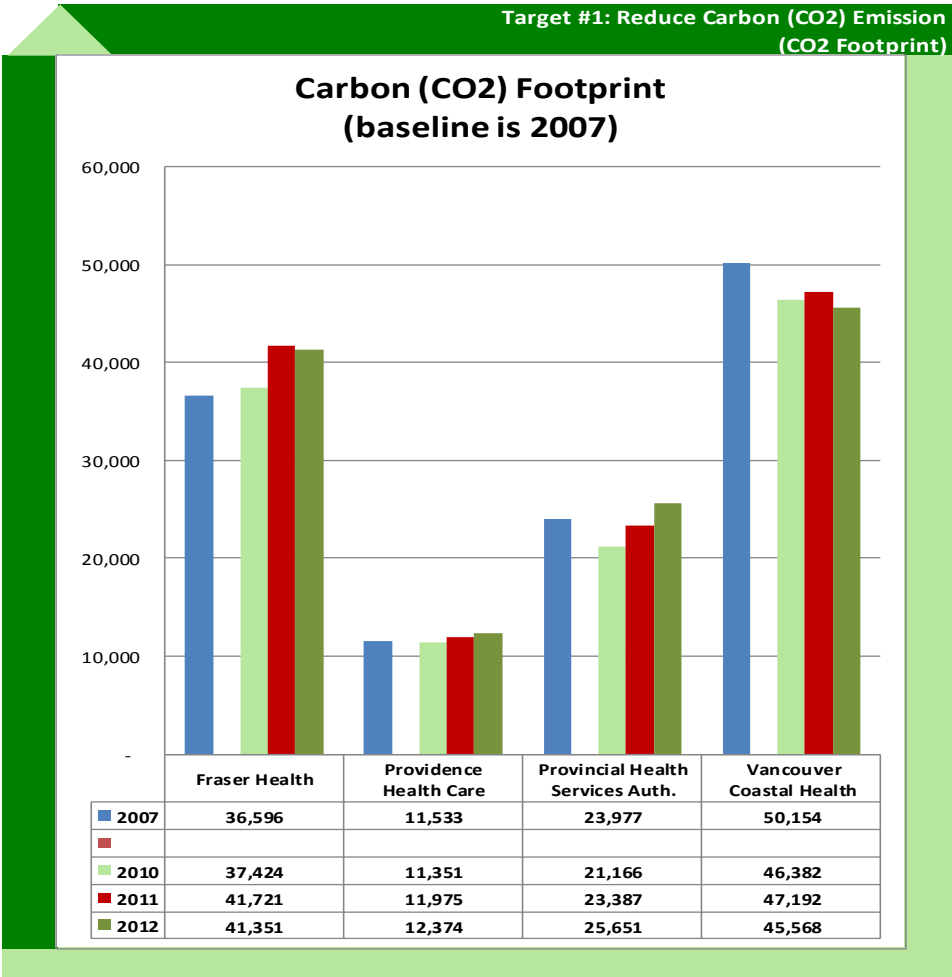
- Direct and Indirect Emissions from our buildings (energy use);
- Fleet (kilometers);
- Waste (paper)

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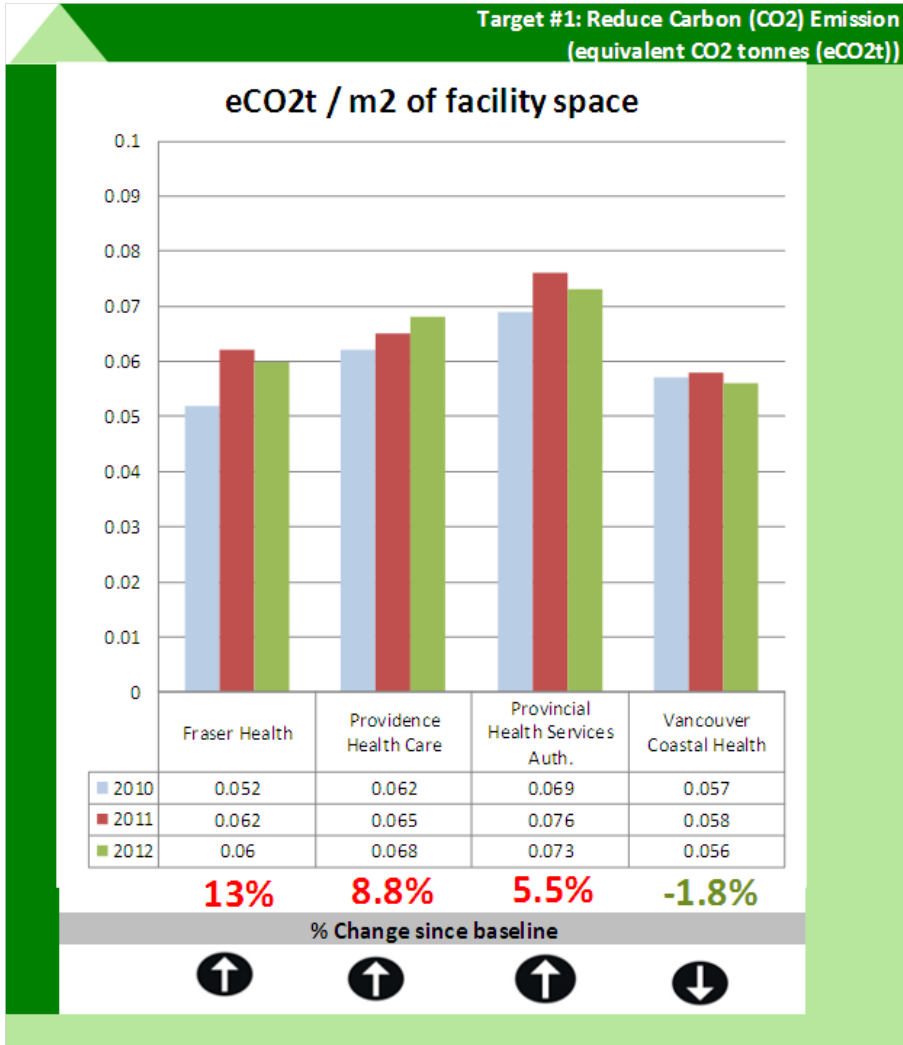
We use the British Columbia’s Climate Action Secretariat’s SMARTTOOL to calculate our carbon footprint. This tool contains all the factors used to determine the most accurate footprint according to our region.

Using their criteria, our carbon footprint is roughly 96% energy, 1% fleet, and 3% waste related.

As of 2012, targets are based simply on a cumulative carbon footprint, regardless of facility space and weather changes. **Incorporating facility space changes and annual changes in weather (colder vs. warmer years) would provide a better indicator of performance.**



In the near future it is hoped that the data will be normalized according to these changes.



**Note:** Chart is unadjusted for **WEATHER** and **FACILITY SPACE** changes. See below for a more detailed explanation of performance.

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REDUCE ENERGY CONSUMPTION:

**ekWh:** Equivalent kilowatt hours (ekwh) is a sum conversion of electricity and natural gas.

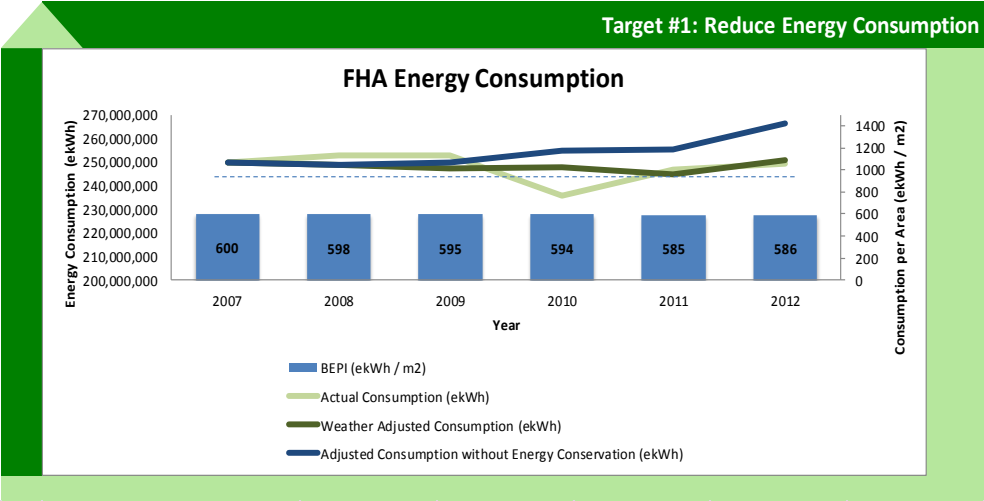
**BEPI:** BEPI is a “Building Energy Performance Index”. It is a standard energy performance metric dividing ekWh by the square meter space of facility.

**Adjusted Consumption without Energy Conservation (ekWh):** This is a measure of forecasted energy consumption, including facility space changes, excluding all energy conservation projects. In other words, what would consumption have been if we did no energy conservation projects over the time period.

Slight variations in data are a result of small variations in fiscal year versus calendar year reporting.

The sum totals and square meters of facility space relate to all health care core sites only and do not include P3 buildings and lease buildings.

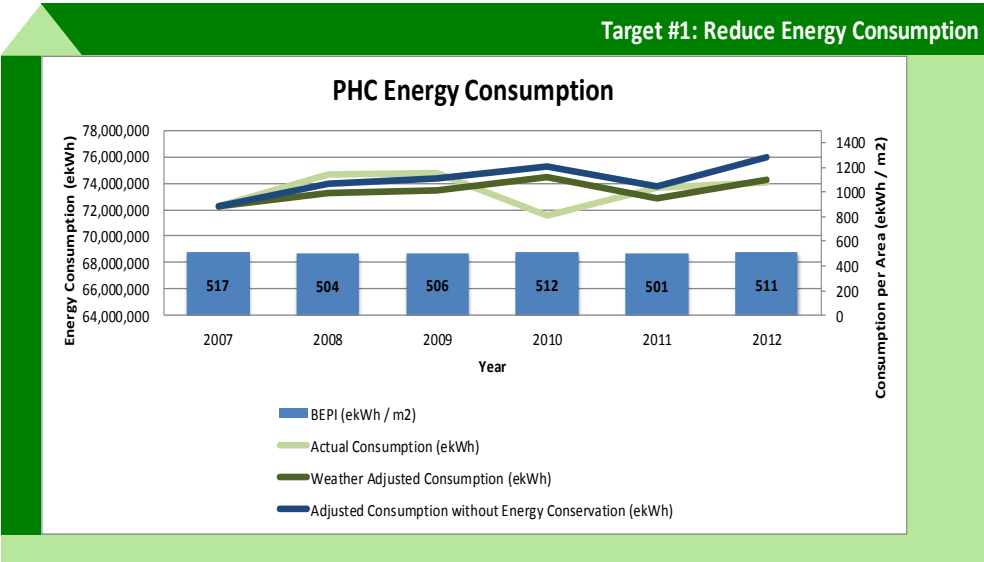
Target #1: Reduce Energy Consumption					
FHA					
	2008-09	2009-10	2010-11	2011-12	2012-13
Actual consumption:					
total natural gas (GJ)	592,235	527,077	557,504	578,314	552,580
total electricity (kwh)	91,908,826	93,141,520	89,450,929	87,825,461	92,607,986
sum total (ekwh)	256,418,699	239,551,962	244,313,253	248,468,339	246,102,676
m2 of facility space	415,830	415,213	416,878	418,461	427,418
(ekwh) / m2 of facility space	617	601	589	583	572
Weather and space adjusted consumption:					
total natural gas (GJ)	592,235	570,840	571,279	570,118	568,766
total electricity (kwh)	91,908,826	90,783,390	87,015,350	85,739,265	86,471,813
sum total (ekwh)	256,418,699	249,350,056	245,704,116	244,105,499	244,462,548
cumulative % change	N/A	-2.8%	-4.2%	-4.8%	-4.7%



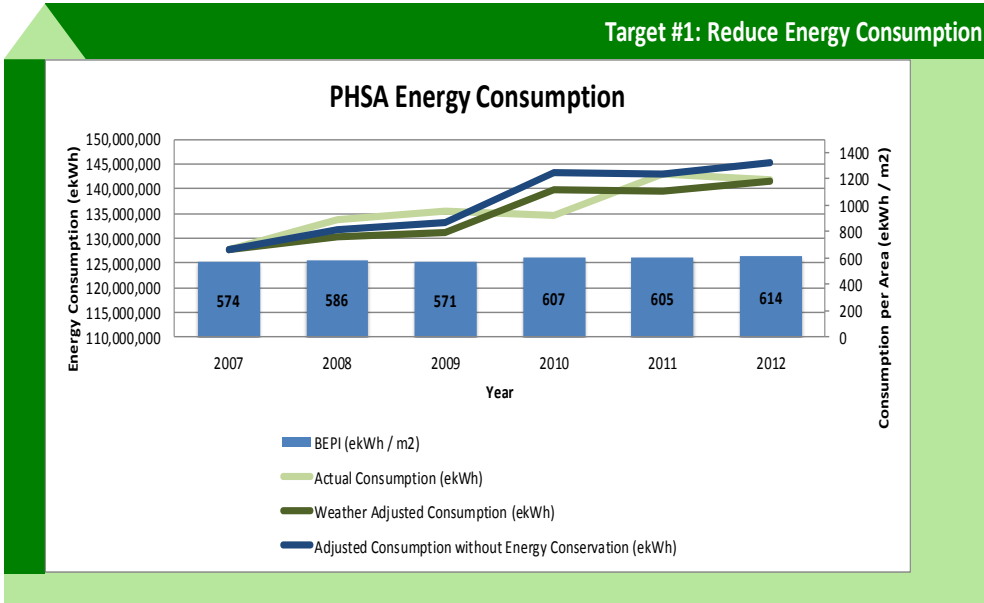
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Target #1: Reduce Energy Consumption					
PHC					
	2008-09	2009-10	2010-11	2011-12	2012-13
Actual consumption:					
total natural gas (GJ)	161,281	142,848	153,387	159,638	153,514
Weather and space adjusted consumption					
total natural gas (GJ)	161,281	161,107	162,954	162,268	162,344
total electricity (kwh)	30,657,159	31,535,243	30,775,244	30,278,371	30,182,255
sum total (ekwh) <sup>1</sup>	75,457,509	76,287,269	76,040,239	75,352,778	75,277,835
cumulative % change	N/A	1.1%	0.8%	-0.1%	-0.2%



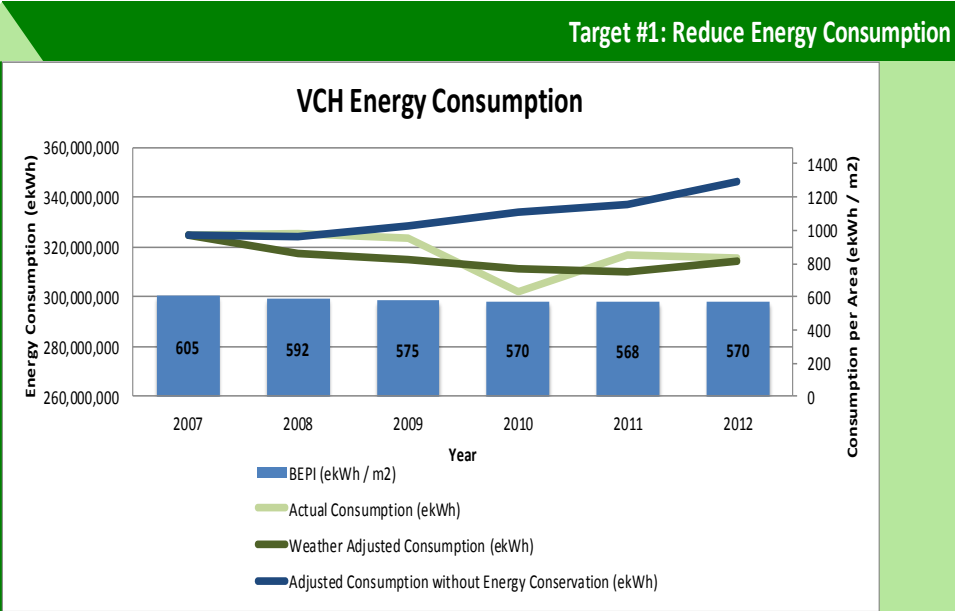
Target #1: Reduce Energy Consumption					
PHSA					
	2008-09	2009-10	2010-11	2011-12	2012-13
Actual consumption:					
total natural gas (GJ)	294,526	266,581	290,372	304,219	286,680
total electricity (kwh)	56,350,158	56,873,114	58,862,731	59,325,436	59,938,674
sum total (ekwh) <sup>1</sup>	138,162,922	130,923,364	139,521,741	143,830,917	139,572,083
m2 of facility space <sup>1</sup>	222,592	229,682	230,572	230,572	230,722
(ekwh) / m2 of facility space	621	607	620	627	600
Weather and space adjusted consumption					
total natural gas (GJ)	294,526	304,428	312,321	315,964	302,469
total electricity (kwh)	56,350,158	54,831,727	56,175,228	56,687,152	54,431,574
sum total (ekwh) <sup>1</sup>	138,162,922	139,395,088	142,931,186	144,454,870	138,450,848
cumulative % change	N/A	0.9%	3.5%	4.6%	0.2%





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Target #1: Reduce Energy Consumption					
VCH					
	2008-09	2009-10	2010-11	2011-12	2012-13
Actual consumption:					
total natural gas (GJ)	799,313	723,109	751,276	770,720	747,180
total electricity (kwh)	104,657,035	106,474,899	104,784,874	105,062,688	106,336,785
sum total (ekwh) <sup>1</sup>	326,688,602	307,338,671	313,472,819	319,151,748	313,886,951
m2 of facility space	544,646	545,816	545,906	552,250	552,250
(ekwh) / m2 of facility space	600	585	584	559	563
Weather and space adjusted consumption					
total natural gas (GJ)	799,313	776,412	779,483	757,973	768,196
total electricity (kwh)	104,657,035	103,561,073	102,455,232	97,974,076	97,698,989
sum total (ekwh) <sup>1</sup>	326,688,602	319,231,246	318,978,461	308,522,300	311,086,937
cumulative % change	N/A	-2.3%	-2.4%	-5.6%	-4.8%



ENERGY EFFICIENCY TARGETS:

Energy Guidelines were developed in 2010 which include specific energy intensity targets by building type for new construction and major renovation projects. At least one presentation per year has been made to the Lower Mainland Facilities Management Capital Planning group in order to explain the purpose of the guidelines and encourage project managers to issue the guidelines with their RFP documents. The extent to which the guidelines are provided to the consultants is increasing; however, the extent to which the guidelines are being achieved will take time to confirm.

Target #3: Energy Efficiency Targets with all new and retrofit construction projects			
	2010	2011	2012
Fraser Health			
Providence Health Care			
Provincial Health Services Auth.			
Vancouver Coastal Health			

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Priority Actions

- Energy conservation and carbon neutrality through:
- a) Existing building optimization and upgrades
  - b) Awareness and education campaigns
  - c) Energy efficiency standards and policies
  - d) Energy efficient design for new construction and renovations
  - e) Energy efficient and low carbon supply through district energy
  - f) On-site renewable energy generation

Key Partnerships

- Internal:** Lower Mainland Facilities Management, Business Initiative and Support Services, Clinical staff.
- External:** BC Hydro, Fortis BC, Lower Mainland Municipalities

2012 Progress Report

FRASER HEALTH

- **Various energy retrofits** have been carried out in 2012. Resulting in energy savings of 15,777 GJ (4.4 eGWh) and Green House Gas (GHG) savings of 557 tCO2e. As these projects were completed at different times during the year, the prorated estimated savings are 9,568 GJ (2.7 eGWh) and 329 tCO2e.
- **Seven gas meters** for buildings across the region were added to our Pulse/Energy Management Information System as part of the Fortis BC EnerTracker program.

- **Boiler replaced with condensing type** in the Charles Barnham Pavilion and the domestic hot water system was upgraded to a gas fired instantaneous system at Surrey Memorial Hospital.
- **Solar Hot water system**, complete with electric hot water tanks, installed to replace an inefficient gas fired system at Queens Park Care Centre.
- **Condensate recovery system** installed at Ridge Meadows Hospital.
- **Various ventilation upgrades** started in 2011 were fully completed in 2012 at Chilliwack General, Eagle Ridge and Mission Memorial Hospitals
- **Major lighting retrofit** started at Langley Memorial Hospital.
- **7 minor lighting retrofits** carried out at various locations as part of the BC Hydro Power Smart Express program, including fluorescent upgrades, CFL and LED conversions.
- **Virtualization of servers** within the Lower Mainland Health Authorities is in progress. This will affect eight FHA core sites with a potential annual electrical savings of 1 GWh.
- **Energy use data for leased buildings** (only utility accounts managed by FHA) added to utility management database.
- **A Spot the Energy Savings Workshop** was coordinated with the help from NRCan and Prism Engineering, aimed specifically at Facilities Maintenance and Operations (FMO) staff within our sites.

PROVIDENCE HEALTH CARE

- **Energy Retrofit Projects:** Completed four energy retrofit projects for estimated annual savings of: 450,000 kWh of electricity, 6,140 GJ of natural gas, and 320 tCO2e of GHG's (as detailed on left)
- **Six Air Leakage Assessments:** Completed Air Leakage Assessments at six PHC facilities (MSJ, HFH, BF, Langara, Youville, and Honoria-Conway) in order to identify opportunities to reduce energy consumption and occupant comfort through improved air sealing
- **Five Energy Assessments:** Took advantage of FortisBC funding to complete "Energy Assessments" at five sites (MSJ, HFH, Langara, Youville,

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& Honoria-Conway) in order to identify HVAC gas conservation opportunities

- **Real Time Gas Meter at Langara:** Fortis BC’s EnerTracker Program provided a free real-time gas consumption meter at Langara Residence with online access to hourly consumption data
- **UBC CEEN Student Energy Audit:** We participated in the UBC Clean Energy Engineering masters student energy audit program, enabling one PHC facility (Langara Residence) to have a free energy audits
- **Green Playbook Version 1:** 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
- **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 new projects

PROVINCIAL HEALTH SERVICES AUTHORITY

- **Four energy retrofit projects** were completed 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 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 Air Leakage Assessments:** Completed Air Leakage Assessments at six (6) PHSA facilities totaling over 72,000m<sup>2</sup> in order to identify opportunities to reduce energy consumption through improved air sealing
- **Four Energy Assessments:** Took advantage of FortisBC funding to complete "Energy Assessments" at four (4) sites (SHHC, FVCC, CCSI, and VICC) totaling over 32,000m<sup>2</sup> 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 new 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

VANCOUVER COASTAL HEALTH

- **All owned VCH buildings have a Building Energy Performance Index (BEPI** - ekWh/m2/yr) for Acute, and Extended/Residential Care facilities. Building Energy Performance Index (BEPI - ekWh/m2/yr) for Core VCH Acute Care facilities and Nursing and Residential Care facilities are updated quarterly
- **Twenty energy retrofit projects** were completed in 2012 in 16 buildings for an estimated annual savings of 2.95 million kWh of Electricity, 22,700 GJ of natural gas and a reduction of 1,218 tCO2e of GHG emissions per annum.
- **Initiated the investigation phase of BC hydro's Continuous Optimization Project (COP)** in seven (7) separate (1,584,716 sq ft) VCH buildings.

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- **Five real time Pulse meters** were implemented in five separate VCH buildings in 2012.
- **Virtualization of servers** within the Lower Mainland Health Authorities (FHA, VCHA, PHSA, and PHC) is in progress. This will affect four VCH core sites (VGH, LGH, Squamish Hospital, and Powell River Hospital) with a potential savings of 450,000 kWh. Progress report for the BC Health Shared Services (HSSBC) indicates that they were 30% completed in 2012
- **All computer desktops, laptops, and flat screen monitors**, purchased and/or leased in 2012, are ENERGY STAR models and replace energy inefficient units.

2013: We Will Conserve Energy

FRASER HEALTH

**Add owned buildings to the Energy Star Portfolio Manager** as a pilot initiative, which will launch in Canada in June 2013.

**Boiler damper controls and isolation strategies** to be installed for the boiler plant at Peace Arch Hospital.

**Complete various HVAC upgrades** as part of the BC Hydro Continuous Optimization program (COp) at Royal Columbian, Burnaby, Delta, Chilliwack General, Ridge Meadows and Fraser Canyon Hospitals, plus three Care/Residential facilities.

**Complete Major Lighting Retrofit** at Langley Memorial Hospital, including the external parking lots.

**Lighting retrofit** to be completed at Burnaby Hospital, including the upgrade of the remaining T12 fluorescents light fixtures to T8.

**Develop a Lighting Strategy and Standard document** to enforce the use of energy efficiency solutions related to lighting upgrades in the Lower Mainland Health facilities.

**Control upgrades and adjustment** to be completed at Burnaby, Delta and Royal Columbian Hospitals as part of the BC Hydro COp.

**BC Hydro COp investigation studies** to be competed at five sites and implementation of the approved energy conservation measures will commence.

**Implement a Fault Diagnostic Detection software tool** at Mission Memorial Hospital as a pilot project.

PROVIDENCE HEALTH CARE

**Holy Family Hospital Direct Digital Control (DDC)Upgrade:** Complete a DDC upgrade at Holy Family Hospital

**Holy Family Hospital Continuous Optimization (C.Op.) Program:** Complete the Investigation phase of the BC Hydro C.Op. Program at Holy Family Hospital

**Initiate the GreenCare Community Website:** Complete the refresh of existing Cut the Carbon Community (C3) website. The new version 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 redesigned and will use more innovative engagement and behavioural change strategies.

PROVINCIAL HEALTH SERVICES AUTHORITY

**Children’s and Women’s Health Care chilled water plant upgrades:** Complete Phase one of the CWHC chilled water plant upgrades (Phase two pending available funding).



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

**Coil Cleaning:** Complete coil cleaning at remaining six buildings at CWHC totaling over 88,000m<sup>2</sup>.

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

**VANCOUVER COASTAL HEALTH**

**Server virtualization** project to continue and will hopefully be completed in 2013.

**Additional Pulse meters** will be installed in other buildings pending the additional implementation of BC Hydro's Continuous Optimization Program (COp) in other VCH facilities

**Implement lighting retrofits in eight VCH owned facilities** (1,660,000 square feet) at the VGH site, Richmond Hospital and Evergreen House in North Vancouver. Retrofits will include T12 lamps and magnetic ballasts replacement, installation of lighting controls, emergency exit signs as well as occupancy sensors. These facilities went through a detailed lighting audit process in 2010/2011. Estimated savings of 1.44 million kWh per annum and reduction of GHG emissions by 37 tCO<sub>2</sub>e per annum

**Eighteen BC hydro Continuous Optimization Projects (COp)** will be completed during 2013-2014-2015. Another twelve (67%) will be completed during 2013 and 2014 and all will include mechanical retrofits/updates energy measures for heating, cooling and ventilation. Estimated annual savings from these energy measures are 26,159 GJ from natural gas, 4.3 million kWh of electricity, and 1,428 tCO<sub>2</sub>e GHG emissions reductions per annum, an estimated reduction of 3.1% from our 2012 carbon footprint.

A PERSONAL NOTE from the topic LEAD



Rob Bradley  
ENERGY MANAGER, Fraser Health

*“Energy conservation is not a one-time deal; it’s an on-going commitment and we all need to be on board the energy reduction train. All four Health Organizations have been active in energy management practices for several*

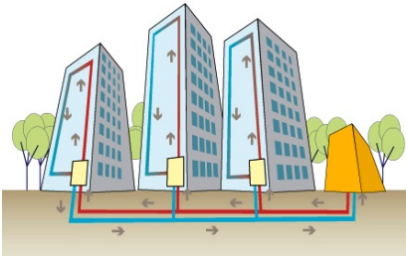
*years, but there is lot more to achieve. We have a Strategic Energy Management Plan, which we update on an annual basis, and this document helps us track our performance, review targets and plan for future energy initiatives.*

*The relationship between energy use and the effect on climate change has been a hot debated topic for a number of years. We do know that the use of fossil fuels, such as natural gas (albeit the cleanest fossil fuel), does create Greenhouse Gases (GHG) and these GHG are affecting the earths temperatures’. Our BC Government has been proactive and set aggressive GHG reduction targets as part of the 2007 GHG Reduction Target Act. For the third year in row we have been carbon neutral by reducing our in-scope emissions and by purchasing offsets. This is a significant achievement!”*

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Snapshot

Taking Aim at Distric Energy

District Energy Systems (DES) can help hospitals lower energy cost and carbon emissions, and increase energy security.

The Lower Mainland Facilities Management is in the process of evaluating the development of a DES at one or more of the various lower mainland health care sites.

Merits of District Energy Systems:

- 1) Allows for economy of scale required to access to capital intensive low carbon technologies.
- 2) Centralized maintenance and operations that allow for savings in:
  - Energy use: a central plant is more energy efficient than many smaller plants
  - Space: in mechanical rooms, no boiler flue to roof
- 3) A framework for sharing the risks of new technologies
- 4) Among a larger number of consumers, and a flexible platform for the adoption of new fuels and technologies over time.



Snapshot

Taking our pulse... energy pulse, that is.

Did you know that the Lower Mainland Health Authorities monitor real time electrical and natural gas usage at more than 40 sites?

In short, building operators and the energy management team use this data to quickly identify and correct energy anomalies, uncover opportunities for energy conservation, all while continually learning how a building performs under a wide range of circumstances.

How's the data collected?

The information in the Real Time Data graphs is collected from onsite electrical metering equipment that updates every hour. The Health Authority Pulse Energy Dashboard provides detailed information on energy usage, trending, site comparison, energy equivalencies and a site's energy intensity, which is a measurement of energy in relation to an indicator, like square footage.

How's the data used?

Real time reporting and alerts ensure that critical consumption information isn't lost into a sea of data. It highlights the anomalies. Real Time Data helps the energy management team understand the power loads of a building over a specific period of time be it a day, a week or a month. It also to helps identify power saving opportunities and provides immediate feedback as to whether or not a energy conservation initiative or measure is a success.

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# ZERO WASTE

## Context

Reducing material and organic waste has been a mission of the **Business Initiatives and Support Systems (BISS)** department and the **Energy & Environmental Sustainability group**. These two groups have key strategic partnerships along with various vendors to create key strategies and programs focused on greatly reducing this waste.

Implementing Zero Waste means eliminate all discharges to land, water or air that are a threat to planetary, human, animal or plant health. Businesses and communities that achieve over 90% diversion of waste from landfills and incinerators are theoretically considered to be successful in achieving Zero Waste.

Health Impact

Our number one priority when working in healthcare is patient care. To do this effectively we routinely have the need to use a broad range of medical office supplies and equipment.

Unfortunately the use of a broad range of supplies and within the context of regulations, health and safety, leads to an enormous amount of waste being sent to landfills or to incineration.

There are health impacts of disposing waste to landfill and incineration, as well as trucking waste to recycling and composting plants.

We can reduce these impacts by reducing the amount of consumables we use in the first place; by reusing and recycling and composting waste to maximize a materials life cycle and by collecting and trucking all waste streams efficiently.

The Lower Mainland Health Authorities recognize the impact of their waste and are committed to reducing and minimizing this waste related risk to human and environmental health.

Economic Impact

Waste diversion is necessary to reduce the environmental impact of our daily activities however it does involve require funding.

Staff can assist in reducing the financial impact by acting consciously in their choice of healthcare consumables to reduce waste production and in segregating waste correctly to reduce contamination.

## Goals

**Minimize waste generated from the Health Care system and all its supporting systems and operations**

## Targets

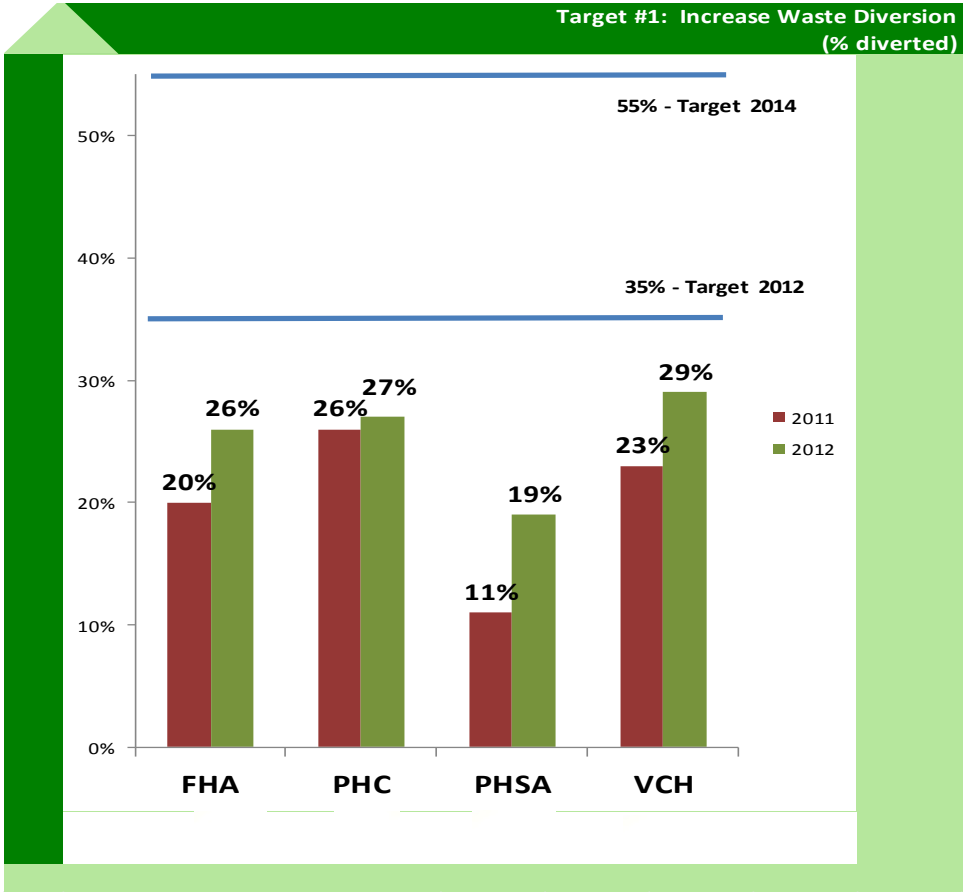
- 1. **Reduce waste to landfill \***
  - a. Increase our waste diversion rate to
    - i. **35%** by 2011/2012;
    - ii. **50%** by 2013/2014;
    - iii. **70%** by 2014/2015

\*for acute and residential care sites

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Reporting on Targets

REDUCED WASTE TO LANDFILL:



\*Actual diversion rates are higher than reported as not all recycling and organics wastes are weighed. (Source: BISS)

Priority Actions

- a. Implement and manage Recycling Renewal Program at 100% of acute and residential sites
- b. Implement Recycling Renewal Program at 100% of leased sites
- c. Implement a sustainability procurement program
- d. Conduct a needs assessment regarding hazardous waste priorities
- e. Implement and manage a rigorous biohazardous waste training program to avoid contamination of other waste streams
- f. Eliminate organics going to landfill (through collection or other means) at all leased and owned sites (aligns with Metro Vancouver ban on organics from landfill)

Key Partnerships

**Internal:** Business Initiatives and Support Systems, Health Shared Services British Columbia, Lower Mainland Facilities Management

**External:** Metro Vancouver

2012 Progress Report

Accomplishments:

- **Recycling Program** at Surrey Memorial Hospital, Czorny Alzheimer Centre and Felburn Care facility (Fraser Health).
- **Pre recycling waste audits** completed at Jim Pattison Outpatient Care and Surgery Centre and Surrey Memorial Hospital (Fraser Health).
- **Post recycling waste audits** completed at Burnaby Hospital and Surrey Memorial Hospital (Fraser Health).



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- **The Green + Leaders program** launched a new tool to eliminate bottled water.
- **BISS rolled out a new initiative for the collection of food scraps waste.** It has been rolled out at acute and residential care (FH, VCH, PHSA, and PHC) kitchens, with the exception of Fraser Canyon Hospital (FH).
- **BISS engaged Stericycle for biomedical waste** to carry out audits in several facilities. They also carried out ad-hoc education and developed standardized waste segregation signage.
- **Implemented the Recycling Renewal Program** at 13 VCH acute care and residential sites since 2010.
- **St. Paul’s Hospital (PHC)** continues to have one of the highest waste diversion rates of all the acute care sites in the Lower Mainland; with over 35% of solid waste being diverted from landfill.
- **Rechargeable batteries are used in ARAMARK-staff pagers**, instead of disposable batteries. ARAMARK is VCH’s contracted housekeeping provider.
- **Food Waste Forum** with acute care stakeholders to plan food waste reduction initiatives.
- **Solid Waste Diversion Strategy:** As part of Children’s & Women’s Hospital (PHSA) Redevelopment, a Campus Solid Waste Diversion Strategy was completed early in 2013. 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

2013: We Will Reduce Waste

Tasks:

- **BISS and EES will continue to roll out the Recycling program across the region.**
  - In FH, it will be the Jim Pattison Outpatient Care and Surgery Centre, Peach Arch Hospital, Langley Memorial Hospital and Queen's Park Care Centre.
  - 20 VCH Community Health Centres sites.
  - In PHSA, it will be Children's Hospital, Woman's Hospital and the Sunny Hill Health Centre. In 2013-2014, we will implement recycling at the Cancer Research Centre and BC Cancer Agency Vancouver.
  - Recruit staff champions that will help facilitate greater adoption and compliance with the Recycling program.
- **BISS will continue to support** the catering vendors on the organics diversion initiative.
- **EES will continue to support** the implementation of office organics diversion.
- **BISS will implement a biomedical waste reduction** initiative which aims to reduce biomedical waste by 10% by April 2014. Education and new signage will be provided to staff to help differentiate between garbage and biomedical waste.

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A PERSONAL NOTE from the topic LEAD



Ruth Abramson  
SUSTAINABILITY MANAGER

“Last year was a challenging one for the Recycling Renewal Program. While we were able to implement the program at several new sites, the roll-out of the program also experienced some significant delays. The largest delay was attributed to incidents of contamination—the most serious being when biomedical waste was found in recycling streams. Our recycling vendor--the only one in the Lower Mainland willing to accept recycling coming from hospitals—put us on notice. The LMHAs were at risk of losing the opportunity to recycle some streams such as soft and rigid plastics throughout all our LMHA hospitals and residences if we could not stop the contamination.

To help solve the problem, the Recycling Renewal team increased visual audits of recycling bins at all implemented hospitals. We also sent out notices, posters, and stickers while personally visiting all departments to inform them of the risks and items which are banned from recycling including:

- Syringe casings
- Gloves
- Tubing
- Specimen jars
- IV bags
- Pharmaceutical vials

After three months of working closely with our staff, the contamination issue was resolved. However, the incident made it clear that the Recycling Renewal Program requires ongoing substantial attention from all key parties involved including:

- The BISS department and its appointed Site Support Managers
- Housekeeping
- Clinical Staff and recycling champions
- The Recycling Renewal Team

We are confident that such incidents will not continue to occur and that the LMHAs will have robust recycling systems in place at more sites in the near future.”

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Snapshot

UBC-Hospital staff recycle the equivalent of a gray whale



**Measuring success!**  
Since the recycling renewal program's inception at UBC Hospital six months ago, 30% of waste has been diverted. This equates to approximately 14.5 tons of recycling per month, equivalent to the weight of one gray whale!

**Kudos to UBC Hospital!**  
Our waste diversion target in 2011 for sites in the Lower Mainland where the recycling renewal program has been set up was 35%. The recycling renewal team would like to thank staff and physicians for their dedication. We look forward to your continued support in working towards exceeding our waste diversion targets in 2012.

**A great effort.**  
Visual audits of the recycling bins during 2011 showed that during each audit, an average of 82% of bins contained less than 5% contaminants (non-recyclable material or the wrong types of recyclables – e.g. paper in the plastic bin). While this is good, there's always room to improve!

**A few tips for further success.**  
A waste audit in December showed that approximately 20% of the material in garbage bins is recyclable. Please think before you throw! The audit also showed that organic food waste now represents 15% of the total waste stream – an 8% decrease since May. This dramatic drop can likely be attributed to the great new composting initiative taking place in the cafeteria and kitchens at UBC Hospital.

**Please note that the following materials cannot be recycled under any circumstances:**  
•Coffee cups; Paper towel; Tubing (including IV and oxygen tubing and masks); IV bags;  
•Gloves; Anything that has come into contact with blood.

These items should always be disposed to garbage or biomedical waste (whichever is most appropriate).

Snapshot

Organics (food) Waste



The Business Initiatives and Support Services (BISS) Food Waste Reduction and Sustainability Committee has implemented a comprehensive recycling and organics waste diversion program in patient and retail kitchens in acute and residential healthcare facilities in the Lower Mainland.

> **100% of patient kitchens** are recycling plastics, tin cans, glass and refundable beverage containers.

> **98% of facilities** are segregating organics waste and the remaining two hospitals at Hope and Powell River will be added when collection companies are found.

Organics waste was diverted in two stages; firstly food trimmings from meal preparation and secondly, patient tray waste. The organics is composted at a local facility in Ladner that uses the resulting compost to grow lawn turf. BISS has purchased decomposers for Burnaby, VGH and Langara hospitals into which organics are directly placed. The decomposers reduce the volume of waste that needs to be transported off site. Both in-house and contracted food services staff has fully supported the program and enabled the Health Authorities to make gains on the waste diversion targets.

Segregation of organics waste has increased our waste diversion rate by approximately 10%. At VGH alone, 3,000 meals are prepared daily and from this 300 kg of organics waste is diverted.

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# ACTIVE TRANSPORTATION

## Context

Integrated Protection Services (IPS) along with the EES group and the Vancouver Coastal Health Human Resources Department have partnered to organize and implement various strategies and programs for encouraging staff to be more active in their (commute) transportation. All this work falls under our umbrella of “Active Transportation”.

Within the context of health care, Active Transportation encompasses any form of travel in which an individual actively pursues transportation alternative to single occupancy vehicle use. This means transit, carpooling, and the shuttle service will be included within this topic area.

### Health Impact

Air pollution is a major contributor to a degradation of human and environmental health. Pollution from vehicle usage is a negative impact on regional human and environmental

health.

As well as air pollution, Canada is facing a growing population health challenge with obesity.

A recent internal survey indicated that over 70% of the staff from the various Lower Mainland Health Authorities drive to work in single occupancy vehicles. Yet, nearly 50% of staff reside less than 10km from their work place.

Inactive staff and pollution producing vehicles being used for commutes is a growing concern for human and environmental health.

### Economic Impact

Obesity and air pollution related illnesses have a financial impact on the health care institutions offering health care. Reducing these public health problems will have a direct financial impact.

In addition, the Health Authorities are slowly attempting to phase out subsidized parking for staff but it still remains a financial challenge to several Health Authorities.

## Goals

**Make walking, cycling, carpooling, and public transit the preferred transportation and commuting options for LM Health Organizations Staff.**

## Targets

- 1. **Active Transportation**
  - a. 25% of the staff will use active transportation to commute minimum 2 days per week by 2020
- 2. **Biking to Work**
  - a. Increase the number of staff who uses active transportation by 10% by 2015 (Baseline 2010)
- 3. **Using Public Transit**
  - a. Increase the number of staff that sign up for a transit pass by 5% per annum



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Reporting on Targets

ACTIVE TRANSPORTATION:

This target encompasses all forms of commuting outside of single occupancy vehicles. Examples include walking, biking, transit, and carpooling.

Since 2010, various surveys have been conducted to help determine the baseline. With the addition of a new Transportation Demand Management (TDM) Coordinator in late 2012, a comprehensive overview of active transportation behaviours by staff should be achieved.

Target #1: Increase the staff that use active transportation to commute (minimum 2 days per week)			
	2010	2011	2012
Fraser Health			
Providence Health Care			
Provincial Health Services Auth.			
Vancouver Coastal Health			

BIKING TO WORK:

Across the region, significant progress has been made to encourage staff to bike to work. But other forms (carpooling, walking, etc...) have been difficult to measure.

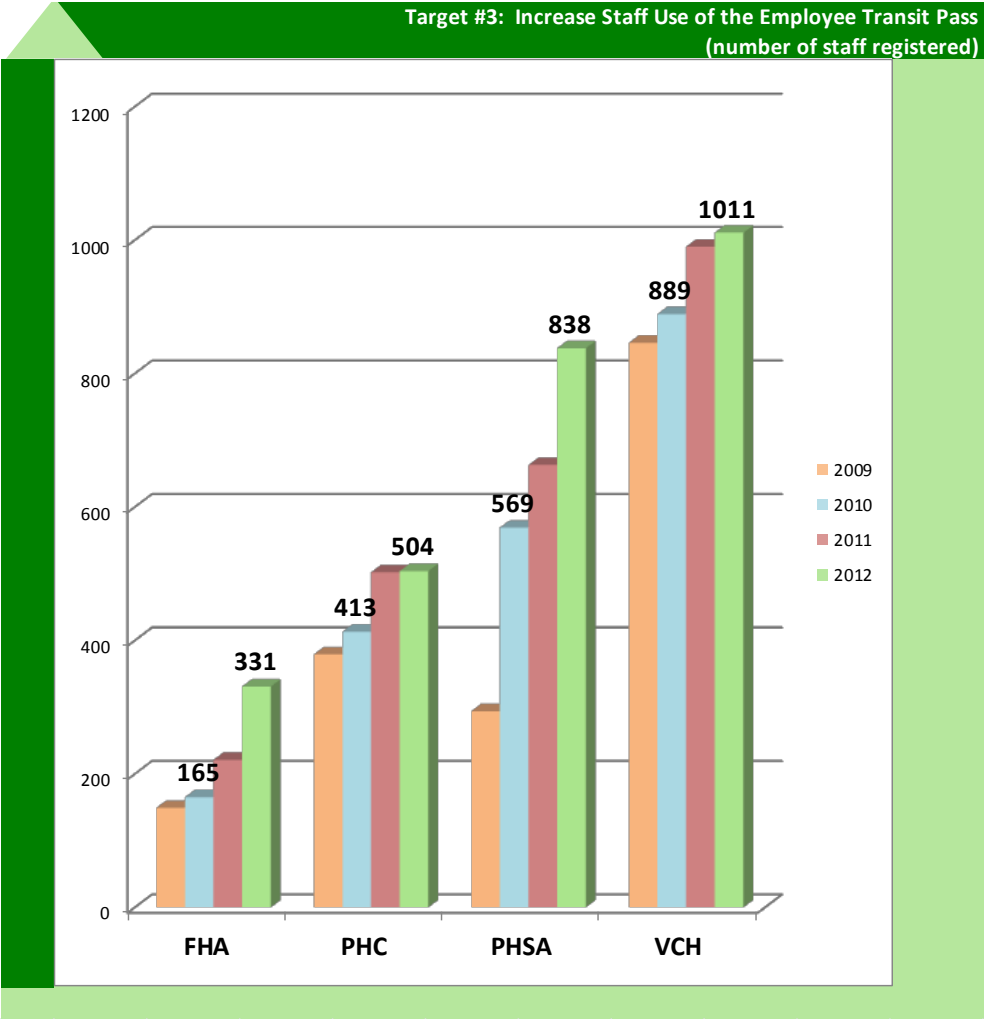
Since 2010, various surveys have been conducted to help determine the baseline. With the addition of a new TDM Coordinator in late 2012, it is planned that a fresh audit of biking behaviours by staff will be achieved.

Target #2: Increase the number of staff who bicycle to work by 2% per annum			
	2010	2011	2012
Fraser Health			
Providence Health Care			
Provincial Health Services Auth.			
Vancouver Coastal Health			

USING PUBLIC TRANSIT:

In partnership with Translink, the health care organizations offer each staff member the Translink corporate discount of approximately 15%. Two organizations (Vancouver Coastal Health and Provincial Health Services Authority) offer a subsidy above that discount of \$132 to \$156 per year (depending on zones). VCH started offering that discount in 2009 and PHSA began offering that discount in 2010.

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Priority Actions

- A. Bicycling and Public Transit
- B. Shuttle Service
- C. Ride Share / Car-Share / Car-Pooling
- D. Telecommuting
- E. Electric Vehicles
- F. Behavioural "Clean Commuter" and "Idle Free" Campaigns
- G. Clean Commuter of the Year (COY) Award

Key Partnerships

**Internal:** Integrated Protection Services, Lower Mainland Facilities Management, Human Resources.

**External:** Cambie Corridor Consortium, Translink, Surrey Active Transportation Group, Better Environmentally Sound Transportation (BEST).

2012 Progress Report

Accomplishments:

- **A collaboration between FH, VCH, PHSA, and PHC to conduct a Clean Commuter Challenge**, which encouraged staff to become more active in their commutes to work. Staff formed teams and competed to see who could reduce their commute carbon footprint the most.
- **A new staff shuttle service** was implemented between select Surrey sites, along with a pilot program at Children’s and Women’s Hospitals which takes staff to and from the Cambie Station

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- **We subjected all vehicles to stringent annual AirCare testing** that optimized fuel efficiency standards.
- **Staff shuttle services were provided to employees** travelling between various PHC and VCH sites.
- **Green+Leaders ran a sustainable transportation campaign** to encourage walking, cycling or public transit for work commutes.
- **Anti-idling signage** is in place at all building air intake areas and in receiving dock areas. Delivery vehicles drivers and taxi drivers are requested to shut off engines at all public entrances
- **Travel Smart Program:** Worked with TransLink and their new TravelSmart program to create customized travel plans for hospital sites across the lower mainland.
- **IPS created a position for a Transportation Demand Management Coordinator** to improve the travel options from site to site with a prime focus to promote and establish alternative transportation solutions. Position to be filled in early 2013.

**2013: We Will Facilitate Greener Commutes**

**Tasks:**

- Install electric car charging stations** at Lions Gate Hospital, Royal Columbian, Burnaby and Ridge Meadows hospitals. (FH)
- Run a 2013 Clean Commuter Challenge** for staff across FH, PHC, PHSA, and VCH.
- Continue the Green+Leaders** sustainable transportation focus including a campaign to encourage walking, cycling or public transit for work commute.
- Conduct audits 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.

**Children’s and Women’s Health Centre (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.

**A PERSONAL NOTE from the topic LEAD**



**Ruth Abramson**  
**SUSTAINABILITY MANAGER**

*“These are exciting times for the Active Transportation file. With the onboarding of a new Transportation Demand Management Coordinator, the recent formation of the Surrey Active Transportation Group, the launching of new shuttle services, and more, the LMHAs are now venturing into much needed--and awaited--programs and services.*

*Moving forward on the active transportation file also means gathering together strategic partners from a variety of departments including Energy and Environmental Sustainability, Internal Protection Services, and Human Resources. Together, we will launch the Lower Mainland’s first collaborative process for strategic planning on the topic. Our goal is to ensure that--with our variety of stakeholders already involved in promoting active transportation --we will all begin to work towards the same vision together. We also want to collaborate in order to maximize efficiencies and capture synergies. Together, we will find new ways to foster the most robust and active transportation program that we can for all the Lower Mainland Health Authorities.”*

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Snapshot

Maria Gunkel is the Commuter of the Year: 2012

In appreciation for her outstanding, long-term dedication to carbon neutral commuting, **Maria Gunkel, microbiologist at the VGH** was recognized as the VCH 2012 'Commuter of the Year'.

Maria Gunkel has **cycled to work for the past 32 years!**

Maria lives in North Vancouver and started bike commuting when she worked at Lions Gate Hospital for 27 years; the 10km bike trip became a daily habit, so when she transferred to work at VGH 5 years ago, she couldn't give up the joy of riding her bike to work.

Maria cycles from North Vancouver to VGH, a distance of 40km roundtrip that takes her across the Second Narrows bridge, five days a week, rain or shine. When there is snow on the ground, she leaves her bike at home and if it is really pouring with rain, she jumps on the bus.

At 65 years old, Maria is a deserving recipient of the Commuter of the Year award and an inspiration to us all! When asked what advice she had for others she said, ***“Once you are in the habit of cycling, it hooks you! The biggest hurdle is getting into the routine but once you do, it is such a good trade off and I feel healthy and fit because I cycle so much!”***

Anyone can be nominated as the Commuter of the Year. Keep a look out for next year's call for nominations and drop by VGH's Commuter Center to see how they can support you in your commute.

Snapshot

2012 Clean Commuter Challenge

During May of 2012, as part of our new GreenCare Community website [bcgreencare.ca](http://bcgreencare.ca), we ran a Clean Commuter Challenge and asked Lower Mainland staff at Fraser Health, the Provincial Health Services Authority, Providence Health Care and Vancouver Coastal to commit to taking actions to reduce their personal commuting carbon footprint.

The Clean Commuter Challenge by numbers:

**11 teams**  
participated in the challenge

**48% reduction**  
in participating staff's commuting carbon footprint

**249 goals**  
made by staff to support sustainable commuting





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# REGENERATIVE DESIGN

## Context

Currently all health care new construction projects are mandated to achieve **LEED Gold certification**. But our long term vision goes beyond Green Design, recognizing that we can do better than just “doing less harm”. Regenerative Design creates buildings, systems, and infrastructure that restore, renew and even revitalize; creating a sustainable built environment that positively impacts society and nature.

We recognize this as a vision that can only be realized over the long term. It informs our actions today and ensures our short term steps are aligned with the ultimate goal.

Health Impact

A growing body of evidence is illustrating the importance of regenerative design and health care. Rating systems like the Green Guide for Health Care measure the **holistic approach to creating healing and healthy environments for patients and staff.**

Simple steps of regenerative design, like creating a green wall, can dramatically improve healing. Patients with views of nature or green space has improved recovery times. <http://www.greenspacehealth.com/tag/hospitals/>

Economic Impact

The health authorities pay millions of dollars of energy and water costs every year. Designed to be **holistic and improve life cycle cost efficiency**, rating systems like the Leadership in Energy and Environmental Design (LEED) and BOMA BEST

have been embraced by the health authorities as drivers for economic efficiency in health care design.

## Goals

**Employ Regenerative Design principles and processes to enhance the built environment and improve human and environmental health.**


## Targets









- 1. **Regenerative Design Culture**
  - a. Incorporate green and Regenerative Design principle Into the healthcare culture and vocabulary by 2014
- 2. **Regenerative Standards**
  - a. Achieve the Living Building Standard or Passive House Standard for one new facility by 2015
- 3. **Design Guidelines**
  - a. Apply EES Design Guidelines to all new construction and major renovations by 2016

## Reporting on Targets

### INCORPORATE GREEN AND REGENERATIVE DESIGN PRINCIPLES:









There are pockets and examples of evidence that the collective consciousness of the health authorities is moving in a direction aligned with the notion of regeneration.

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Target #1: Incorporate Green and Regenerative Design Culture				
	2010	2011	2012	
Fraser Health	inc.			
Providence Health Care	inc.			
Provincial Health Services Auth.	inc.			
Vancouver Coastal Health	inc.			









ACHIEVE THE LIVING BUILDING STANDARD OR PASSIVE HOUSE STANDARD:

Moving from LEED to Passive House or Living Building Standard is more of a leap than a step, so preparatory actions are necessary before the leap is made.

Target #2: Achieve the Living Building Standard or Passive House Standard Facility				
	2010	2011	2012	
Fraser Health	inc.			
Providence Health Care	inc.			
Provincial Health Services Auth.	inc.			
Vancouver Coastal Health	inc.			

INCORPORATE REGENERATIVE DESIGN PRINCIPLES:

While Regenerative design goes beyond the current LEED rating system, all of the efforts that have been made to achieve LEED Certification are steps in the direction of regenerative design.

Target #3: Incorporate Regenerative Design principles				
	2010	2011	2012	
Fraser Health	inc.			
Providence Health Care	inc.			
Provincial Health Services Auth.	inc.			
Vancouver Coastal Health	inc.			

Priority Actions

- a. Apply Regenerative Design principles to Pearson Dogwood Redevelopment
- b. Complete Passive House Study to inform Richmond Lions Manner business case
- c. Educational presentations to create awareness of these approaches within LMFM

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## Key Partnerships

**Internal:** Lower Mainland Facilities Management, Business Integrated Support Systems, Clinical staff.

**External:** BC Hydro, Fortis BC, Metro Vancouver

## 2012 Progress Report

### Accomplishments:

- **It's now mandatory to incorporate an Integrated Design Process** for all new construction and major renovation projects at VCH. New projects, currently in various stages of development in 2012, incorporated Integrated Design Process and LEAN principles.
- **LEED NC Gold standards are being used** in the construction of a residential care facility extension (4,830 square meters) of St Mary's Hospital in Sechelt.
- **Design and planning was completed for the HOpe Centre**, a mental health residential care facility in North Vancouver. Construction was started in December, 2012. Completion and occupancy is scheduled for 2014.
- **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. During the planning process PHSA applied imPROVE (its leading

edge health-care-specific adaptation of LEAN) to identify and remove waste and improve patient care. This approach of continuous improvement is aligned with regenerative design.

- **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.

## 2013: We will improve building efficiency

### Tasks:

- **All New Construction projects** will be designed and built to LEED Gold standards.
- **Passive House** Design will be considered for new residential care projects
- **Evaluate using Perkins Will Precautionary List and the Living Building Challenge's Red List** for all project design.
- **Continue to use the GOLD LEED standard** in new facility design and construction, and the LEED standard for all major renovations.
- **Continue to encourage the BOMA BEST** standard in our leased buildings.
- **Investigate using Evidence Based Design and LEAN** principles in building designs.
- **Evaluate using Perkins Will Precautionary List** and the Living Building Challenge's Red List in all project design.
- **Joe and Rosalie Segal Care Centre** at VGH will be a 100 bed mental health care centre, currently in the design and planning stage. It will be opened in Vancouver at the VGH site in 2014/2015
- **HOpe Centre in North Vancouver**, a mental health residential care facility, currently under construction, will be opened in 2014 / 15.

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- 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.
- Achieve LEED-CI Certification for BC Centre For Excellence (BCCFE).
- 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.

A PERSONAL NOTE from the topic LEAD

Alex Hutton  
ENERGY MANAGER



“This focus area is intended to capture our aspirations and progress toward our inevitable destination: a holistic, integrated, and benevolent relationship with all life. My hope is that projects like the Pearson-Dogwood Redevelopment will demonstrate that it’s not just possible to move toward this vision, but that progress can be more rapid and reap more rewards than we can imagine.”

[<ALEX.HUTTON@FRASERHEALTH.CA>](mailto:ALEX.HUTTON@FRASERHEALTH.CA)





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LEED Building Sites (2012)		City	Targeted / Achieved Certification	Status	Certification Date
FH	Mission Memorial Complex Care Centre	Mission	Gold	(construction)	TBD
FH	Surrey Memorial Hospital Acute Care Tower	Surrey	Gold	(construction)	TBD
FH	Cypress Lodge CTR	Coquitlam	Gold	(operational)	TBD
FH	Langley Memorial Cottage	Langley	Certified	(operational)	TBD
FH	Czorny Alzheimer Centre - Phase 2	Surrey	Silver	(operational)	TBD
FH	Maternity Ward Renovation, Peace Arch Hospital	White Rock	Certified	(operational)	TBD
FH	Creekside Health and Housing Centre	Surrey	Certified	(operational)	TBD
FH	Maxxine Wright Place	Surrey	Gold	(operational)	11/10/2012
FH	Creekside Withdrawal Management Centre	Surrey	Certified	(operational)	11/10/2012
FH	Jim Pattison Outpatient Care & Surgery Centre	Surrey	Gold	(operational)	19/09/2012
FH	Chilliwack Hospital Redevelopment	Chilliwack	Certified	(operational)	19/04/2011
FH	Good Smaraitan Canada, Victoria Heights Assisted Living	New Westminster	Certified	(operational)	23/06/2010
FH	Czorny Alzheimer Centre	Surrey	Certified	(operational)	19/03/2010
FH	Abbotsford Regional Hospital and Cancer Centre	Abbotsford	Gold	(operational)	10/09/2009
FH	CareLife Maple Ridge	Maple Ridge	Silver	(operational)	17/12/2008
FH	Cottonwood Lodge - A FH Residential Mental Health Facility	Coquitlam	Gold	(operational)	14/09/2007
PHSA	British Columbia Cancer Agency Centre for the North	Prince George	TBD	(operational)	TBD
PHSA	CWHC Clinical Support Building	Vancouver	TBD	(operational)	TBD
PHSA	Centre for Translational Research	Vancouver	TBD	(operational)	TBD
PHSA	Mental Health Building	Vancouver	Silver	(operational)	03/11/2011
PHSA	BC Cancer Research Centre	Vancouver	Gold	(operational)	22/07/2005
VCH	Joe and Rosalie Segal Care Centre	Vancouver	Gold	(construction)	TBD
VCH	Lions Gate Hospital - HOpe Centre	North Vancouver	Gold	(construction)	TBD
VCH	St. Mary's Hospital	Sechelt	Gold	(operational)	TBD
PHC	BC Centre for Excellence West Wing Renovation	Vancouver	TBD	(construction)	TBD
PHC	St. Paul's Hospital 9A Mental Health Unit (PHC Society)	Vancouver	Certified	(operational)	09/11/2006

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Snapshot

Opening of St. Mary's Hospital in Sechelt, Sunshine Coast

St. Mary's Hospital in Sechelt, is a new facility, which balances state-of-the-art care with a connection to nature that fosters health and healing.

Adding benefits

The 5,400-square-metre addition includes new larger emergency and radiology departments, intensive care rooms and a new labour and delivery unit, all of which are equipped with state-of-the-art equipment. The project also accommodates two new floors of single-occupancy inpatient rooms that provide the highest standard of infection control. The new and existing hospital buildings are organized around a light-filled lobby, which marks the new main entrance to the hospital.

Working with sustainable design

Targeting LEED Gold certification, St. Mary's Hospital was designed with the goal of becoming North America's first carbon-neutral hospital. In addition to a high-performance building envelope, the project includes 125 boreholes, each 250 feet deep, which provide a source of zero-carbon energy for heating and cooling the building.

Signs of success

"Thanks to the tremendous efforts of so many people, St. Mary's will have state-of-the-art medical technology, superior standards of infection control and almost double the amount of space—all in an environmentally responsible building that we can be proud of," says Wendy Hansson, chief operating officer at Vancouver Coastal Health. "This will enable staff and physicians to provide the best quality of patient care to Sunshine Coast residents and offer a leading-edge example of modern healthcare."



Snapshot

Awarded LEED Gold: Jim Pattison Outpatient Care and Surgery Centre (JPOCSC) in Surrey

With a design inspired by the nearby Green Timbers forest, the Jim Pattison Outpatient Care and Surgery Centre (JPOCSC) in Surrey instantly transports patients entering the building to a place where healing and the environment co-exist.

Promoting a sustainable future

The new Fraser Health building has earned LEED® Gold certification from the Canada Green Building Council (CaGBC). Leadership in Energy and Environmental Design (LEED®) is a green building rating system administered by the CaGBC. It encourages and accelerates the design, construction, and operation of high performance green buildings and promotes a sustainable future.

The Jim Pattison Outpatient Care and Surgery Centre earned this prestigious designation by being innovative with how outpatient services are delivered, by contributing to a culture of sustainability and by reducing its carbon footprint.

Dr. Nigel Murray, president and CEO, Fraser Health Authority, commented: "The Jim Pattison Outpatient Care and Surgery Centre is a creative example of how we can care for our patients while caring for the environment. By incorporating the natural beauty surrounding the centre into the core design of the building, we've managed to create a space for both patients and employees alike that is calming, and conducive to the healing process."

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## 2.5 Acre Pearson Dogwood Redevelopment

**Develop an Acclaimed Healthy Community**  
The Pearson Dogwood Redevelopment Project aspires to create an exceptional mixed use community. Socially, culturally and environmentally, the Pearson Dogwood lands will become a model community where the architecture and planning set a ***global standard for sustainability and healthy living.***

It will be a complete neighbourhood inspired by the integration of community health and wellness facilities and residential living, stimulated by community gardens, new park space and easy access to modern transportation. The Pearson Dogwood Redevelopment will embrace its historic role in healthcare and nurture the body and spirit by offering an array of lifestyle choices for residents and community members. This complete community will offer a range of residential living options from supported and assisted housing to meet the varied and complex care needs of adults with disabilities and older adults to affordable workforce housing, rental housing, market housing and non-market housing. All these housing options will be set within a community setting that will include retail amenities, healthcare, rehabilitation and recreational facilities. Community neighbours will enjoy easy access to new community health services. Located between the burgeoning Vancouver communities of Oakridge and Marpole, the Pearson-Dogwood Lands will emerge as one of the most active neighbourhoods in the city - a catalyst demonstrating the impact of creative design and power of co-creation with our partners in community building. Environmentally, the effect will be neutral. Economically, the Pearson Dogwood Redevelopment holds the potential to create a new model for health care capital funding. Through redevelopment of this valuable 25.4 acre site, VCH intends to generate sufficient funding to build state-of-the-art complex care and residential care facilities and add capacity to existing residential care housing stock throughout VCH. This funding model could potentially establish a new model for all health authorities throughout British Columbia.

**The Pearson Dogwood lands will be more than a modern community health precinct.** Health care professionals and planners the world over will come to the Pearson Dogwood site to learn from the successful integration of community health services and facilities with compact residential living. In time, this acclaimed community will remake the map of Vancouver, and cement the city's commitment to healthy living and progressive urban design.

Snapshot

Pearson Dogwood Redevelopment

Vancouver Coastal Health Living well.



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# WATER CONSERVATION & RESTORATION

## Context

As global stewardship of water conservation is a key focus area, we are committed to addressing the growing demand and falling supply of this precious commodity.

The regional challenge with this area is the impression of water abundance and diminishes the perceived need to conserve water, with 100-160 cm of rain per year.

### Health Impact

Clean water is a critical element for human health. Though the Coastal British Columbia region has a strong supply of fresh water, many parts of the world do have challenges

obtaining enough clean water to support local economies and human health. In addition, climate change has become a growing challenge and the future supply of local fresh water may come under threat.

### Economic Impact

**\$4.2 million**

During the fiscal 2011 / 2012 year, the Lower Mainland Health Authorities collectively paid \$4.2 million dollars for

water use and disposal. The City of Vancouver and other local municipalities are currently in the process of raising the rates to hedge against a need to build additional water reserves for housing fresh water.

## Goals

**Reduce water consumption through behavioural and mechanical conservation measures.**

**Restore and reuse grey water for irrigation purposes.**

## Targets

- 1. Water Use Reduction**
  - a. 10% reduction in water use by 2020. (based on 2010 baseline)
- 2. Rainwater Harvestng**
  - a. 10 new rainwater harvesting projects implemented by 2020
- 3. Grey Water Reuse**
  - a. 4 new grey water reuse projects implemented by 2020

## Reporting on Targets

### WATER CONSERVATION:

The health care organizations have been consistently tracking water consumption since 2009 / 2010.

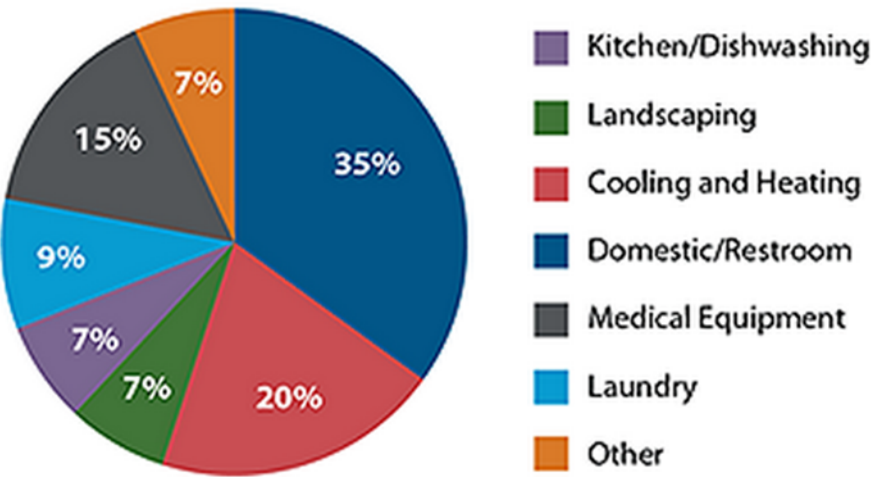


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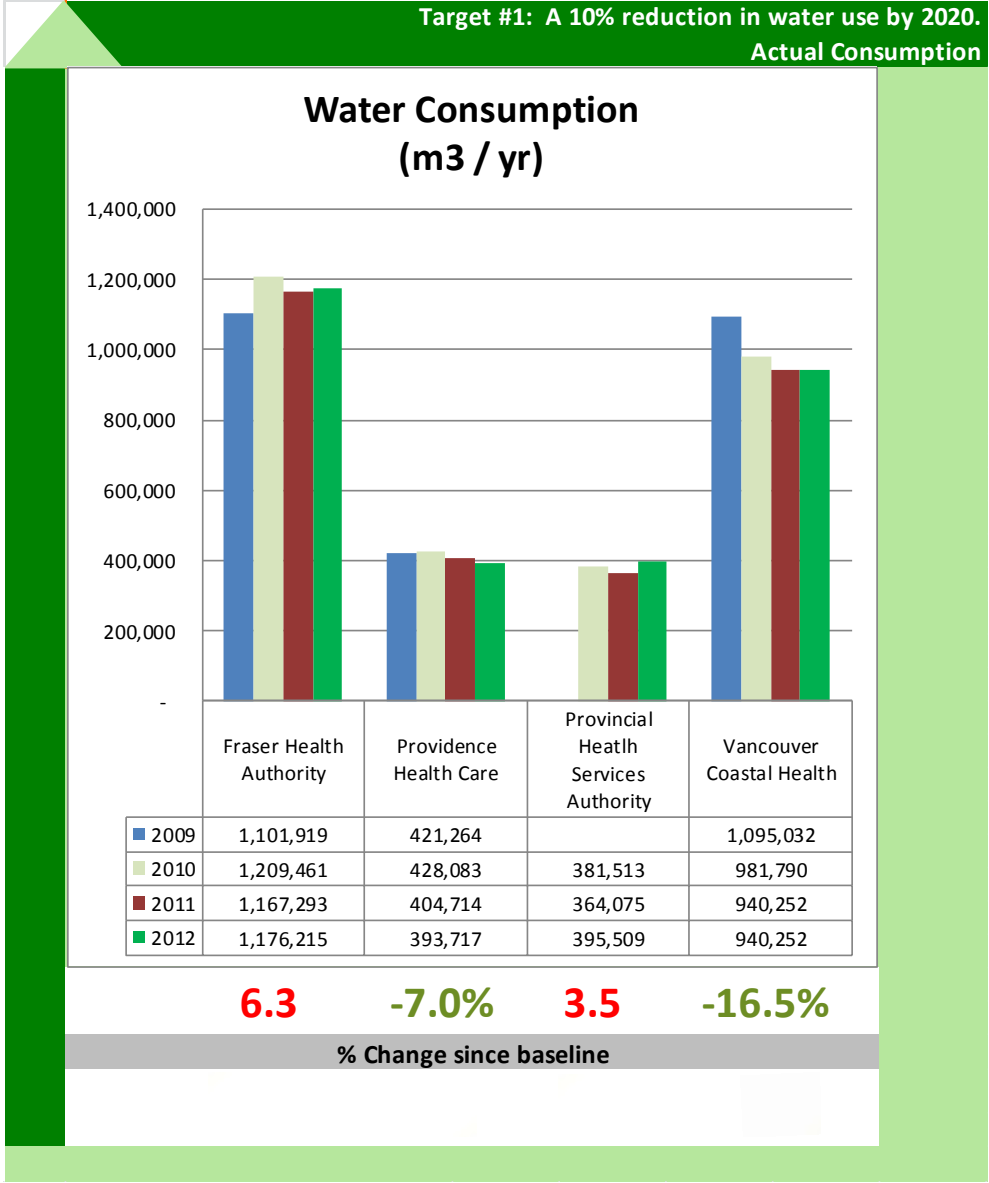
In 2012, the health care organizations conducted various water audits (internal / external) and projects intended to conserve water. Of these projects, most notably, the low flow taps at the UBC Hospital (VCH) was piloted and seen as a success. The low flow taps used were studied, to determine any bacteria build up, and approved internally by Infection Control.

The following pie chart is meant as a generalized view of the leading uses of water in the health care organizations as a whole. Note that some specific sites and facilities will vary from these percentages as they offer different care. (GF Strong has a therapeutic pool)

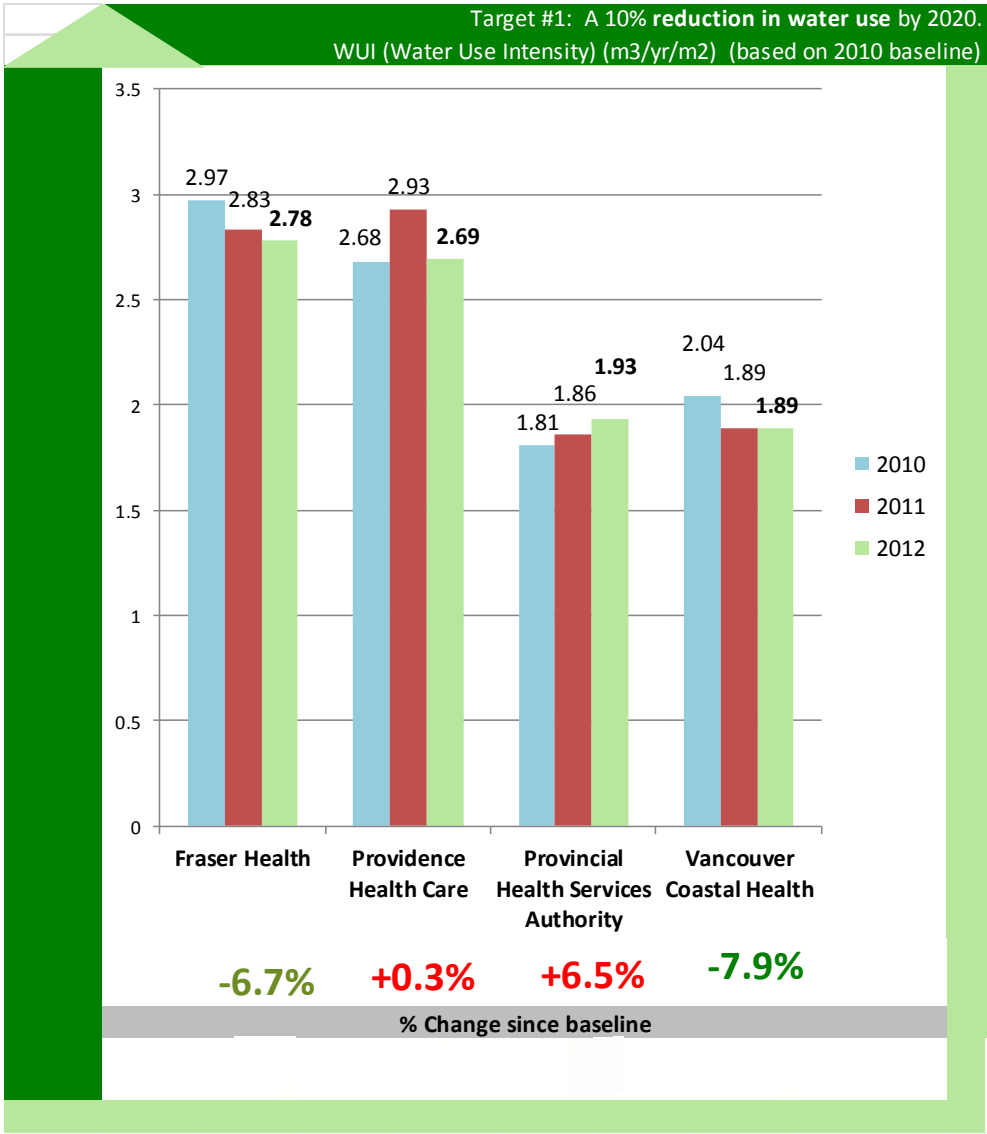
End Uses of Water in Hospitals



The following bar chart indicates **Actual** consumption. Following the Actual chart is the **Water Use Intensity** chart, which provides a more accurate report as it will factor in changes in facility space.



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**Water Usage Notes:** <sup>1</sup> WUI: Water Use Intensity is based on water usage per meter squared of facility space.

### RAINWATER HARVESTING

Target #2: Establish new rainwater harvesting projects

	2010	2011	2012
Fraser Health <sup>1</sup>	n/a	0	1
Providence Health Care	n/a	0	0
Provincial Health Services Authority	n/a	0	0
Vancouver Coastal Health	n/a	0	0

**Rainwater Harvesting Notes:**

<sup>1</sup> The new Jim Pattison Outpatient Care facility (Surrey) has rainwater harvesting.

Rainwater harvesting has a tremendous potential at the various health care sites. After spending the initial year studying the potential and planning on an implementation, in 2012 a rainwater harvesting unit was set up at the new Jim Pattison Outpatient Care Facility in Surrey. The project will be evaluated and potentially replicated at other health care sites in 2013.

### GREY WATER REUSE

Target #3: New grey water reuse projects

	2010	2011	2012
Fraser Health	n/a	0	0
Providence Health Care	n/a	0	0
Provincial Health Services Authority	n/a	0	0
Vancouver Coastal Health	n/a	0	0

**Grey Water Reuse Notes:**

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The health care organizations have a tremendous opportunity to establish grey water reuse on their larger sites. Currently we are still in the investigation phase of determining the business case and appropriate health care sites to implement a grey water reuse project. In addition, external funding partners are still being sought to help balance the cost of these potential projects.

Priority Actions

Water conservation and regeneration through:

- a. Water Usage Audit
- b. Mechanical Retrofits & Upgrades
- c. Scheduling (controls) improvements
- d. Appliance Upgrades
- e. Rainwater Harvesting
- f. Grey Water Reuse
- g. Behavioural "Report a Leak" & "Turn off the Tap" Campaigns

Key Partnerships

Internal: Lower Mainland Facilities Management

External: Metro Vancouver

2012 Progress Report

Accomplishments:

- **Water Audits:** A request for proposals was issued for water audits (including indoor and outdoor water use) at various health care sites across the Lower Mainland

- **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). Several water conservation upgrades are being implementing.
- **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.
- **Two VCH facilities are currently undergoing comprehensive water consumption audits.** Results and recommendations will be incorporated in our future water consumption plans and initiatives

2013: We Will Engage

Tasks:

- **A water conservation** management plan
- **Plan and coordinate water use** audits throughout the health care sites
- **Complete a full survey for the 'once through' water refrigeration systems** within Fraser Health and include financial analysis to determine return on investment and project implementation.
- **Conduct a survey** in PHC facilities to determine the quantity and condition of 'once through' water refrigeration systems.
- **Conduct an indoor and outdoor water audit** at one PHC facility to develop a business case for water conservation projects.
- **Conduct a survey** in PHSA facilities to determine the quantity and condition of 'once-through' cooling systems.
- **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).

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A PERSONAL NOTE from the topic LEAD



Glen Garrick  
SUSTAINABILITY MANAGER

*“The topic area of “Water Conservation & Restoration” has slowly gained more prominence within the EES group. Leadership and key stakeholders are recognizing the economic and environmental benefits of managing water more sustainably. This includes reducing consumption through conservation, mechanical upgrades, and reuse.*

*One element of reuse that we are actively looking to take advantage of is the integration of rain water harvesting at several sites. We are closing watching the new unit at the Jim Pattison Outpatient Care facility (Surrey)to see how it performs and what could be replicated at future sites.*

*With growing excitement, it has become apparent that we need a more robust water management plan to help strategize and implement water management projects and programs like rainwater harvesting, grey water reuse, or even xeriscaping. It is our 2013 goal to establish an actual water management plan to guide our work.”*

[<GLEN.GARRICK@FRASERHEALTH.CA>](mailto:GLEN.GARRICK@FRASERHEALTH.CA)





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### Project Aims to Reduce Water Use at UBC Hospital



Canada’s water consumption (329 litres per person per day, according to 2004 Environment Canada) is the second highest water use per capita in the world. This excessive water usage can be attributed to a lack of water conservation practices.

Health care is a major user of water as shown in the following examples:

- Vancouver General Hospital** - 502,000 m3 of water per year
- Children's and Women's Hospital** - 293,295 m3 of water per year
- Surrey Memorial Hospital** - 288,223 m3 of water per year
- St. Paul's Hospital** - 264,411 m3 of water per year

\*There are 1000 litres of water in a cubic meter.

At UBC Hospital, a water conservation pilot project aims to tackle issues of water waste through flow restrictors which act to reduce the flow of water and thus save gallons of water (as well as energy and money) per minute. This pilot water conservation program recently was approved by Infection Control and the Facilities Department to be expanded.

The purpose of the project is to reduce water waste without limiting tasks or services. The project targets general service faucets used for hand washing, filling a glass, etc. Utility service faucets have not been equipped with flow restrictors, meaning that when someone needs to fill a bucket to wash the floors the flow is not restricted as it would take a measurably longer period of time to complete the task. However, used for general service faucets, the reduced flow has a direct benefit of conserving water without impacting tasks.

With the flow restrictors in place, flow has been reduced to an average of 11.4 litres a minute compared to over 31 litres per minute without restrictors. It is estimated that the cost of the project will be recouped in the 1-2 years!



# Monitor the drip

Conserving water starts with **you**






Monitor the drip. Report dripping taps and water leaks.

A single dripping tap can waste up to 20,000 litres of water per year. That's enough to fill 100 bathtubs.

Printed on 100% post-consumer recycled paper.

GreenCare is our way to show we care. <http://vchconnect/greencare>

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# SUSTAINABLE SUPPLY CHAIN

## Context

Achieving sustainable supply chains in the Health Authorities means monitoring, measuring, and reducing procurement waste, process inefficiencies, and ensuring that sourced materials come from suppliers that are taking social and environmental responsibility.

Within supply chain management, the priorities are:

- 1) To enhance value to the Health Authorities through increased process efficiency, standardization, capital avoidance and leveraging of buying power.
- 2) Enhance service quality through delivery of customer-focused services.
- 3) Improve alignment and integration across Health Authorities by reducing costs, waste, and risks while increasing predictability, capacity, opportunity, and accountability for the greening of the health authority supply chains.

Maintaining the supply chains for the British Columbia Health Authorities is a primary responsibility of Health Shared Services BC (HSSBC). Within this, HSSBC provides supply chain support services to the health authorities of BC.

The Energy & Environmental Sustainability group supports HSSBC in this endeavor.

### Health Impact

Supply Chain related material waste remains a large concern for human and environmental health. Sustainable supply chain can help minimize this issue by implementing strategies to reduce waste and increase waste diversion rates.

### Economic Impact

Sustainable supply chains can reduce costs by improving logistics and efficiencies. In addition, cost reductions can be found through working with suppliers in innovation.

Economic collaborations (internal and external) can lead to creating new supply chain business models, processes, services, and products.

Lastly, ensuring suppliers are incorporating corporate social responsibility and environmental sustainability measures will provide a reduced corporate risk in doing business with those specific vendors.


## Goals

**Establishing and maintaining a world-class health care supply network, with minimized waste, efficient processes, and working relations with environmental and socially responsible suppliers.**

## Targets













- 1. **Reduce Paper Consumption:** At source the volume of sourced paper entering the Healthcare system is reduced
- 2. **Continuous Process Improvement:** Optimize operational square footage.
- 3. **Implement Sustainability Criteria in the RFP Process:** Establish sustainability criteria for consumable and equipment RFPs.

## Reporting on Targets

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REDUCE PAPER CONSUMPTION:













HSSBC is committed to reducing paper consumption.

Target #1: Reduce paper consumption				
	2010	2011	2012	
Fraser Health				
Providence Health Care				
Provincial Health Services Auth.				
Vancouver Coastal Health				













Continuous Process Improvement:

As a province-wide organization, HSSBC is committed to the most efficient use of operational space.

Implement Sustainability Criteria in the RFP Process:

Target #2: Continuous Process Improvement				
	2010	2011	2012	
Fraser Health				
Providence Health Care				
Provincial Health Services Auth.				
Vancouver Coastal Health				

HSSBC Supply Chain is committed to establishing sustainability criteria for consumable and equipment RFPs.

Target #3: Implement Sustainability Criteria in the RFP Process				
	2010	2011	2012	
Fraser Health				
Providence Health Care				
Provincial Health Services Auth.				
Vancouver Coastal Health				

Priority Actions


Support Sustainable Supply Chains by:

- a. Engaging strategic suppliers to improve the sustainability performance of operations and products/services

Key Partnerships

**Internal:** Health Shared Services British Columbia, Lower Mainland Facilities Management

**External:** BC Hydro, Misc. Vendors & Group Purchasing Organizations

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2012 Progress Report

Accomplishments:

- HSSBC Supply Chain’s Lower Mainland Branch has consolidated its print operations into two sites instead of three. This reduced the operational footprint while maintaining services levels.
- HSSBC consolidated staff from eight separate locations into one single office for the Lower Mainland. This reduced energy consumption and environmental footprint of the operation.
- HSSBC Supply Chain Ancillary Services implemented online ordering of print materials and forms for PHSA.
- HSSBC initiated an online solution to reduce paper records related to Accounts Payable, Accounts Receivable, Payroll, Employee Records & Benefits. The solution will enable digital record keeping within these business streams on an ongoing basis.
- A paperless pay advice project for PHSA was initiated to enable staff to view pay stubs online thereby reducing paper consumption and mailing costs.
- Employee Records and Benefits eliminated the need to include paper policies and benefits booklets in new hire packages by providing online access to new employees. This resulted in reduction of over 67,000 pieces of paper or 13.4 boxes of paper annually.
- HSSBC Supply Chain developed and implemented sustainability criteria for consumables and equipment RFPs.

2013: We Will Procure Sustainably

Tasks:

Health Shared Services BC (HSSBC) will continue to investigate opportunities to implement sustainable purchasing practices and other green initiatives.

A PERSONAL NOTE from the topic LEAD



Ruth Abramson  
SUSTAINABILITY MANAGER


*Sustainable Supply Chain is an area which is full of opportunities for Health Shared Services BC (HSSBC) and the Lower Mainland Health Authorities (LMHA’s) to reduce waste, cut costs, support ongoing programs--such as the Green+Leaders and the Recycling Renewal Program-- and even influence markets! What’s more, to date, HSSBC the LMHAs’ purchasers has demonstrated eagerness by launching initiatives in a variety of areas such as developing sustainability criteria for certain Request for Proposals (RFPs), implementing the scanning project, consolidating operating space and initiating the paperless stub project.*

*Sustainable Supply Chain and Procurement business practices remain a very important target area for health care.*

[<RUTH.ABRAMSON@FRASERHEALTH.CA>](mailto:RUTH.ABRAMSON@FRASERHEALTH.CA)





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# ZERO TOXICITY

## Context

**Infection Control and Safety Officers ensure that all the health care organization’s practices and materials meet very strict rules and guidelines to ensure patient and staff health and safety.**

Within the context of environmental conservation, Zero Toxicity in healthcare pertains to the many chemicals which are used in daily operations or are present in our buildings or supplies. These include medications, coatings on furniture, cleaning disinfecting solutions, and more. While these chemicals may have positive uses which can improve or safeguard health, unfortunately many of them can negatively impact health with prolonged exposure or if used or disposed of incorrectly. It is also important to consider the upstream impacts of the supplies we use as some types may use harmful chemicals in the manufacturing process.

The Lower Mainland Health Authorities are striving to reduce the usage of chemicals or purchase of materials containing chemicals that may adversely affect the health of patients and staff.

Health Impact

Toxics include carcinogens, materials that damage the skin and organs, and materials that corrode, irritate, or release chemical elements in the course of normal use, storage, transportation or disposal.

Many of the toxics are defined and regulated by national, provincial, and local laws. Other toxics are used routinely but regulated to a much smaller degree, though they can be just as harmful.

Toxics with an especially heavy and negative impact in the health care sector may be found in:

- Cleaners and disinfectants
- Dioxin-containing by products
- Electronic equipment
- Flame retardants
- Fragrance chemicals
- Pesticides
- Phthalates and Bis (2-ethylhexyl) phthalate (DEHP)
- Polyvinyl chloride (PVC)

Improperly used or disposed of toxic chemicals will pollute the environment and degrade human and environmental health.

A list of health issues associated with common chemical usage:

- chronic disease
- developmental disabilities
- childhood cancer
- diabetes, Parkinson’s Disease and neurodevelopmental disabilities
- children’s neurobehavioral disorders
- childhood asthma

(source: Practice Green Health,  
<https://practicegreenhealth.org/topics/chemicals>)

Economic Impact

Standard chemicals and materials are often produced in mass quantities which reduces the cost. Buying and using a lower health and environmental risk material or chemical may lead to increased purchasing costs to health care until these products become the norm. As these products decrease the risk to staff and patients, this will result in better health and associated savings in the long term.

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Goals

Reduce the use of toxic chemicals, materials, and known carcinogens within health care settings.

Targets

- 1. Zero Mercury
  - a. Thermometers and thermostats within Health Care facilities
- 2. “Green” Cleaning
  - a. 25% use of "green" cleaners in health care sites
- 3. Zero Cosmetic Pesticides
  - a. Zero use of cosmetic pesticides on Health Care property
- 4. Reduction of PVC, DEHP, and brominated flame retardants
  - a. Reduction in usage
    - i. Polyvinyl Chloride (PVC) is a flexible plasticize material that is easily made. Today PVC is one of the most common types of plastic materials found in health care. (source: [http://www.noharm.org/europe/issues/toxins/pvc\\_phthalates/environment.php](http://www.noharm.org/europe/issues/toxins/pvc_phthalates/environment.php))
    - ii. DEHP: Di(2-Ethylhexyl)Phthalate (DEHP) is the most common of the class of phthalate plasticizers. (source: [http://www.noharm.org/europe/issues/toxins/pvc\\_phthalates/environment.php](http://www.noharm.org/europe/issues/toxins/pvc_phthalates/environment.php))
    - iii. Halogenated and Brominated Flame Retardants can be found in fabrics, plastics, foams, insulation, carpet backing, epoxy and resins, paints, kitchen appliances, and other electrical devices. (source: [http://www.noharm.org/all\\_regions/issues/toxins/bfrs/](http://www.noharm.org/all_regions/issues/toxins/bfrs/))

Reporting on Targets

ZERO MERCURY:

Mercury is found in a wide range of products (I.e. Blood pressure cuffs, fluorescent light tubes, etc...) within health care sites. Current best practices uses the term “Mercury Free” to ONLY encompass thermometers and thermostats.













Within the health care organizations, various efforts have been made to determine how many thermometers and thermostats in our sites still contain **mercury**.

Prior progress at PHSA has consisted of adopted Mercury Free guidelines for all health care sites.

Prior progress at VCH and PHC has included conducted thermostat and thermometer collections at GreenCare Fair campaigns at Vancouver General Hospital, Richmond Hospital, UBC Hospital, Lions Gate Hospital, St. Mary’s Hospital, and Powel River General Hospital.

Prior work at Fraser Health has consisted of assessments and planning.

In 2013, all four health care organizations will work to complete a comprehensive

Target #1: Mercury use reduction			
	2010	2011	2012
Fraser Health			
Providence Health Care			
Provincial Health Services Auth.			
Vancouver Coastal Health			

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audit of each site, to determine the remaining mercury containing thermometers and thermostats.













“GREEN” CLEANING:

“Green” Cleaners is defined as maintaining and improving infection control, cleanliness, and protecting staff / patients from the risks associated with use of cleaning chemicals, which are known to pose a human and environmental health risk. Green Cleaners should improve air quality and not contain any chemicals known to cause cancer, disorders in reproductive and respiratory systems, and be eye and skin irritants.

Housekeeping services is currently out sourced to various external vendors. These various vendors have different methods of measuring and identifying green cleaners, which provides challenges for reporting.

Due to the nature of health care and patient vulnerability, infection control requires a certain level of germ killing that often limits the transition to more environmentally friendly cleaners. As more research on green cleaners becomes available to ensure the level of disinfection needed, green cleaners are being more accepted.

Ongoing efforts are being made to determine actual use of green cleaners within owned facilities. An actual base line of usage has not been determined yet though various contracted vendors are reporting the use of green cleaners.

Target #2: Increased use of "green" cleaners				
	2010	2011	2012	
Fraser Health				
Providence Health Care				
Provincial Health Services Auth.				
Vancouver Coastal Health				













ZERO COSMETIC PESTICIDES:

Health care sites have various methods of taking care of their landscaping. Sites will either outsource the work to an external partner or take care of the grounds internally.

It is the goal of the health care organizations to ensure a safe and healthy environment on health care property.

To date, various efforts have been made to eliminate or minimize the use of pesticides on health care property.

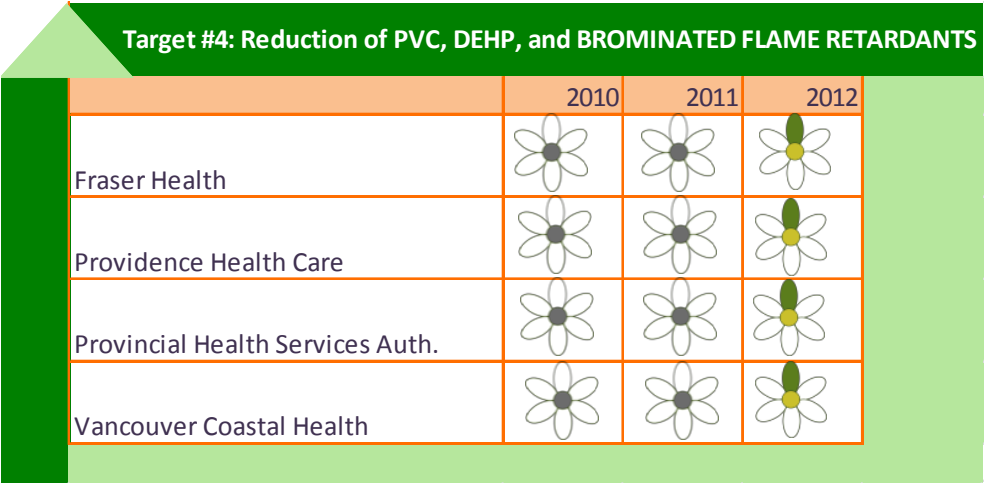
The next step is to comprehensively determine the current practice at all the health care sites and identify changes that can be made to help achieve this goal at a collective level.

Target #3: Cosmetic pesticides reduction				
	2010	2011	2012	
Fraser Health				
Providence Health Care				
Provincial Health Services Auth.				
Vancouver Coastal Health				

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REDUCTION OF PVC, DEHP, AND BROMINATED FLAME RETARDANTS:

The health authorities are actively engaged in identifying ways to limit or reduce the dependence on PVC, DEHP, and Brominated Flame Retardants within products and services. With the saturation of these elements in many health care specific products, the elimination and reduction of using them has been challenging.



However, the health authorities are committed to reducing the dependence on and usage of products containing these elements.

In 2012 we conducted several sessions on discussing these element, as they exist in construction, and ways to use alternatives or simply eliminate their use.



Key Partnerships

**Internal:** Lower Mainland Facilities Management, Business Initiatives and Support Systems, Pharmacy, Infection Control.

**External:** Work Safe BC, Teleosis Institute, Healthier Hospitals Initiative (HHI)\*  
\*For this topic area, a key external partnership has been established with the international organization “Healthier Hospitals Initiative”.

Priority Actions

Zero Toxicity through:

- a. Mercury free hospitals
- b. Avoidance of products containing “brominated flame retardants” (BFR)
- c. Phasing out products containing PVC / DEHP
- d. Avoidance of building materials on the "Red List" and "Precautionary List"
- e. Using “Green” Cleaners
- f. Establishing a medication and drug take back program at all relevant health care sites
- g. Pesticide free landscaping

2012 Progress Report

Accomplishments:

- Began work on creating an understanding and data base on all products within health care facilities that contain mercury.
- Began work on defining “green cleaners” and assessing the current usage levels within housekeeping within acute care hospitals

2013: We Will Engage Staff

Tasks:

- Finalize database on Mercury usage within health care facilities



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- Determine the current practices of mercury containing fluorescent tube disposal at all acute care sites.
- Launch program to ensure the elimination of all mercury based thermostats
- Finalize database of green cleaning practices within health care sites
- Assess the current practices of pesticide (cosmetic, insecticide) use within the grounds of health care sites.
- Determine integration of the Living Building Challenge “Red List” or the PerkinsWill “Precautionary List”, which are lists and labels of hazardous chemicals found in everyday products, within health care sites.
- Define and endorse a policy or guidelines on the avoidance or elimination of PVC / DEHP from health care procurement.
- Identify “brominated flame retardants” (BFR) containing products (fire retardants) and determine policies and guidelines on the switching of procurement practices to safer alternatives.
- Partner with the Healthier Hospitals Initiative to learn and incorporate best practices, concerning this topic area.

A PERSONAL NOTE from the topic LEAD



Glen Garrick  
SUSTAINABILITY MANAGER

“This topic area of “Zero Toxicity” is very important to us. Our team firmly believes that health care needs to go beyond simple compliance with the regulations of chemical usage in our everyday products. Health care needs to take a proactive approach to the elimination of any unnecessary

risks due to the existence of products, within health care sites, that contain known toxic elements.

As a majority of pharmacies (onsite and external) across the lower mainland already have a medication / drug take back program, I look forward to better partnering, coordinating and communicating our efforts in this area.

The “Red List” and the “Precautionary List” are great examples of internationally recognized lists warning of common materials with human and environmentally toxic elements. These products are often quite common in construction usage and often hard to find alternatives. The Facilities department is currently investigating how to incorporate one or more of these lists in planning and construction of health care projects. The bad news is that alternative resources often come at an additional cost or are simply hard to identify. The good news is that Facilities Project Managers are beginning to embrace this idea. I look forward to the progress we can make in 2013.

We have high ambitions to make health care delivery in the lower mainland as toxic free as possible.”

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# HEALTHY LAND & FOOD

## Context

The Lower Mainland Health Authorities recognize the link between the unhealthy and unsustainable food systems and impacts on human health.

The Lower Mainland Health Authorities have a variety of open and unused land and space. This land varies from large grassy areas around hospitals to un-landscaped vacant space, which may be isolated or adjacent to a health care site.

In some cases the land has been deemed contaminated due to previous usage and is fenced off until remediation occurs. In most cases the land is simply landscaped for aesthetical benefits.

Health Impact

**LAND:** In addition, the health care organizations know that owned land is an asset that can be used as a tool of therapy and community engagement through community gardens and edible landscaping.

**FOOD:** The health care system procures and provides an enormous amount of food for patients and staff. The decisions made on source location (distance), quality (nutritional content), quantity (waste), and waste disposal (organic diversion) can have a substantial impact on the public and environmental health.

Economic Impact

**LAND:** Landscaping and the support of garden space on owned land often has a slight cost to the health care organizations. Health care organizations do however support the overarching therapeutic, social, and community benefits, which often come with reductions in soft costs to health care.

**FOOD:** The health care organizations strive to provide the most nutritious food possible for staff and patients. As much as is possible, sustainable local food procurement is supported by all four health care organizations.

## Goals

**Improve the connection between land use, food, and healthy environments and communities.**

**Promote food-purchasing practices that support agricultural practices which are ecologically sound, economically viable and socially responsible.**

## Targets

- Increase Gardens**
  - Increase the number of urban agriculture and therapeutic garden projects on health care property by 2 (per annum).
- Include Green Spaces**
  - Where applicable, promote the inclusion of green spaces within health care property in major renovations and long term master planning projects.
- Source Locally**
  - Within the context of nutritional value and economics, support and source food locally (within British Columbia).

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Reporting on Targets

INCREASE GARDENS:

This target is focused on using our landscaping in a way that is more sustainable in a healing. This is achieved through Urban Agriculture; Therapeutic Gardens; Edible Landscaping; and Community Gardens. These strategies often overlap.

Currently various types of gardens have been established at St. Paul’s Hospital, George Person Centre, and Lion’s Gate Hospital.





Target #1: Increase the number of urban agriculture (edible landscaping / therapeutic garden) projects				
	2010	2011	2012	
Fraser Health	0	0	0	
Providence Health Care	1	1	1	
Provincial Health Services Authority	0	0	0	
Vancouver Coastal Health	1	2	2	
Total	2	3	3	

**Note:** With competing priorities, the concept of using owned property for urban agriculture as been slow to develop within health care.

INCLUDE GREEN SPACE:

“Green Space” is defined, for the purpose of this metric, as land use planning for the purpose of open space areas for small parks, open natural spaces, and other outdoor vegetated areas. The landscape of urban open spaces can range from a small garden to larger parks and highly maintained environments to relatively natural landscapes. All our Green Space is typically but not solely intended to be available to public access.

We continue to work with Facilities Master Planning to create more green spaces within the owned health care properties.

Target #2: The creation of Green spaces within health care property				
	2010	2011	2012	
Fraser Health	n/a	n/a		
Providence Health Care	n/a	n/a		
Provincial Health Services Auth.	n/a	n/a		
Vancouver Coastal Health	n/a	n/a		

SOURCE LOCALLY:

The Health Authorities value and support local community engagement and development.

Currently the Health Authorities are working with the City of Vancouver’s forum on Food Procurement to establish a statement, guidelines and criteria for sourcing food locally. It is hoped these items will be in place by mid 2013.

Priority Actions

Healthy Land & Food through:

- Urban Agriculture / Edible Landscaping
- Therapeutic Gardens
- Green Spaces
- Sustainable Local Food
- Apiarists

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Key Partnerships

**Internal:** Lower Mainland Facilities Management, Population Health, Business Initiatives and Support Systems.

**External:** Various not-for-profit gardening organizations

For this topic area, a key external partnership has been established with the “Healthier Hospitals Initiative”.



2012 Progress Report

Accomplishments:

- Established a **Terms of Reference (ToR)** for the use of owned health care land being used for urban agriculture or edible landscaping purposes
- Established a **Partnership Agreement template** to be used with all current and future urban agriculture / edible landscaping projects that involve third parties.
- Held a Patient Food Forum with the goal of reducing the amount of patient food waste while providing more nutritious food.

2013: Our Land & Food will be Healthy

Tasks:

- Review the Healthy Land and Food targets
- Establish three more urban agriculture plots on owned health care property

- Establish one edible landscaping project
- Re-establish the “Drink BC Water” campaign to encourage staff to choose tap water over bottled water



LEAD

- Assess and the work being done on providing healthier food
- options to staff and patience.
- Partner with BISS, supplier, and the Healthier Hospitals Initiative to learn and incorporate best practices, concerning this topic area.

A PERSONAL NOTE from the topic

Glen Garrick  
SUSTAINABILITY MANAGER

*Land is a precious commodity that the Health Authorities must maintain in the healthiest and most cost effective manner.*

*The year of 2012 was an exciting year for me as it was the first year we were able to get to work on this topic. This was the first year we recognized and establish a Partnership Agreement with external organizations working on our site gardens. The foundation has now been set to form new partnerships and establish many more garden projects across owned land.*

*The coming year will be another exciting year as we look to replicate successful projects like the gardens at the George Pearson Centre and St. Paul’s Hospital.*

*We will need to find creative funding solutions and key individuals in site leadership who are willing to work together to establish these spaces of healing and health.”*

<GLEN.GARRICK@FRASERHEALTH.CA>



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Submitted by Jazmin Miranda, Community Developer, South Vancouver Community Health Office and Katherine Oblock, Garden Participant

### Celebrating therapeutic gardens at George Pearson

Staff, residents, and community members come together to celebrate the therapeutic gardens at the George Pearson Centre.

Believing that gardens are a natural corner stone of building healthy, happy, and vibrant communities, Jen Rashleigh was inspired to unite gardening with the healing community at the George Pearson health care site.

Resident and Community Garden Plots include 7 accessible table top resident gardens, 20 raised bed plots, and a medicinal herb garden. Residents come together with staff and community volunteers to observe, tend, harvest, and enjoy the innumerable pleasures of their garden plots.

This innovative project in horticultural therapy has seen many positive steps in contributing to the healthful growth of George Pearson. Some of these benefits include: **Staff and select residents are able to eat fresh, local, organic produce that they grew together.**

Residents develop a sense of self-worth and understand that they are essential components in the healthy growth of their community.

#### Snapshot

### St. Paul's Rooftop Garden Grows Community, Health, and Understanding



A community garden initiative was launched on the fourth floor of St. Paul's Hospital as part of the province's Welcoming and Inclusive Communities and Workplaces Program. A partnership between the hospital, the YMCA, Gordon Neighbourhood House, and the West End Association, the project is helping downtown residents feel more included in their neighbourhoods by providing a comfortable space for people of different ages, cultural backgrounds and first languages to chat, share experiences and meet new friends.

David Tracey, program coordinator, says that integration into a new community is more than just living there. "We see this helping to build a truly intercultural community rather than just a multicultural community in which people from diverse backgrounds may live in the same area but still have limited contact or shared experiences in creating a better city for all."

What makes this garden project wildly different from other community gardens is the mandatory workshops that must be attended by all gardeners. They include topics like racism, homophobia and intercultural communication. **The goal is to help those who are new to the diverse backgrounds and beliefs represented in their new communities to feel more comfortable and to promote a continued culture of acceptance and openness in all aspects of life.**

The rooftop garden has an **added benefit of bringing a bit of the outside world up to those who might be spending time in the hospital.** On a nice day, patients can stroll around outside, enjoy the greenery and escape the typical hospital setting.

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# TRANSPARENT REPORTING

## Context

Energy & Environmental Sustainability reporting is seen as a key priority as it will:

- a) Raise awareness inside and outside the organizations on EES strategies, objectives, plans, performances and challenges within organizational energy and environmental sustainability;
- b) Help to engage and create dialogue with all internal and external stakeholders;
- c) Establish benchmarking;
- d) Enhancing the organization's reputation for environmentally responsible action and to strengthen stakeholder trust in the organization.

## Goals

**Provide results orientated work reports on Carbon, Energy, and overall Sustainability, that are routine, transparent, engaging, and open for dialogue.**

## Targets

- 1. **Carbon Neutral Action Report (CNAR)**
  - a. Publish a distinct annual report, which will provide an update, according to the Provincial mandate, on the organizations carbon footprint and associated actions: Carbon Neutral Action Report CNAR.

## 2. PowerSmart Reporting

- a. Publish a distinct annual report, which will encompass all elements of past, present, and future energy conservation work as requested by the Power Smart Energy Manager Program sponsored by BC Hydro

## 3. Environmental Accountability Report

- a. Publish a distinct annual report, which will encompass and provide progress response on all focus areas of the Energy and Environmental Sustainability group.

## Reporting on Targets













### CARBON NEUTRAL ACTION REPORT:

The Provincial Government of British Columbia has mandated that the public health care sector be annually carbon neutral. To help in establishing a clean reporting mechanism, the Provincial Government has provided a tool “SmartTool” to record all relevant CO2 data.

Each spring we sit down with the data from the SmartTool and produce a report capturing all the information related to becoming carbon neutral the previous year. The 2012 CNAR reporting should be available in late June 2013. The **2011 Carbon Neutral Action Reports** for all four health care organizations can be found at:













[http://www.livesmartbc.ca/government/carbon\\_neutral/health\\_authorities.html](http://www.livesmartbc.ca/government/carbon_neutral/health_authorities.html)

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Target #1: Publish an annual Carbon Neutral Action Report CNAR				
	2010	2011	2012	
Fraser Health				
Providence Health Care				
Provincial Health Services Auth.				
Vancouver Coastal Health				

POWERSMART REPORTING:

The Energy Management team meets with BC Hydro on a bi-yearly basis to report on energy conservation success and challenges. A fiscal year report is presented to them every May. In addition, BC Hydro sponsors bi-yearly Energy Management Assessments (EMA) at each health authority. June of 2013 is the next planned EMA for each health authority.













Target #2: Present a distinct annual report for BC Hydro				
	2010	2011	2012	
FHA				
PHC				
PHSA				
VCH				

OUR ENVIRONMENTAL ACCOUNTABILITY REPORT:

As part of our accountability to the natural environment, staff, and senior leadership, we are committed to producing a document “Our Environmental Accountability Report” each year.

In researching the health care sector and environmental or sustainability reporting, very few health care organizations produce these reports. Some have been producing Corporate Social Responsibility (CSR) reports for years. Those reports often involve a high level and often limited internal look at financial , patient care, and environmental reporting from a high level.

Our Environmental Accountability Report is not intended to be an overview of organizational finances or patient care. This public document is to report on our goals, targets, and progress towards reducing our environmental footprint that we are currently making. In addition, it is to communicate the steps we are taking towards the greening of health care. This report is confirmation that the health authorities successfully produced its 1<sup>st</sup> Environmental Accountability Report.

Target #3: Publish an annual Environmental Accountability Report (EAR)				
	2010	2011	2012	
Fraser Health				
Providence Health Care				
Provincial Health Services Auth.				
Vancouver Coastal Health				

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Priority Actions

- Transparency through Reporting in:
- a. Annual Carbon Reporting
  - b. Annual Energy Reporting
  - c. Annual Sustainability Reporting

Key Partnerships

**Internal:** Lower Mainland Facilities Management, Business Initiatives and Support Systems (BISS), Human Resources, Integration Protection Services, Population Health, Clinicians, and others.  
**External:** BC Hydro, HSSBC, Climate Action Secretariat.

2012 Progress Report

Accomplishments:

- Quarterly Reports on Energy Usage
- Carbon Neutral Action Report

2013: We Will Report

Tasks:

- Bi-yearly Reports on Energy Consumption to BC Hydro
- Annual Carbon Neutral Action Report (CNAR)
- Annual Environmental Accountability Report (EAR)

A PERSONAL NOTE from the topic LEAD



Glen Garrick  
SUSTAINABILITY MANAGER

*“Reporting has become one of our strengths, especially in light of our partnerships with various external entities like BC Hydro and the Provincial Government around energy usage and our carbon footprint.*

*In 2012 we again produced our quarterly reports to BC Hydro as well as our annual Carbon Neutral Action Report (CNAR) for the Provincial Government.*

*The CNAR, though focused primarily on our carbon footprint, is very good for getting a taste of everything going on under Energy & Environmental Sustainability.*

*For the 2012 reporting cycle, we were able to produce our first “Our Environmental Accountability Report”. This title was chosen to illustrate a level of responsibility the health care organizations were taking concerning the environment.*

*With your feedback and input we look forward to evolving the EAR into the most transparent report on progress and challenge related to environmental sustainability.*

*Furthermore, in 2013 we will be completing our Energy Management Assessment of each health authority.”*

<GLEN.GARRICK@FRASERHEALTH.CA>

Most of our **key reporting** can be found online at:  
<https://bcgreencare.ca/framework/transparent-reporting>



*“Individual staff decisions have a huge impact on the environment. Food choices, composting, and commuting are just a few examples of areas where we can, and should, make a difference.”*

**-Shefali Raja, RD**

**Community Health Specialist**





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# RESOURCES & ASSURANCE

## 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](http://www.bcgreencare.ca)

## External Resources

- **LiveSmart BC: 2010 Carbon Neutral Action Reports: Health Authorities**  
[http://www.livesmartbc.ca/government/carbon\\_neutral/health\\_authorities.html](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](http://www.leg.bc.ca/38th3rd/1st_read/gov44-1.htm)
- **Canadian Green Building Council LEED**  
<http://www.cagbc.org/>
- **ASHRAE 189.1 standard for new buildings and renovations**  
<http://www.ashrae.org/resources--publications/bookstore/standard-189-1>

## Strategic Partners

- **BC Hydro**  
<http://www.bchydro.com/>
- **Fortis**  
<http://www.fortisbc.com>
- **Healthier Hospitals Initiative**  
<http://healthierhospitals.org/>
- **Practice GreenHealth**  
<https://practicegreenhealth.org/>

## Assurances

It is the goal of the Lower Mainland Facilities Management to build into subsequent versions of the EES Environmental Accountability Report a level of verified assurances for the reporting. This assurance will come in an independent 3<sup>rd</sup> party verification process. Once in place, this assurance will verify the process and data being reported.



*“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**