

2014  
Carbon Neutral  
Action Report



**Executive Summary**  
**Dianne Doyle**  
*President*

I am proud to present the fifth annual Providence Health Care (PHC) Carbon Neutral Action Report (CNAR) for 2014.

PHC has now been carbon neutral for five consecutive years.

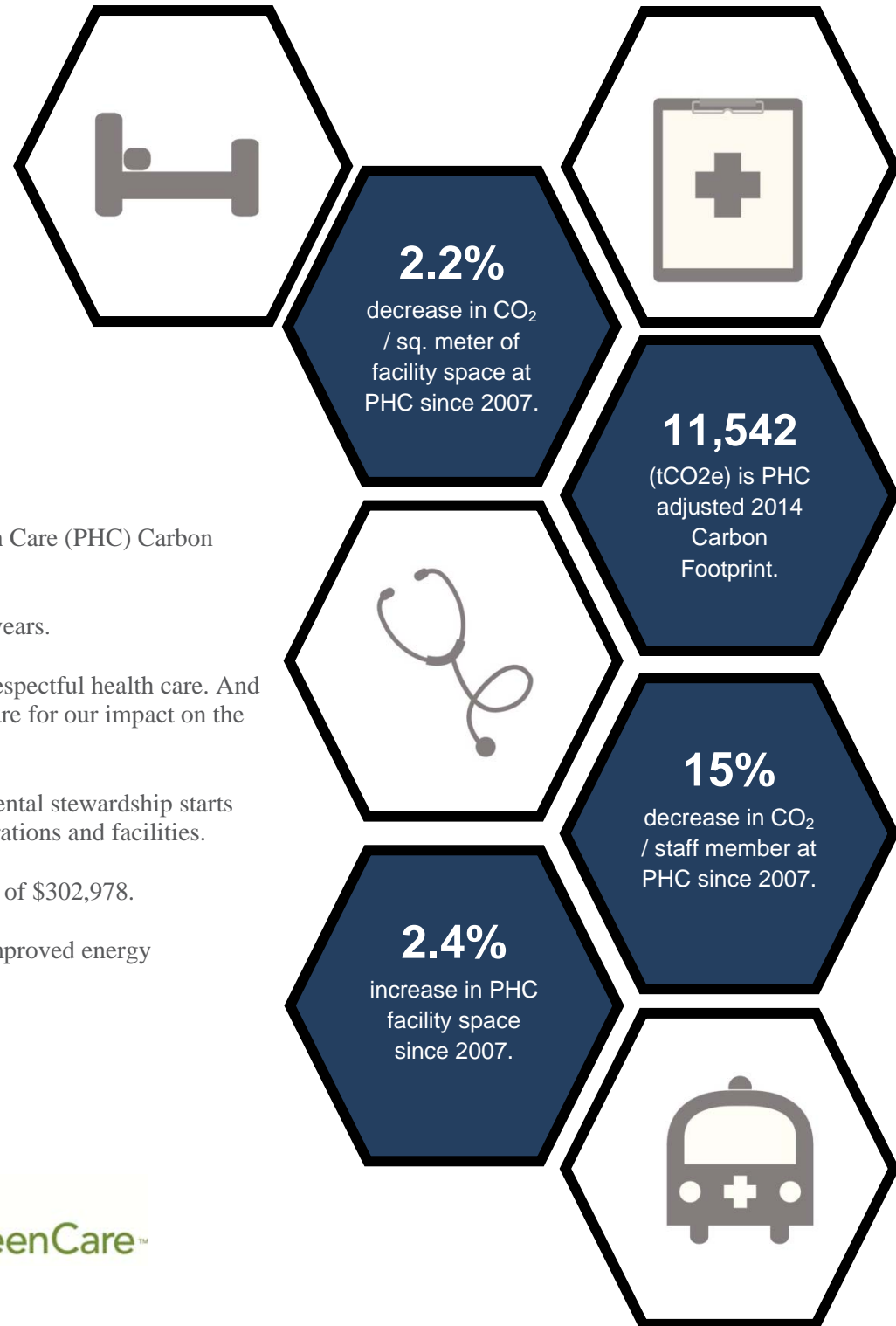
At PHC, we are committed to providing inclusive and respectful health care. And that extends past human health to a consideration and care for our impact on the environment too.

Within respectful health care, the PHC family firmly believes that our environmental stewardship starts with taking personal responsibility for the carbon footprint produced by our operations and facilities.

In 2014, PHC had a carbon footprint of 11,542 eCO<sub>2</sub>t, which was offset at a cost of \$302,978.

In 2015, we will continue to improve our environmental performance through improved energy efficiency, recycling and fleet management.

*Dianne Doyle*



# Our CO<sub>2</sub> Footprint

## 2014 GREENHOUSE GAS EMISSIONS BREAKDOWN AND OFFSETS APPLIED TO BECOME CARBON NEUTRAL

Providence Health Care (PHC) reports their organizational carbon footprint in accordance with the Greenhouse Gas Reduction Targets Act (GGRTA) and the Carbon Neutral Government Regulation (CNGR) under guidance from the B.C. Climate Action Secretariat (CAS).

CAS provides guidance on which greenhouse gas (GHG) emissions are considered in scope in accordance with the legislation (see side bar). In non-technical terms, the main sources of GHG emissions can be grouped in three categories:

1. Stationary emissions (buildings)
  - a. Direct fuel combustion
  - b. Indirect (purchased electricity)
  - c. Fugitive emissions (HFC's)
2. Mobile emissions (fleet vehicles)
3. Supplies (paper)

Over 95% of PHC's carbon footprint is related to the energy consumed by its owned and leased buildings. The majority of emissions from these buildings are related to fossil fuel use for heating.

### Providence Health Care

PHC's 2014 carbon footprint is 11,542 tCO<sub>2</sub>e. That is a 2% decrease compared to last year's 2013 CNAR.

Emissions per PHC full-time employee (FTE) were reduced in 2014 by 15% in comparison to the 2007 baseline.

The Climate Action Secretariat of British Columbia had determined which GHGs are in scope and which ones are out of scope.

In Scope	Out of Scope
<ul style="list-style-type: none"><li>• <b>Six Green House Gases (GHG) are in scope for measuring and reporting:</b><ul style="list-style-type: none"><li>• Carbon Dioxide - CO<sub>2</sub>,</li><li>• Methane - CH<sub>4</sub>,</li><li>• Nitrous Oxide - N<sub>2</sub>O,</li><li>• Sulphur Hexafluoride - SF<sub>6</sub>,</li><li>• Per fluorocarbons - PFCs,</li><li>• Hydro fluorocarbons - HFCs</li></ul></li></ul>	<ul style="list-style-type: none"><li>• <b>All other GHG gases are considered out of scope.</b></li></ul>

To become carbon neutral in 2014, PHC purchased carbon offsets from the Pacific Carbon Trust at a total cost of \$302,978.

### Changes to Facility Square Footage and Staff Count

PHC's useable facility space has increased 2.4% since 2007, despite a 17.7% increase in full time equivalent staff needed to serve a growing population and associated demand for health care services. Though the useable facility space and FTE count have both increased, the total overall carbon footprint has remained the same since 2007.



# Actions Taken To Reduce Our CO<sub>2</sub> Footprint

## 2014 LIST OF ACTIONS TAKEN TO REDUCE CO<sub>2</sub> FOOTPRINT

### Stationary Fuel Combustion, Electricity (Buildings)

PHC completed 2 energy savings projects in 2014:

- St. Vincent's: Langara - DDC & DHW upgrades
- Holy Family Hospital - DDC upgrade

These projects are projected to achieve a total estimated savings of 157,000 kWh of electricity, 73 (tCO<sub>2</sub>e) of carbon and the cost avoidance of \$20,500 / year.

### Mobile Fleet Combustion (Fleet and Other Vehicles)

PHC installed 52 (120v) electric vehicle charging stations at St. Paul's Hospital, which is located downtown Vancouver in the West End.

PHC supports a Jack Bell Shuttle service from several of their sites. In 2014 PHC had 23,980 health care staff use the shuttle from various PHC sites. 49 PHC staff participated in the 2014 Clean Commuter Challenge (CCC), which is a campaign to get staff out of their single occupancy vehicle commuting.

PHC							
Our Carbon Footprint (in tCO <sub>2</sub> e)		2007	2010	2011	2012	2013	2014
CO <sub>2</sub>	Mobile Fuel Combustion (Fleet & other mobile equipment)	15	15	21	47	47	43
	Stationary Fuel Combustion & Electricity (Buildings)	11,448	11,266	11,892	12,081	11,440	11,146
	Supplies (Paper)	70	70	72	271	260	358
	<b>Total Carbon Footprint (tCO<sub>2</sub>e)</b>	<b>11,533</b>	<b>11,351</b>	<b>11,985</b>	<b>12,400</b>	<b>11,747</b>	<b>11,547</b>
	Emissions Which Do Not Require Offsets <sup>1, 2</sup>	-1	-1	-4	-7	-5	-5
	<b>Total Carbon Footprint (tCO<sub>2</sub>e)</b>	<b>11,532</b>	<b>11,350</b>	<b>11,981</b>	<b>12,393</b>	<b>11,742</b>	<b>11,542</b>
	Adjustments / Corrections	0	0	0	0	0	0
<b>Total Carbon Footprint - for offsetting (tCO<sub>2</sub>e)</b>		<b>11,532</b>	<b>11,350</b>	<b>11,981</b>	<b>12,393</b>	<b>11,742</b>	<b>11,542</b>
\$	Purchased Carbon Offsets	\$ -	\$ 283,767	\$ 299,375	\$ 309,575	\$ 294,525	\$ 288,550
	<b>Purchased Carbon Offsets +HST / GST</b>	<b>\$ -</b>	<b>\$ 317,819</b>	<b>\$ 335,300</b>	<b>\$ 325,054</b>	<b>\$ 309,251</b>	<b>\$ 302,978</b>
KPI	Emissions per Full-Time Employee	2.77	2.63	2.59	2.47	2.41	2.36
	Emissions per Meter Square Facility Space	0.07	0.06	0.07	0.07	0.07	0.06
<p><sup>1</sup> It was estimated that Fugitive Emissions from cooling equipment comprise less than 0.01% of Providence Health's total emissions and an ongoing effort to collect or estimate emissions from this source would be disproportionately onerous. For this reason, emissions from this source have been deemed out-of-scope and have not been included in our total greenhouse gas emissions profile.</p> <p><sup>2</sup> As outlined in the Carbon Neutral Government Regulation of the Greenhouse Gas Reductions Target Act, some emissions do not require offsets.</p>							



## Supplies (Paper)

The Green+Leaders (G+L) behaviour change program recruited 2 new PHC volunteers in the fall of 2014. PHC now has 8 G+L across the organization.

As part of the G+L paper/waste reduction campaign volunteers were supplied with Paperless Meeting Toolkits to encourage their colleagues to reduce paper use.

PHC continues to support the GreenCare Community (GCC) website, which provides tips and toolkits on using less paper, such as promoting paperless meetings. In 2014 PHC had a total of 349 staff registered on the site.

## Actions That Fall Outside the Scope of the Carbon Neutral Government Regulations

In addition to specific projects mentioned previously, PHC also did the following:

- Provided 226 bike parking stalls across various sites.
- Encouraged the use of the internally organized Jack Bell shuttle when traveling between various sites.

PHC						
BUILDINGS, FTE AND WEATHER	2007	2010	2011	2012	2013	2014
<b>Distinct PHC Buildings</b>	n/a	35	39	37	40	40
<b>% Owned</b>	n/a	94%	93%	93%	91%	92%
<b>% Leased</b>	n/a	6%	7%	7%	9%	8%
<b>Usable Square Meters</b>	174,002	182,161	182,994	176,186	179,222	178,157
<b>Full-Time Employee Equivalents *</b>	4,160	4,311	4,627	5,026	4,882	4,898
<b>Weather (summarized in Heating Degree Days)<sup>1</sup></b>	2,870	2,621	2,963	2,859	2,820	2,627

<sup>1</sup> Building energy consumption is influenced by climate conditions. Vancouver has a climate which predominately requires heating to satisfy internal building temperatures. Heating Degree Days (HDD's) is a measurement designed to reflect the demand for energy needed to heat a building.

- Developed a staff engagement strategy to improve communication with Facilities Maintenance and Operations (FMO) staff with a focus on understanding the barriers to ongoing optimization of existing equipment and systems.
- Initiated the development of an engagement and integration strategy with Facilities Strategic Planning and Capital Project teams to embed energy conservation principles in their process and projects.
- Continued to promote energy conservation and GHG emissions reduction through staff focused awareness and behaviour change programs, such as Green+Leaders, GreenCare Community website and the BC Hydro Workplace Conservation Agreement program.

## FUTURE WORK TO REDUCE THE ORGANIZATION'S CO<sub>2</sub> FOOTPRINT

In 2015 PHC plans to continue reducing GHG emissions and energy use by:

- Implementing GHG / energy reduction retrofit projects
- Engaging with site operations staff and external consultants to identify GHG / energy opportunities.
- Engaging with strategic planners and capital project managers to ensure that energy conservation is embedded in their process and projects scopes.
  - Engaging with our external key stakeholders, such as utility partners, to identify capital incentive energy reduction projects.
    - Engaging and educating our staff via the existing Green+Leaders program, GreenCare Community and the BC Hydro Workplace Conservation Agreement.
    - Building partnerships with potential P3 partners to help them understand the priority PHC puts on energy conservation.
      - Building partnerships with cities and municipalities to investigate District Energy Systems opportunities with alternative energy solutions.
      - Investigating renewable/clean cost effective energy solutions.



# SUCCESS STORY

## Energy Management

One success story at PHC from 2014, in relation to Carbon Neutral Actions, is the DDC upgrade to the control system at the Holy Family Hospital.

The PHC energy management team in the lower mainland (LMFM) worked closely with the controls consultants to improve the efficiency of the mechanical systems in the hospital by upgrading the control system to significantly reduce the losses in the energy consumption.

The appointed controls contractor worked with facilities and maintenance staff at the hospital to achieve the best results at the most practical way.

The work was conducted in a very collaborative way to insure that the safety and the comfort of the occupants was maintained at all times.

The estimated annual savings, from this specific project, is approximately 33.3 MWh of electricity, 635 GJ of gas, 32.5 tCO<sub>2</sub>e of carbon, and \$7,000 in avoided energy costs.

## Energy Saving Features

A good example for a 2014 energy saving project is the DDC & DHW upgrades (CNCP) project that was completed at the St. Vincent's: Langara site.

This project was completed after a thorough study was conducted to investigate the benefits that can be obtained from such project, and the study confirmed some thoughts that were suggested by the facility and

maintenance staff on site.

This project did not only achieve great energy saving results, but also increased the comfort level of the occupants and solved technical problems in the mechanical system that lasted for many years in the past.

The upgrades gave the occupants and the FMO staff better control over the space temperature in the individual zones, which resulted in saving all the energy lost in the past due to excessive heat or “unnecessarily” open windows.

The estimated annual savings, from this specific project, is approximately 123.7 MWh of electricity, 744 GJ of gas, 40.2 tCO<sub>2</sub>e of carbon, and \$13,500 in avoided energy costs. ■



# 2014 Carbon Neutral Action Report (CNAR) - Part 2 ACTIONS

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## Organization Name

Providence Health Care

## Actions Taken to Reduce Emissions

### 1) Stationary Fuel Combustion, Electricity (Buildings): Indicate which actions were taken in 2014:

Performed energy retrofits on existing buildings

Yes

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

Yes

Undertook an evaluation of overall building energy use.

Yes

Please list any other actions taken to reduce emissions from Buildings:

1. Rolled out a strategy to improve engagement with Facilities Maintenance and Operations (FMO) staff with a focus on understanding the energy building use, identifying reduction opportunities and optimization of existing equipment/plant.
2. Completed and rolled out a Design Guideline for New Construction & Major Renovation projects to provide our Strategic Planning and Capital Project teams with direction for: Energy performance targets, Incentive application requirements, LEED requirements, Design Standards and Principles.
3. Continued to promote energy conservation and GHG emissions reduction through awareness and behaviour change programs, such as Green + Leaders, GreenCare Community website and the BC

Hydro Workplace Conservation Agreement program.

**2) Mobile Fleet Combustion (Fleet and other vehicles):Indicate which actions were taken in 2014:**

Do you have a fleet?

Yes

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

Yes

Replaced existing vehicles with hybrid or electric vehicles

Yes

Reduced the overall number of fleet vehicles

No

Took steps to drive less than last year

Yes

Please list any other actions taken to reduce emission from fleet:

(No response)

**3) Supplies (Paper):Indicate which actions were taken in 2014:**

Used less paper than previous year

No

Used only 100% recycled paper

No

Used some recycled paper

Yes

Used alternate source paper (Bamboo, hemp, etc.)

No

Please list any other actions taken to reduce emissions from paper use:

The Green + Leaders (G+L) behaviour change program recruited 2 more volunteers in 2014 and now there are 8 volunteers in PHC. As part of the paper/waste reduction campaign, the volunteers were supplied with Paperless Meeting Toolkits to encourage their colleagues to reduce paper use.

Our online GreenCare Community (GCC) site includes content and provides tips on using less paper, such as promoting paperless meetings.

### Page 3

## Actions Taken to Reduce Emissions - continued

Explain how you plan to continue minimizing emissions in 2015 and future years:

PHC plans to continue reducing GHG emissions and Energy use by:

1. Implementing GHG/Energy reduction retrofit projects in our existing building portfolio by utilizing the Carbon Neutral Program Funding (CNCP).
2. Continuing the optimization of mechanical plant and controls in our existing building portfolio.
3. Continue engaging with site Operations staff and external Consultants to identify GHG/Energy opportunities.
4. Engaging with Strategic Planners and Capital Project Managers to ensure that our Design



Guideline for New Construction & Major Renovation projects is embedded in their process and projects scopes.

5. Engaging and educating our staff via the existing Green + Leaders program, GreenCare Community and the BC Hydro Workplace Conservation Agreement.
6. Building partnerships with our P3 partners to help them identify energy conservation opportunities.
7. Building partnerships with Cities and Municipalities to investigate District Energy Systems opportunities with alternative energy solutions.
8. Investigating renewable/clean cost effective energy solutions.

If you wish to list any other "sustainability actions" outside of buildings, fleet, paper and travel check "yes". This reporting is optional.

Yes

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**Actions to Promote Sustainability and Conservation - Optional**The following are actions that fall outside the scope of the Carbon Neutral Government Regulation, but which many organizations still undertake and may wish to report on. This section is optional for reporting.

**Business Travel**Created a low-carbon travel policy or travel reduction goal (Low-carbon: Lowest emission of greenhouse gases per kilometre per passenger)

Yes

**Virtual Meeting Technology**Installed web-conferencing software (e.g., Live Meeting, Elluminate, etc.)

Yes

**Made desktop web-cameras available to staff**

Yes

**Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)**

(No response)

**Encourage carpooling to meetings**

Yes

**Education and AwarenessHave created Green, Sustainability, Energy Conservation, or Climate Action Teams.**

Yes

**Provided resources and/or dedicated staff to support these teams**

Yes

**Provided behaviour change education/training for these teams (e.g., community-based social marketing)**

Yes

**Established a sustainability/green awards or recognition program**

Yes

**Support green professional development (e.g., workshops, conferences, training)**

Yes

**Planning for Cimate ChangeHave assessed whether extreme weather events and/or long term changes in climate will affect our organization's business areas**

Yes

**Long term changes in climate have been incorporated into our organization's decision making.**

Yes

**Actions to Promote Sustainability and Conservation - Optional (continued)**

**Staff Awareness and Education** Provided education to staff about the science of climate change

Yes

**Provided education to staff about the conservation of water, energy, and raw materials**

Yes

**Provided green tips on staff website or in newsletters**

Yes

**Alternate Work/Commuting Options** Allow for telework/working from home

Yes

**Staff have the option of a compressed work week**

No

**Commuting by foot, bicycle, carpool or public transit is encouraged**

Yes

**Shower or locker facilities are provided for staff/students who commute by foot or by bicycle**

Yes

**Secure bicycle storage is provided**

Yes

**Other Sustainability Actions Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models**

Yes

**Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features**

Yes

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

Yes

**Have implemented a hazardous waste reduction and disposal strategy (Hazardous Waste: E.g., electronics including computer parts and monitors, batteries, paints, fluorescent bulbs)**

Yes

**Have incorporated minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)**

No

**Established green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)**

No

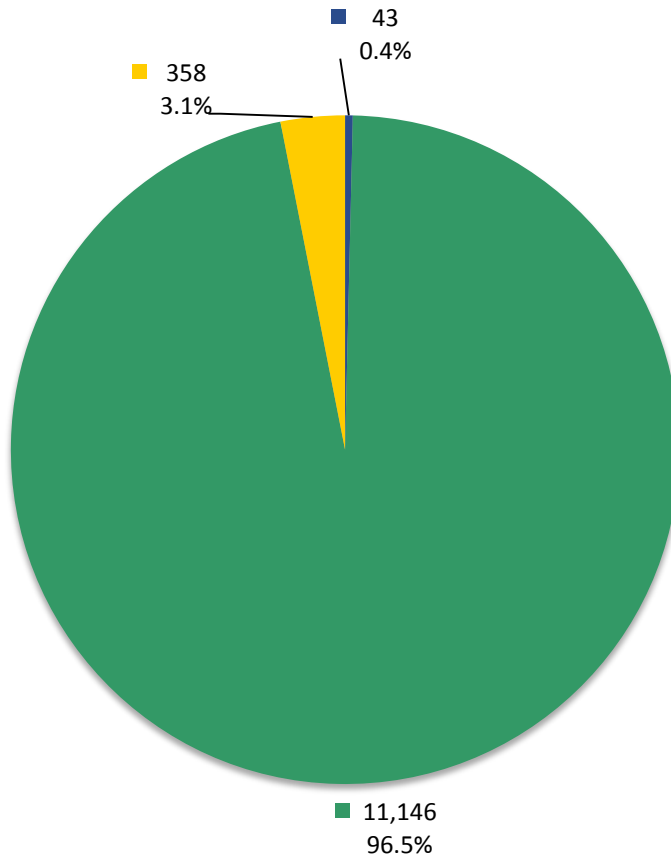
**Incorporated lifecycle costing into new construction or renovations**

Yes

**Please list and other sustainability actions you wish to report not included in the previous list.**

1. The annual update of our Environmental Accountability Report, including goals and targets for 10 strategic focus areas.
2. The continued success of the Recycling Program across the region.
3. The continued effort to reduce staff single occupancy vehicle commuting by such actions as, promoting the availability of electric car charging stations and the Clean Commuter challenge.

**Providence Health Care  
Greenhouse Gas Emissions by Source  
for the 2014 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 11,547**

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

**Offsets Applied to Become Carbon Neutral in 2014 (Generated June 22, 2015 4:32 PM)**

Total offsets required: **11,542**. Total offset investment: **\$288,550**. Emissions which do not require offsets: **5** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

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