

# 2012 Carbon Neutral Action Report



# 2012 Carbon Neutral Action Report of the Royal BC Museum Corporation

## CEO's Message

As stewards of BC's natural history and human history, protection and preservation are central to our values. Sustainable, environmentally responsible practice is simply part of how we function as an institution.

In 2012, the Royal BC Museum saw a great overall increase in activity, with more exhibitions than ever before, field trips to fill gaps in our natural history collection, and our work to design, build, transport and install a temporary summer satellite gallery in Vancouver. Despite this, our greenhouse gas emissions were within two per cent of our 2011 emissions, and were fully offset through payments. This reflects both our ability to contain emissions and our ongoing commitment to reduce them.

More far-reaching is our work in research and education, both key parts of our mandate. Society's understanding of climate change is expanded by the work of Dr. Richard Hebda, distinguished curator of natural history, who also serves as technical advisor to government's Climate Action Secretariat. Much of his research as curator relates to climate change throughout BC's history, information that helps inform present-day decisions. The *Climate Rules!* display in our Natural History Gallery draws the public into the climate change story in engaging ways.

Our researchers have helped draw attention to indigenous species, including the Garry Oak trees native to the Victoria region, the unique species of the Burn's Bog ecosystem and the impacts of human settlement on the Haida Gwaii island system of northern BC.

Invasive species in BC are being tracked through an interactive website and smartphone application developed for our *Aliens Among Us*, exhibition, which explains about these species and what individuals can do to protect their communities. The technologies enable visitors to report sightings, connect with scientists and researchers and thus to contribute to the knowledge base about invasive species in our province.

These are just a few of the ways we work to make the environment better for current and future generations.



Professor Jack Lohman, CBE

## Overview

This report on behalf of the Royal British Columbia Museum Corporation (Royal BC Museum) was prepared in accordance with the requirements of the 2007 *Greenhouse Gas Reduction Targets Act* and as prescribed by the Climate Action Secretariat.

## 2012 Greenhouse Gas Emissions

The Royal BC Museum's total greenhouse gas (GHG) emissions for the 2012 calendar year from all sources covered by the *Act* are 180. In-scope sources include Mobile Fuel Combustion (fleet vehicle and other mobile equipment), Stationary Fuel Combustion and Electricity (buildings), and Supplies (paper).

### Offsets Applied to Become Carbon Neutral in 2012

Total Offsets Purchased:	179
Total Offset Investment:	\$4,475.00 (excluding applicable HST)
Emissions Not Requiring Offsets	1.0
Adjustments to Offsets for 2010 and 2011	0.0

### Emissions Not Requiring Offsets

Under the Carbon Neutral Government Regulation of the *Greenhouse Gas Reduction Targets Act*, some emissions do not require offsets. For 2012, those total 1.0 of the of Royal BC Museum's emissions.

It was estimated that stationary fugitive emissions from cooling (small air conditioner in Server Room) comprise less than 1% of the Royal BC Museum's total emissions, and the ongoing effort to collect or estimate emissions from this source would be disproportionately onerous. For this reason, these emissions have been deemed out of scope and are not included in the Royal BC Museum's total greenhouse gas emissions profile.

The Royal BC Museum has contracted with the Province for delivery of cooling in the summer months and supplementary steam for heating in the winter if the Royal BC Museum's electric boiler is unable to supply enough heating to the precinct. A flat monthly fee is paid to Shared Services BC for delivery of these utility services. Indirect emissions from this source have not been reported as part of our greenhouse gas emissions profile in 2012, as it is currently unclear whether the associated emissions should be in or out of our reporting scope. Discussions are underway with Shared Services BC and the Climate Action Secretariat to resolve the uncertainty.

In addition, we believe it would be difficult for the Royal BC Museum to estimate emissions attributed from these utility sources, in particular supplementary heating as we currently receive little or no steam from the heating plant during the winter months and haven't for many years.

## Actions Taken to Reduce Emissions in 2012

In 2012, actions taken by the Royal BC Museum include:

- implementing 27 energy-saving measures around the precinct in the fall of 2012, with estimated annual savings of \$31,400 (530,000 kWh), as part of the BC Hydro Continuous Optimization Program;

- using a dashboard flat screen (in partnership with BC Hydro and Pulse Energy), to show our real-time energy consumption;
- installing 3 low flush 6L toilets in Willie's Café;
- continuing to be a bottled-water-free zone and not purchasing bottled water for our meetings or events;
- using low VOC paint whenever possible;
- replacing hand washing soap in all washrooms with green-certified hand wash;
- purchasing BC-made, 100%- recycled-fibre paper towels comprising at least 88% post-consumer material for all washrooms and industrial work spaces;
- purchasing EcoLogo-certified 100%-recycled toilet paper comprising at least 88% post-consumer material for all washrooms;
- purchasing 100% recycled photocopier and printer paper;
- using computer power management software installed in 2009 – our annual energy savings for 2012 were 88,431 kWh; and
- participating in Earth Hour on March 31, 2012, and leaving off all non-essential lighting all night, not just for one hour.

For our summer 2012 satellite gallery at the Wing Sang in Vancouver, we created an entire gallery and four exhibitions – designed, built, moved and installed. The following measures kept emissions to a minimum:

- 90% of the showcases were reused from previous shows;
- Supplemental lighting fixtures were reused from previous shows;
- New lighting equipment was energy efficient LED technology;
- 30% of the multimedia equipment was reused from previous shows; and
- 50% of the crating material was reused from previous shows.

Our Exhibitions and Visitor Experience Department completed the upgrade of the Archeology exhibit. All of the cases and counters for the exhibit were reused from *Behind the Scenes Exhibition*. For lighting, the exhibit re-used fixtures from previous exhibits, and the halogen bulbs were replaced with LED technology.

We have a Sustainability Policy and a staff Sustainability Committee to keep us moving forward. Our people are passionate about sustainability, reducing emissions and continued greening of our practices. We look for ways to get people thinking about living sustainably through tips, newsletters, and project and staff meetings.

## **Operational Updates and Changes in 2012**

Although we previously installed state-of-the-art energy-efficient heating, ventilation and air conditioning (HVAC) equipment in our temporary travelling exhibition gallery and have now completed the installation of a HVAC upgrade to our First Peoples Gallery, more is required. International standards for collections preservation call for 24/7 control, including temperature and humidity, of the environment where the artifacts and collections are exhibited or housed. This could impact the future energy requirements of the Corporation.

To minimize impact on energy requirements, the new HVAC system installations have employed many innovative strategies for reducing the extra energy required for the fine humidity and temperature control. These included free cooling/humidification based on dew point, dehumidification coupled with fan speed, electronic air filtration, air cooled chiller, variable speed drives, and Direct Digital Control (DDC).

## **Action Plans to Continue Reducing Greenhouse Gas Emissions 2013 – 2015**

The Royal BC Museum intends to continue its sustainability programs and recognizes the importance of incorporating carbon neutral planning into the organization's strategic plan. As part of the BC Hydro Continuous Optimization Program, energy-saving measures implemented in the fall of 2012 will be monitored in 2013 with final reporting to BC Hydro in early 2014.

We will continue to undertake energy and other sustainability initiatives and improvement upgrades, replace existing toilets with low flush toilets and install other low-flow water fixtures; encourage recycling and composting within our facilities, remind staff to turn off the lights when not in use, provide energy tips for the home and continue to educate our staff (and visitors).

## **Leadership**

Our partnership with BC Hydro is very important to us, and we wish to continue to foster that relationship and demonstrate that we "walk the talk" on sustainability activities within our own organizations. In the fall of 2010, we partnered with BC Hydro, Pulse Energy and our Energy Manager (Avalon Energy Management) to participate in the Continuous Optimization Program to improve the level of efficiency in our building operations and energy management programs. Throughout 2011, our energy baseline was captured and established and the data was analysed by our Energy Management Consultant. In the fall of 2012, we implemented energy saving measures that were identified by Avalon Energy Management and approved by BC Hydro. These measures will be monitored throughout 2013.

To demonstrate its leadership in sustainable operations, the Royal BC Museum will continue to:

- commit to undertake economic and other measures to increase the organization's energy efficiency and resulting positive effect on sustainability; minimize its consumption of non-renewable energy, minimize water consumption, and continue to grow its recycling program to include compostable materials in other areas;
- landscape using environmentally friendly plants, and reduce the water use on its grounds;
- implement sustainable building design and construction principles when renovating or constructing new buildings or exhibits;
- balance quality, cost and environmental sustainability in its purchasing and investment decisions including considering long term and life-cycle costs to achieve this balance;

- support the BC Government's Climate Action initiatives by assessing the sustainability impacts associated with its activities and report specific targets, priorities and timetables for achieving its renewed sustainability and energy management objectives;
- use its capacity and leadership role in the museum/archives community to promote and educate others about ecological integrity, biodiversity and sustainability within and beyond the borders of the institution (e.g., through initiatives like the Climate Change Gallery and research by our curators); and
- develop, adopt and promote environmentally sustainable practices and processes in all of its operations and in the greater community, including video and phone conferencing and Internet meeting (e.g., LiveMeeting) instead of traveling to meetings.

Priority will be given to identifying ways to improve the long-term quality and capacity of the environmental, social and economic systems that support the Royal BC Museum's activities and needs. This will include the use and acquisition of environmentally friendly/sustainable products wherever possible in developing our exhibitions; choosing goods and services that are consumed and/or sold on the site (e.g., by food services providers and shops); the use of environmentally friendly products by staff and our property management services provider and ensuring the ecological integrity of our future building and site initiatives.

# Royal BC Museum Corporation - 2012 Carbon Neutral Action Report

## Actions Towards Carbon Neutrality

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

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
<b>Mobile Fuel Combustion (Fleet and other)</b>					
<b>Behaviour change program</b>					
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress	Staff have been provided with anti-idling information in newsletter tips, and we have requested that they practice anti-idling when using the vehicle	Continue steps taken in 2012	2010	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress	We have bike racks on site, and lockers and showers are available for all staff. Staff also have the opportunity to purchase a bus pass through payroll deductions	Continue to practice other methods of travel	2008	No End Date (Continuous)
<b>Vehicle fuel efficiency</b>					
Replace vehicles with more fuel-efficient models	In Development	Unable to take action in 2012 as the current lease expires in 2013, we are analyzing options available	New fuel efficient vehicle should be in place by the end of 2013, if financially viable for our organization	2013	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	In Development	Unable to take action in 2012 as the current lease expires in 2013, we are analyzing options available	New fuel efficient vehicle should be in place by the end of 2013 if financially viable for our organization	2013	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	Our vehicle is regularly maintained through the PHH program	Continue to maintain through the PHH program	2008	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity</b>					
<b>Behaviour change program</b>					
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress	Non essential lights are turned off, computers are turned off, blinds are pulled down and energy savings are noted in real kWh. Energy saving measures, good workstation habits, post it reminders are always in use. Helpful hints are mentioned in every issue of the Property Management and Operations newsletters (internally distributed through email and posted on our website)	Continue to practice all steps taken in previous years and any other energy saving measures that can be introduced	2008	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Computers and monitors are turned off by Power Management Software, staff are encouraged to turn off power bars for such things as chargers and desk lamps, kettles, etc.	Continue to use Power Management Software for computers and monitors and turn off power bars that are charging other items, when not in use	2008	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Computers and monitors are turned off by Power Management Software, staff are encouraged to turn off power bars for such things as chargers and desk lamps, kettles, etc.	Continue to use Power Management Software for computers and monitors and turn off power bars that are charging other items when not in use	2008	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Staff have been asked to shut blinds at the end of the day and when the sun is shining in (to reduce solar gain), and the Sustainability Committee go on energy saving walkabouts on a regular basis	Continue to shut blinds at the end of the day and continue to have the committee go on walkabouts regularly	2008	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress	Raise awareness and promote and practice power smart measures. We encourage staff to reduce energy in the home as well as at work and tips on energy conservation are posted regularly in the Property Management and Operations newsletters which are sent to all staff and partners as well as volunteers and members of the RBCM	Continue to raise awareness and promote and practice power smart measures	2008	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress	Newsletters and emails to staff are sent out frequently asking staff to use the stairs instead of elevators	Continue to promote and practice	2008	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	"Turn off" stickers have been used in all areas and Security also checks to ensure items are unplugged when they do their nightly rounds	Continue to use stickers and check to ensure items are unplugged at night	2008	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress	Tips about water conservation are included in the Property Management and Operations newsletters	Continue to post tips in the newsletters	2008	No End Date (Continuous)
<b>IT power management</b>					

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Install power management software which shuts down computers outside of regular business hours	Completed (in Previous Year)				No End Date (Continuous)
Implement server virtualization	Completed (in Previous Year)				No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Completed (in Previous Year)				No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Ongoing/In Progress	Unable to take action due to lack of funding	Continue to replace as funding permits, and operatinally feasible to do so.	2008	No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Ongoing/In Progress	No action taken due to lack of funding for new devices. Existing devices have auto-sleep.	Will continue to enable as new devices are installed.	2008	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Completed (in Previous Year)				No End Date (Continuous)
<b>Other Stationary Fuel Combustion</b>					
Solar powered trash compactors on site	Ongoing/In Progress	Solar powered garbage compactors are in place around the exterior of the building	Install additional compactors as required	2008	No End Date (Continuous)
Motion sensor lighting in public washrooms	Ongoing/In Progress	Motion censored lights are used in the washrooms and the locker rooms	Continue to add during renovations and new construction and other areas as required	2009	No End Date (Continuous)
<b>Owned buildings</b>					
Establish energy performance baseline for owned buildings	Ongoing/In Progress	Participating in the Continuous Optimization Program with our partner, BC Hydro. Monitoring our energy usage and establishing a baseline that will be used to move us forward with energy upgrades	Continue to review and implement energy upgrades as funding permits. Annual review by Energy Consultant	2010	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	Replaced eight outdoor lamp posts with new lighting	Continue to improve energy efficient upgrades as funding permits	2008	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Ongoing/In Progress	One small air conditioning unit and two walk in coolers (fur storage and collections storage) under five tons are on site and regularly maintained	Continue to maintain including monitoring refrigerant. Work with government as required as the majority of the RBCM's cooling is received from the Central Cooling plant	2008	No End Date (Continuous)
<b>Planning/management</b>					
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	An Energy Management Consultant reviews our energy program on an annual basis and we continue to participate in the IAMFA benchmarking program	Continue to have consultant review our organization and participate in IAMFA benchmarking program	2008	No End Date (Continuous)
<b>Retrofit details for owned buildings</b>					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	The majority of HVAC equipment is 40+ years old. Unable to take action to replace with new HVAC system in 2012 due to lack of funding available. New HVAC systems were installed in our temporary gallery in 2009 and in the First Peoples gallery in 2011.	Continue to upgrade as funding permits	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	Updated eight outdoor courtyard lamp fixtures with new ballasts and lower wattage bulbs for a savings of 400 watts savings. Reused light fixtures from previous exhibits for an Archeology exhibit, and replaced halogen bulbs with LED technology	Continue to upgrade lighting systems as funding permits	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	Unable to take action in 2012 due to lack of funding available. Many of our systems are already under a DDC system.	Continue to upgrade as funding permits, and add DDC to equipment where viable.	2008	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	No action taken in 2012 due to lack of funding available	Will consider for future upgrades	2008	No End Date (Continuous)
<b>Supplies (Paper)</b>					
<b>Behaviour change program</b>					

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Not Yet Evaluated				No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	This is highly encouraged and in most instances is already in place	Continue to encourage paperless meetings and or presentations	2008	No End Date (Continuous)
<b>Electronic media in place of paper</b>					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Not Yet Evaluated				No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress	RBCM has always used this process - prior to having a shared drive, shared folders were used in Outlook. Also, printing out large documents is discouraged. All competition documents are saved in a shared project folder with restricted access to eliminate large print outs.	Continue following this practice and encourage people to consider the environment before printing	2008	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress	All staff are on electronic payroll and use the Employee Self Service system to access pay information	Continue this practice with all new staff	2009	No End Date (Continuous)
<b>Other Paper Supplies Actions</b>					
Membership newsletters are sent out via email to those members with email addresses	Ongoing/In Progress	Magazines and membership newsletters are sent out via email to all those members with email addresses, plus e-Bulletin updates are sent out rather than mail outs	Continue to send all mail outs by email when able to. Service Plan and Annual Reports are available on the website	2009	No End Date (Continuous)
<b>Paper Type</b>					
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	Some coloured paper is not available in 100% recycled, but is 30% recyclable	Where 100% recyclable paper is not available, continue to order the 30% recycled paper	2008	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	Corporate letterhead, envelopes and business cards are printed on Mohawk Options 100% pc white. They are made with wind power and are Green Seal Certified and acid free. They are also FSC (Forest Stewardship Council) Certified and contain 100% post consumer waste. All white photocopier paper is 100% recycled. Memberships letterhead and envelopes purchased are FSC Certifiable stocks, but not 100% PC content	Continue to purchase 100% recycled paper supplies. Memberships letterhead and envelopes will be purchased using 100% PC content	2009	No End Date (Continuous)
<b>Printer/document settings</b>					
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	Continue to use double-sided copying practices	Continue to use double-sided copying practices	2008	No End Date (Continuous)

## Royal BC Museum Corporation - 2012 Carbon Neutral Action Report

### Actions to Reduce Provincial Emissions and Improve Sustainability

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

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
<b>Education, Awareness, and Engagement</b>					
<b>Awards/Recognition</b>					
Establish a sustainability/green awards or recognition program	Not Yet Evaluated				No End Date (Continuous)
<b>Other Education, Awareness, and Engage</b>					
Participate in Earth Hour annually	Ongoing/In Progress	Participated in Earth hours and reduced our consumption by 7.4%. Staff are also encouraged to participate and to share information with family and friends. Also posted in newsletters.	Continue to participate and promote and influence our onsite partners	2008	No End Date (Continuous)
<b>Staff Professional Development</b>					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	Some staff have taken courses on greener choices for materials and supplies purchased, and reports have been prepared for material options/potential sponsors/design courses to educate staff on greener choices for material and supply purchases. Recycling of materials or supplies is highly supported by staff.	Continue to purchase green materials and supplies, and keep educated on greener choices available. Recycle materials and supplies for new exhibitions. Balance quality, cost and environmental sustainability in its purchasing and investment decisions including considering long term and life-cycle costs to achieve this balance	2008	No End Date (Continuous)
Include green options in employee performance measurement system	Ongoing/In Progress	Staff EPDP's reflected responsibility for environmental sustainability and staff were supported with their plans	Continue to support environmental sustainability and encourage learning opportunities	2008	No End Date (Continuous)
<b>Staff awareness/education</b>					
Provide education to staff about the science of climate change	Ongoing/In Progress	One of our staff is continuously involved in the climate change studies and we have audio sessions daily, in our Natural History Gallery, related to climate change	Continue to support climate change studies and practice and promote	2008	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	Water conservation practices are outlined in issues of the Property Management and Operations newsletters.	We will continue to undertake energy and other sustainability initiatives and improvement upgrades, replace existing toilets with low flush toilets and install other low-flow water fixtures, encourage recycling and composting within our facilities, remind staff to turn out lights when not in use, provide energy tips for the home and continue to educate our staff and visitors	2009	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	Tips are in the newsletter and are posted for all to see on the website	Continue to practice and promote	2008	No End Date (Continuous)
Provide sustainability education during new staff orientation	Not Yet Evaluated				No End Date (Continuous)
<b>Team-building</b>					
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	We have a Sustainability policy and a Leadership Committee to keep us moving forward. Our people are passionate about sustainability, reducing emissions and continued greening of our practices. We look for ways to get people thinking about living sustainably through tips, newsletters, and project and staff meetings	Continue to remain active and engaged. The Royal BC Museum intends to continue its sustainability programs and recognizes the importance of incorporating carbon neutral planning into the organization's strategic plan. As part of the BC Hydro Continuous Optimization Program, energy-saving measures implemented in the fall of 2012 will be monitored in 2013 with final reporting to BC Hydro in early 2014	2008	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	Sustainability Projects are funded through base operations (Property Management and Site Development)	The Property Management and Site Development team will continue to be responsible for implementation of various sustainability initiatives	2008	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress	Staff have been educated on greener choices for supplies, and purchases although we have always looked at purchasing greener materials. RBCM is a participant in the Green Tote program with	Continue to purchase green materials and supplies, and participate in the Green Tote program	2008	No End Date (Continuous)

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### Actions to Reduce Provincial Emissions and Improve Sustainability

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

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		Queen's printer - supplies are delivered in a green tote and the tote is returned to Queen's printer through BC Mail Plus.			
<b>Other Sustainability Actions</b>					
<b>Adaptation to Climate Change</b>					
Assessed whether extreme weather events and/or long term changes in climate will affect the organization's business areas	Ongoing/In Progress	Business Continuity Committee was established in late 2012. Collection Risk Assessment identified issue with sea level rise and storm surge increases	Committee will continue to review and evaluate and update as required in living document. Master plan project beginning in March 2013, will consider in their review.	2012	No End Date (Continuous)
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	Ongoing/In Progress	Business Continuity Committee was established in late 2012. Collection Risk Assessment identified issue with sea level rise and storm surge increases	Committee will continue to review and evaluate and update as required in living document. Master plan project beginning in March 2013, will consider in their review.	2012	No End Date (Continuous)
<b>Building construction, renovation</b>					
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress	Our summer 2012 satellite gallery at the Wing Sang in Vancouver, was created using measures to keep emissions to a minimum. 90% of the showcases were reused from previous shows; supplemental lighting fixtures were reused from previous shows, new lighting equipment was energy efficient LED technology; 30% of the multi-media equipment was reused from previous shows; and 50% of the crating material was reused from previous shows	Continue to reuse and recycle in construction of Exhibitions and divert demolition debris from the landfill on incineration facilities	2008	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	All renovations noted in other areas of this report were in practice with lifecycle costing	Continue to encourage and practice	2008	No End Date (Continuous)
<b>Commuting to and from home</b>					
Introduce telework/work from home policy	Ongoing/In Progress	Many of our staff have flexibility in their working hours, or work from home	Further evaluation and review by Executive to determine implementing opportunities for additional staff to work from home or have flexible working hours	2009	No End Date (Continuous)
Offer staff a compressed work week	Ongoing/In Progress	Options are provided to staff to reduce their work week/hours when possible subject to operational requirements	Continue to support requests for reduced/compressed work week	2008	No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress	Bus passes are made available through payroll deduction, and many staff bike to work	Continue to encourage biking to work, carpooling, or taking the bus	2008	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress	Shower and locker facilities are available	Shower and locker facilities will continue to be available	2008	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress	Bicycle storage is available for staff and bike racks for staff and public are located in various areas around the museum precinct	Continue to provide bicycle storage	2008	No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress	Green purchase practices are encouraged and practiced	Continue to encourage and use green purchasing practices	2008	No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	Ongoing/In Progress	No green standards in place, but we purchase green where we can	Continue to replace furniture with green purchasing practices, as funding permits, and continue to recycle old furniture	2010	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress	Our on-site cleaning service provider is required to use biodegradable cleaning products and post consumer paper towels and toilet paper, which are essential for the safekeeping of our collections, and being responsible stewards. Hand soap is green-certified; paper towels are 100% recycled and 88% post consumer material and toilet paper is 100% recycled and 88% post consumer	Continue to practice using green cleaning products	2008	No End Date (Continuous)

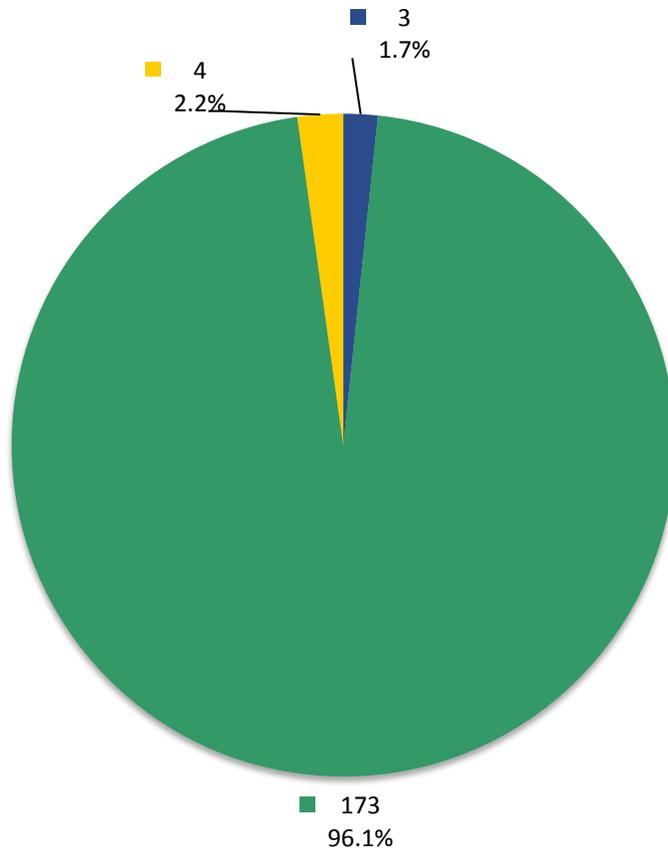
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### Actions to Reduce Provincial Emissions and Improve Sustainability

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

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		material.			
<b>Waste reduction/diversion</b>					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	A recycling program is in place for wood, metal, glass, tin, plastics, cardboard, paper and compost. A no bottled water policy is in place. Further recycling centers have been added to the buildings for public use. 255 cubic yards were diverted from the landfill by volume and 5716 kgs of compost was collected for reuse. 220 kgs of packaging materials (Styrofoam/soft plastics, etc.) resulting in a further 18 cubic yards being diverted from the landfill.	Continue to ensure all options of recycling practices are used	2008	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress	Hazardous waste is picked up and disposed of properly	Continue to review and arrange for pickup and/or proper disposal	2009	No End Date (Continuous)
<b>Water conservation</b>					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress	No action taken in 2012 due to lack of funding	Continue to replace as funding permits	2009	No End Date (Continuous)
Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features	Ongoing/In Progress	Three new low flush toilets were installed in Willie's Cafe. Landscaping includes native and drought resistant plants and more mulch was added to the gardens to conserve water	Continue to replace toilets as funding permits. Continue to plant native and drought resistant plants and add mulch where necessary	2009	No End Date (Continuous)
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	Ongoing/In Progress	No action taken in 2012	Continue to explore opportunities when renovations are required. Site development will be designed to meet LEED gold standards	2009	No End Date (Continuous)

**Royal BC Museum  
Greenhouse Gas Emissions by Source  
for the 2012 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 180**

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

**Offsets Applied to Become Carbon Neutral in 2012 (Generated May 27, 2013 12:17 PM)**

Total offsets required: **179**. Total offset investment: **\$4,475**. Emissions which do not require offsets: **0** \*\*

\*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.