

2011 Carbon Neutral Action Report

University of British Columbia
Vancouver Campus

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campus + community planning
campus sustainability



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THE UNIVERSITY OF BRITISH COLUMBIA

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1. Executive Summary

Building on over a decade of successful climate leadership, in 2010 UBC President Toope announced UBC's aggressive **Climate Action Plan** targets, committing the Vancouver campus to achieve greenhouse gas (GHG) reductions of 33 percent below 2007 levels by 2015, 67 percent by 2020 and 100 percent by 2050 – among the most ambitious targets of the world's top 40 universities.

In the first two years of implementing its Climate Action Plan, UBC made significant progress on achieving its aggressive 2015 GHG reduction targets, investing \$150 million in four signature projects:

- Completed Phase 1 of one of the largest **steam to hot water conversions** in North America that will replace 14 km of aging steam system piping infrastructure, reduce emissions by 22 per cent and save up to \$4 million a year in operational and energy costs.
- In February 2011, UBC broke ground on the \$27 million **Bioenergy Research and Demonstration Facility**, which will eliminate 9 per cent of campus GHG emissions per year by reducing natural gas consumption used for generating steam. The first commercial-scale demonstration of biomass gasification co-generation in North America, this innovative research and teaching platform will yield valuable new knowledge in the clean energy sector and will inform new global standards for the performance of bioenergy systems.
- The **Continuous Optimization "Building Tune-up"** program is retro-commissioning 72 buildings to reduce emissions in core buildings by 10 per cent. A pilot in two buildings is complete, the next phase of implementation is underway in 17 buildings, and investigation of 21 more buildings is in progress.
- The **Centre for Interactive Research on Sustainability (CIRS)**, a regenerative building, opened in November 2011. CIRS is targeting both LEED Platinum and the Living Building Challenge, and is the home of the UBC Sustainability Initiative (USI), a strategic management group that connects and leverages UBC's sustainability operations, teaching and learning, and research and partnerships.

Of the 111 actions and sub-actions identified in UBC's comprehensive Climate Action Plan, 20 are complete, 45 are in progress or ongoing, 27 are under development, and a further 19 are longer-term goals that have not yet been started or were re-evaluated and removed.

The Climate Action Plan's strong business case and cross-campus commitment make UBC a model for other institutions developing a climate action plan. As well as reducing GHG emissions, UBC's investments in innovative clean energy infrastructure provide opportunities for ground-breaking research and industry partnerships. We are pleased to present our climate action progress in 2011.



Executive Approval

Nancy Knight

Associate Vice President – UBC Campus and Community Planning

2. Sustainability at UBC Vancouver

2.1. Overview and History

As a leading research institute and one of the largest universities in the country, UBC has long recognized its role and responsibility as a climate and sustainability leader. In 1997, UBC was the first Canadian university to adopt a sustainable development policy and, a year later, to open a Campus Sustainability office. A decade later, UBC achieved the international targets established by the Kyoto protocol (six per cent reduction in GHG emissions from 1990 levels) five years ahead of schedule for its core academic buildings, during a time when building floor space grew by 35 per cent and enrolment by 48 per cent.

In 2010, the **UBC Sustainability Initiative (USI)** began integrating UBC's academic and operational efforts in sustainability across the campus. Under the USI umbrella, the offices of Teaching and Learning, Research and Partnerships, and Campus Sustainability work collaboratively to leverage efforts in environmental, economic and social sustainability. In 2011, UBC's sustainability achievements were recognized as UBC became Canada's first university to receive a Gold rating from the **Sustainability Tracking, Assessment & Rating System (STARS)**, a comprehensive university sustainability ranking system administered by the Association for the Advancement of Sustainability in Higher Education (AASHE).

For a full list of Sustainability Plans and Reports at UBC, please visit: <http://sustain.ubc.ca/about-us/plans-reports>.

2.2. Climate Action Targets and Leadership

UBC was the first Canadian university to launch a comprehensive **Climate Action Plan** with a detailed implementation framework to achieve aggressive GHG reduction targets.

The Climate Action Plan is the result of a multi-year process that engaged over 200 UBC students, staff, faculty and community members. From 2008 to 2010, UBC prepared its Climate Action Plan by leading campus-wide consultations and working groups to develop targets and strategies for emissions reductions. UBC's consultative, participatory approach leveraged operational insight, academic expertise and grassroots passion to foster institutional commitment and broad support. The Plan identifies GHG emissions reductions strategies in the areas of Campus Development and Infrastructure, Energy Supply and Management, Fleets and Fuel Use, Food, Transportation, and Business Travel and Procurement.

In 2010 President Stephen Toope committed UBC's Vancouver campus to aggressive GHG emission reduction targets. The university aims to reduce GHGs:

- 33 per cent below 2007 levels by 2015
- 67 per cent below 2007 levels by 2020
- 100 per cent below 2007 levels by 2050

Three major capital projects will achieve UBC's ambitious 2015 target and transition the campus from a fossil fuel energy system to a renewable energy system with diversified clean energy sources. The projects offer an exemplary model of partnering with industry, government, and researchers to leverage funding, advance innovative clean energy solutions, and contribute to globally relevant research.

3. 2011 Greenhouse Gas Emissions

With over 48,000 students, 13,000 staff and faculty, and an institutional footprint of 402 hectares, UBC is one of the largest universities in Canada. The Vancouver campus is home to 368 institutional buildings totalling 14.7 million square feet.

In 2011, total GHG emissions for UBC's Vancouver campus amounted to 63,803 tonnes CO₂e. Since 97 per cent of these emissions come from Vancouver campus buildings, with 76 per cent of the total occurring at the campus steam plant, key actions focus on improving energy efficiency in campus buildings and connecting alternative energy sources to the campus district energy system.

It was estimated that fugitive emissions of refrigerant gases comprise less than 1 per cent of UBC's Vancouver campus total emissions and an ongoing effort to collect data to estimate these emissions would be disproportionately onerous. For this reason, emissions from this source have been deemed out of scope and have not been included in UBC's Vancouver campus GHG emissions profile.

3.1. Greater Emissions Detail

The Climate Action Plan GHG reduction targets apply to emissions from core and ancillary buildings, TRIUMF, fleet and paper. The UBC Vancouver Campus GHG inventory, which comprises these elements, has been compiled each year since 2006. In 2011, the offsettable Vancouver Campus emissions amounted to 63,803 tCO₂e. A detailed breakdown of the campus emission sources is provided in *Table 1*.

Table 1: UBC Vancouver Campus Emissions, 2011

Source	2007 emissions (tCO ₂ e) ¹	2011 emissions (tCO ₂ e) ¹	Per cent of 2011 campus emissions ¹
UBC Vancouver Campus – Core buildings²	46,478	46,048	72%
Steam (natural gas and light fuel oil)	40,106	39,046	61%
Natural gas (direct burn)	3,515	3,408	5%
Electricity	2,856	3,594	6%
UBC Vancouver Campus – Ancillary buildings³	11,405	15,686	25%
Steam (natural gas and light fuel oil)	7,311	9,630	15%
Natural gas (direct burn)	3,108	4,790	8%
Electricity	986	1,266	2%
TRIUMF⁴	230	221	0.3%
Fleet	1,973	1,264	2%
Paper	1,003	584	1%
Total Vancouver Campus Offsettable Emissions	61,089	63,803	100%

¹ May not sum to total due to rounding.

² Core buildings comprise academic and administrative buildings.

³ Ancillary buildings include student housing, conference, athletics and parking facilities.

⁴ Although TRIUMF is a joint venture with other universities, it has traditionally been included in the UBC Vancouver Campus inventory since it is located on campus. UBC is responsible for 1/11th of emissions.

Under the Greenhouse Gas Reductions Target Act, UBC has been required to report and offset its emissions since 2010, including emissions from all properties owned and leased by UBC and its subsidiaries. When emissions from off-campus properties are included, total emissions amounted to 67,570 tCO₂e in 2011. A summary of the emissions attributed to different off-campus units of UBC is provided in *Table 2*.

Table 2: Off-Campus Property Emissions, 2011

Source	2011 emissions (tCO ₂ e)
UBC Properties Trust – Owned Buildings¹	1,704
UBC Robson Square Campus	218
Other Off-Campus Properties²	1,589
Joint Ventures with other universities³	253
<i>Great Northern Way Campus</i>	227
<i>Bamfield Marine Sciences Centre</i>	26
UBC Properties Trust – Paper	3
Total Off-Campus Property Emissions	3,767

¹ UBC Properties Trust, a company wholly owned by UBC, owns several residential buildings that are rented to staff, faculty and students, as well as retail space leased to commercial tenants on campus.

² Other off-campus properties include 20 buildings and office spaces throughout the province, ranging from rustic field camps to a dairy research farm.

³ Although TRIUMF is a joint venture with other universities, it has traditionally been included in the UBC Vancouver Campus inventory and is thus not included in this table.

Going beyond provincial requirements, the annual UBC Vancouver Campus GHG inventory also quantifies several categories of optional or Scope 3 emissions (*Table 3*). UBC's Climate Action Plan includes strategies for reducing Scope 3 emissions related to commuting, business travel, procurement and food.

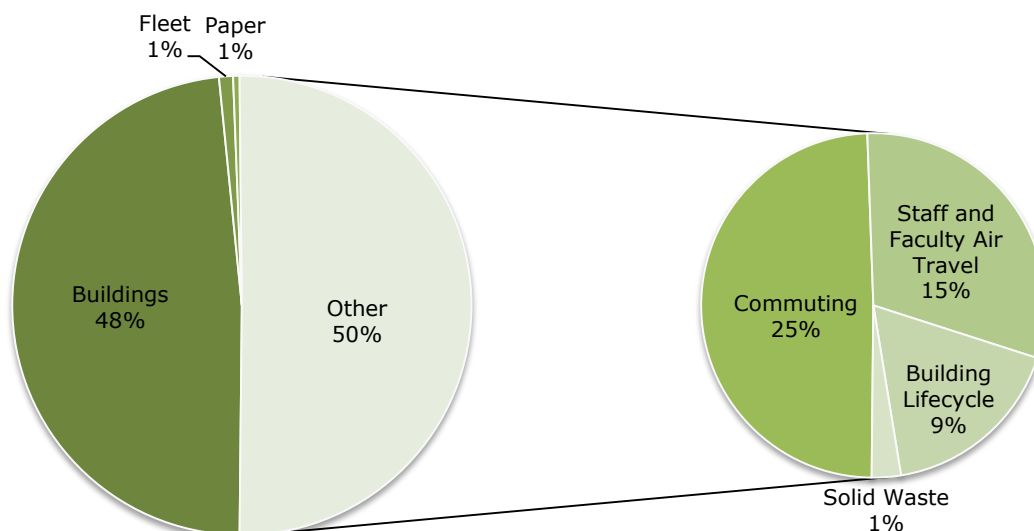
Table 3: UBC Vancouver Campus Scope 3 Emissions, 2011

Source	2007 emissions (tCO ₂ e)	2011 emissions (tCO ₂ e)
Commuting	28,880	31,840
Staff and Faculty Air Travel¹	13,600	19,710
Building Lifecycle	10,190	11,290
Solid Waste	1,930	1,760

¹ Not calculated in 2007; the value from 2006 is provided.

The combined emissions from commuting, business travel, building lifecycle and solid waste (*Table 3*) were approximately equal to the offsettable Vancouver Campus emissions (*Table 1*) in 2011. *Figure 1* shows the relative proportions of the various emission categories for the UBC Vancouver campus.

Figure 1: UBC Vancouver Campus Emissions by Scope, 2011



3.2. Comparison to Baseline Year

Campus emissions increased 5 per cent from 2007 to 2011, during a period when building space increased by 7 per cent and student enrolment increased by 11 per cent. The emissions from campus buildings along with fleet and paper amounted to 1.53 tCO₂e per full-time equivalent student in 2011, a 5 per cent decrease in emissions per student since 2007.

The absolute increase in emissions from 2007 to 2011 can be attributed to several factors including additional floor space. UBC's Vancouver Campus building portfolio area increased by over 84,000 m² between 2007 and 2011, with several older buildings demolished to make way for construction of 22 new buildings. Notable new buildings that opened in 2011 include the Centre for Interactive Research on Sustainability (CIRS), Allard Hall (new Faculty of Law building), hām'ləsəm' and q'ələxən Houses in Totem Park Residence, and the new UBC Tennis Centre.

Table 4 outlines the change in campus emissions since the 2007 baseline year, along with indicators of UBC Vancouver campus growth. Student enrolment increased by over 4,000 full-time equivalent (FTE) students from 2007 to 2011 and faculty and staff increased by roughly 560 FTE employees.

Table 4: UBC Vancouver Campus Emissions Compared to 2007 Baseline

Key Performance Indicator	2007	2011	Change from 2007 to 2011
GHG Emissions (tonnes CO₂e)	60,976	63,803	+4.6%
Floor Space (square meters)	1,284,592	1,368,873	+6.6%
Student Enrolment (FTE)	37,589	41,598	+10.7%
GHG Emissions per Student (tonnes CO₂e/FTE)	1.62	1.53	-5.4%
Staff and Faculty Employees (FTE)	12,461	13,020	+4.5%

3.3. Offsets Applied to Become Carbon Neutral in 2011

UBC purchased a total of 67,570 tonnes of offsets from Pacific Carbon Trust for the UBC Vancouver Campus and off-campus properties to become carbon neutral for 2011.

A portion of the fuel consumed by UBC contains renewable content as mandated by BC's Renewable and Low Carbon Fuel Requirements Regulation. These emissions, reported as biomass in SMARTTool, amounted to 46.3 tonnes CO₂e and are not required to be offset. Including biomass emissions, total emissions for the UBC Vancouver Campus and off-campus properties amount to 67,616 tonnes.

3.4. Changes to 2010 Emissions and Offsets Reporting

Several errors and omissions were detected in the 2010 emissions reporting and have been corrected. The corrections applied only to the off-campus properties. The corrected emissions for the combined UBC Vancouver Campus and Off-campus properties are summarized in *Table 5* below. UBC under-reported in 2010 and this year purchased an additional 665 tonnes of offsets to continue to be carbon neutral for 2010.

Table 5: Corrections to 2010 Emissions

Category	2010 Reported Emissions (tCO ₂ e)	2010 Corrected Emissions (tCO ₂ e)	Additional offsets purchased (tCO ₂ e)
Total offsettable emissions	60,792	61,457	665
Total emissions including biomass	60,856	61,520	

4. Emissions Reduction Activities

4.1. Actions Taken to Reduce Greenhouse Gas Emissions in 2011

The **Climate Action Plan** sets out actions in six areas that are the key sources of UBC's GHG emissions. The attached *Appendix A* provides a detailed update on each action in the plan. Of the 111 actions and sub-actions identified, 20 are complete, 45 are in progress or ongoing, and a further 27 are under development, while 19 are longer-term goals that have not yet been started, or were re-evaluated and removed. A summary of key achievements are presented here.

In the first two years of implementing its Climate Action Plan, UBC made significant progress on accomplishing its aggressive 2015 GHG reduction targets of 33 per cent below 2007 levels by 2015, investing \$117 million in innovative energy efficiency and infrastructure projects that will reduce emissions and result in cost savings:

- Began one of the largest **steam to hot water conversions** in North America that will replace 14 km of aging steam system piping infrastructure, reduce emissions by 22 per cent and save up to \$4 million a year in operational and energy costs. The first phase, completed January 2012, connected 15 buildings and is estimated to reduce natural gas use by 12,000 GJ.
- The **Bioenergy Research and Demonstration Facility**, a partnership with Vancouver-based Nexterra and General Electric, broke ground in February 2011. The \$27 million facility is the first biomass-fuelled, heat-and-power co-generation system of its kind in the world. Fuelled by clean wood biomass diverted from the landfill, the BRDF will eliminate 9 per cent of campus GHG emissions per year by reducing natural gas consumption used for generating steam. The first commercial-scale demonstration of biomass gasification co-generation in North America, this innovative research and teaching platform will yield valuable new knowledge in the clean energy sector and will inform new global standards for the performance of bioenergy systems.
- The **Continuous Optimization "Building Tune Up"** program is retro-commissioning 72 buildings to reduce emissions in core buildings by 10 per cent. A pilot in two buildings was completed in 2011 and achieved 21 per cent energy savings in those buildings. In 2011 investigation of the next phase of 17 energy-intensive laboratory buildings was also completed. To support this initiative, a Monitoring, Targeting and Reporting System is being embedded within UBC operations. A team of operators remotely monitor Building Management Systems and the Pulse Energy Management Information Software to maintain the buildings' targeted performance.

4.1.1 Scope 1 and 2 Highlights

In addition to the three major capital projects that will achieve the majority of emissions reductions, over 40 staff across campus are championing transformation in their departments to contribute to climate action and sustainability at UBC. In 2011, the second year of implementing the Plan, highlights in the areas of direct and indirect energy include:

Development and Infrastructure

- Centre for Interactive Research on Sustainability (CIRS):** Opened in November 2011, this state-of-the-art regenerative building includes waste heat recovery from a neighbouring building, solar PV, ground-source heating and on-site wastewater treatment. The CIRS building will be a true living lab — home to interdisciplinary researchers working in collaboration with industry and community partners to accelerate sustainability solutions. CIRS is targeting both LEED Platinum and the Living Building Challenge.
- LEED Implementation Guide:** In addition to the provincial requirement that new buildings be LEED Gold certified, UBC developed a LEED Implementation Guide to optimize the LEED process for the UBC campus context and help UBC achieve its sustainability targets. The guide outlines which credits are considered mandatory requirements at UBC, including a minimum of 11 points from Energy & Atmosphere Credit 1, which requires energy performance of 42 per cent better than MNECB for new construction and 39 per cent for major renovations.
- Energy Density Targets:** In addition to the relative performance requirements under LEED, a study was completed in 2011 to recommend absolute energy performance targets for UBC buildings including student residences, offices, classrooms and laboratory spaces. UBC now sets an Energy Density Target for each new building project, expressed in $\text{kWh}_{\text{eq}}/\text{m}^2/\text{yr}$, that the design team must meet or exceed. The methodology for assigning an energy target to a building was piloted on one multi-use building in 2011 and further refined for use in future building projects.



Energy Supply and Management

- Green laboratories:** A pre-feasibility study was completed in 2011 to identify strategies that could be implemented with simple payback of five years or less to reduce energy use related to ventilation and fume hoods in laboratory spaces. Analysis of pilots in 2012 will inform a campus-wide retrofit program. The **Shut the Sash** campaign was initiated in 2011 to educate researchers about fume hood energy use and promote energy-saving behavior.
- Server virtualization:** In 2011 IT Services passed a milestone by provisioning the 1000th virtual server. At the end of the year over 1,500 servers had been virtualized – 95 per cent of the centrally-managed campus total. This initiative aggregates processor, memory, disk and networking capacity so that fewer CPUs are needed – and the remaining CPUs run at much higher utilization rates and are much more energy efficient than the original physical servers.



Fleets and Fuel

- Right-sizing:** Building Operations completed a right-sizing study to determine appropriate makes and models for various trades' use, and also identified the least efficient fleet vehicles that will be replaced with less polluting models.

3.1.2 Scope 3 Highlights

UBC's Climate Action Plan includes strategies for reducing Scope 3 emissions related to food, procurement, business travel and commuting. Highlights from 2011 include:

Food

- Edible landscapes:** A garden guide was developed for starting food gardens on campus within the UBC development process. Approval was granted for a garden at the Geography building, with funding from the **AMS Sustainability Fund**. Future garden sites are being pursued at Green College and the rooftop of the **new Student Union Building**. A student project designed planter boxes for The Point Grill that will be installed in 2012 for herbs to be used in the restaurant.
- Local food:** The **UBC Farm** doubled its supply to dining halls in Vanier & Totem Residences in 2011. UBC Farm has a new cooler for winter storage and now supplies food year-round to campus eateries The Loop Café and The Point Grill. Wednesday Campus Market sales of UBC Farm produce increased approximately 70 per cent from 2010 to 2011.



Procurement and Business Travel

- reuse-it! UBC:** Launched in January 2011, this online service supports department-to-department transfers of furniture, office supplies and electronic equipment. A total of 1,100 items were transferred instead of going to landfill in the first year.
- Sustainability Scorecard:** To influence climate impacts up the supply chain, UBC launched a pilot scorecard with 10 vendors who report on their sustainability actions such as packaging reduction and consolidation of deliveries. The Scorecard is now included in the evaluation criteria of all RFPs.



Transportation (Commuting)

- Parking reduction:** In 2011, four surface parking lots were closed or reduced in size, removing 200 spaces. In addition, fourteen parking spaces in two of UBC's parkades were converted to 170 secure and covered bicycle parking spots.
- Electric vehicles:** Bicycle cages in two parkades now have power outlets for recharging electric bicycles and all new bicycle facilities will have outlets. Two plug-in stations were also installed in Health Sciences Parkade for campus fleet vehicles.



4.2. Plans to Continue Reducing Greenhouse Gas Emissions 2012 – 2014

4.2.1 Scope 1 and 2 Emissions

To achieve UBC's ambitious emissions target of becoming a net energy producer by 2050, UBC has invested in several major capital projects that will be examples for cutting edge clean energy technology and innovative industry partnerships. Over the next three years these projects will achieve UBC's goal of reducing emissions by 33 per cent by 2015:

Converting district heating system to a hot water system

Phases 2 through 7 of this project will be completed in 2012-2014. The \$85 million steam to hot water conversion will heat 130 buildings on campus when it is completed in 2017, reducing UBC's GHG emissions by 22 per cent. The largest source of savings comes from the system's ability to heat the campus while operating at a significantly lower temperature than the outgoing steam system, reducing distribution losses. The lower temperature of the system also enables researchers, students, staff and corporate partners to explore and integrate green technology and best practices in such areas as geothermal energy, ocean thermal energy, solar energy and waste heat recovery. The conversion project is a long-term investment with payback period of almost 25 years, but the lifetime of the district energy system is much longer than that – it is a major investment in sustainable infrastructure with a lifetime of sixty to eighty years.

UBC Bioenergy Research and Demonstration Facility (BRDF)

When it begins operation in 2012, the BRDF will eliminate 9 per cent of campus GHG emissions and provide 25 per cent of UBC's average district heat when operating in thermal mode and 12 per cent in cogeneration mode. In the demonstration or cogeneration mode, the system will generate two megawatts of cost-effective clean electricity – up to six per cent of the campus's average electrical demand and 4.5 per cent of peak demand, equivalent to the amount of electricity to power 1,500 homes. Showcasing the campus as a living lab, the project will also provide research and learning opportunities for faculty and students in the clean energy sector.

Continuous Optimization (Building Tune Up)

The Continuous Optimization program or "Building Tune Up" in 72 buildings totaling 7.7 million square feet will reduce energy consumption and GHG emissions in core buildings by 10 per cent through retro-commissioning measures with combined simple payback of 5 years or less. Phase 1 implementation of energy conservation measures in 2.1 million square feet of research-intensive floor space is underway from January 2012 to March 2013. This \$1.36 million project is expected to reduce core building GHGs by 4.5 per cent with a simple payback of 2.9 years. The Phase 2 investigation of 21 academic and administrative buildings begins in January 2012 and future phases will address the remaining buildings.

4.2.2 Scope 3 Emissions

While not directly responsible for Scope 3 GHG emission sources, UBC recognizes that they are within its sphere of influence and that the University can act to mitigate these emissions. Key initiatives over the next few years will continue to move the campus toward a low carbon future.

Transportation

- **Public Realm Plan:** Improvements to the public realm will enhance the pedestrian and cyclist capability and experience, as well as emphasizing the priority of pedestrians on campus and significantly reducing the number of vehicles circulating through the core of campus.

- **Housing Action Plan:** UBC is developing a Housing Action Plan in 2012 to improve housing choice and affordability for faculty, staff and students on the Vancouver campus, to allow UBC to continue to recruit and retain the highest calibre of faculty, staff and students. The Housing Action Plan will help build a model sustainable university community with decreased commuting emissions.

Procurement and Business Travel

- **UBCBuySmart:** UBC's new online resource solution will assist faculty and staff to purchase goods and services through preferred vendors and pre-qualified suppliers who align with UBC's Supplier Code of Conduct and provide Sustainability Scorecards.
- **Video-conferencing:** UBC is planning to pilot video-conferencing between several departments and UBC Okanagan, and build an inventory of bookable facilities on campus.

Food

- **Food system baseline inventory:** Student projects will compile a baseline inventory of campus metrics and develop action plans for improving the sustainability of the UBC food system, including GHG emissions and healthy, socially and ecologically responsible food options.
- **Composting:** Vermicomposting is being evaluated for the new Student Union Building opening in 2014. Pilot projects will inform recommendations for full-scale commercial composting and an undergraduate thesis project is being conducted in 2012 to maximize the system capacity and quality of compost.
- **On-campus food processing:** A processing facility will be embedded at the new Farm Centre with some capacity to supply food to campus. A needs assessment will determine how faculty would like to make use of the facilities through research and academic courses, and will evaluate feasibility of different products that could be produced in the facility. The new Student Union Building opening in 2014 will include a Brew Pub and a new kitchen co-op to further advance food processing on campus.

5. Links to Relevant Reports

UBC Climate Action Plan

<http://sustain.ubc.ca/climate-action>

UBC Sustainability Plans and Reports

<http://sustain.ubc.ca/about-us/plans-reports>

UBC Sustainability Initiative

<http://sustain.ubc.ca/>

Campus Sustainability Case Studies

<http://sustain.ubc.ca/campus-sustainability/resource-exchange/case-studies>

Appendix A: Climate Action Plan 2011 Implementation Update

- 1. Campus Development and Infrastructure**
- 2. Energy Supply and Management**
- 3. Fleets and Fuel Use**
- 4. Transportation (Commuting)**
- 5. Business Travel and Procurement**
- 6. Food**
- 7. Implementation**

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
		Department(s)	Internal & external	Milestones or specific general stage of the plan (<3 yrs, 3-5 yrs, >5yrs)	Progress to date; next steps if applicable
Campus Development and Infrastructure					
DV-01	Increase the energy efficiency of development on campus				
a)	Adopt MNECB 2011 when available for all new construction including core, ancillary, and market residential development. Target: 30% below current BC building code (about 45% below MNECB 1997) for all new buildings. This target would be similar to achieving 5 LEED points in energy and atmosphere.	Infrastructure Development	SHHS, Building Ops, Campus Sustainability	Commencing 2010. Adopt when available (expected in 2011).	Complete. Requirement for 42% below MNECB 1997 and 5 points in LEED EA credit 1 written into Vancouver Campus Plan and UBC Technical Guidelines.
b)	Commit all UBC ReNew buildings to achieve energy performance targets. Target: 20% below current BC building code (about 35% below MNECB 1997) for all ReNew buildings. This target would be similar to achieving 5 LEED points in energy and atmosphere.	Infrastructure Development	SHHS, Building Ops, Campus Sustainability	Commencing 2010.	Complete. Requirement for 33% below MNECB 1997 and 5 points in LEED EA credit 1 written into Vancouver Campus Plan and UBC Technical Guidelines.
c)	Adopt higher energy efficiency standards for the Residential Environmental Assessment Program (REAP) .	Campus and Community Planning	Infrastructure Development, UBC Properties Trust	< 3 yrs	In progress. Will be completed in 2012.
d)	Develop a LEED® Guide to identify optional LEED® points that are a priority for UBC (e.g. energy and atmosphere) and to share lessons learned to date to guide consultants through LEED® certification at UBC.	Campus Sustainability	Building Ops, Infrastructure Development, SHHS, C&CP	< 3 yrs	Complete. The LEED Implementation Guide was completed in 2011. The guide outlines which credits are considered mandatory requirements by UBC or recommended for the campus. References to the Guide will be inserted in the Technical Guidelines and Campus Plan in 2012.
e)	Develop design guidelines around site orientation to include passive solar heating and light access, tree shading, and co-locating buildings to support shared infrastructure.	C&CP	Infrastructure Development, Building Ops, SHHS, Properties Trust	< 3 yrs	Complete. The Vancouver Campus Plan prioritizes a compact campus, with opportunities for sharing infrastructure and resources and reducing energy usage to be considered in the siting review for each new project and in the more detailed site planning for the mixed-use hubs. The VCP Design Guidelines' section 2.3.10 — Sustainability Best Practice in Building Design — singles out passive design, orientation, shape and massing, windows and glazing as items to be considered early in the design process in order to improve energy performance and comfort.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
f)	Ensure that UBC's Technical Guidelines explicitly require highest standards of energy efficiency.	Infrastructure Development, Building Operations	Building Ops, SHHS, Properties Trust	Complete by end of fiscal year 2009-10.	Ongoing.
g)	Develop " Energy Density Targets " for new student housing and core academic development.	Infrastructure development	C&CP, Building Ops, SHHS, Properties Trust	Establish Targets by 2012, to be included in development by 2013	Complete. A study was completed in 2011 to recommend energy density performance targets for UBC buildings including student residence, office, classroom and laboratory spaces. The methodology for assigning an energy target to a building was tested on Ponderosa Phase 1 in 2011 and refined for use in future building projects.
h)	Increase infill development on the North Campus as a means of increasing density and reducing emissions associated with achieving UBC's growth targets as outlined in the Vancouver Campus Plan (e.g., 50% of students housed on campus by 2030).	C&CP	Campus Sustainability	ongoing	Ongoing. The Vancouver Campus Plan emphasizes higher-density mixed-use facilities at designated infill locations on the North Campus to increase student housing capacity and support a greater variety of academic and personal services on campus. The Ponderosa Housing Hub broke ground in 2011 and will provide approximately 960 student residences beds, academic space and a range of community services and amenities.
DV-02	Establish long term funding to support energy efficiency for both new construction and existing buildings.				
a)	Evaluate the legal and financial opportunities to create new financing mechanisms for retrofits . These could include the UBC endowment, working capital, GPO, etc.	Treasury		End of fiscal year 2009 - 2010	Under development. In 2011 UBC signed onto the Billion Dollar Green Challenge, which encourages universities to invest in self-managed revolving funds that finance energy efficiency improvements. The green revolving fund will lend money to specific projects, which then repay the loan through an internal account transfer from savings in the utilities budget, to reinvest in future projects. The mechanisms for doing so at UBC will be developed in 2012.
b)	Incorporate energy efficiency awareness into communications with financial donors and granting agencies to ensure that the green and energy efficient features of buildings are properly funded.	Development Office	Infrastructure Development, Building Ops, SHHS	Ongoing	Not yet started.
c)	Develop funding mechanisms for addressing energy efficiency in existing and new ancillary buildings (e.g. housing and athletics facilities).	C&CP	SHHS, Athletics, Infrastructure Development	< 3 yrs	In progress. A Community Energy Manager was hired in 2011 and is developing Energy Management Plans for ancillary units. The Billion Dollar Green Challenge revolving fund mentioned above can also be a source of funding for these facilities.
d)	Include the lifecycle costs (e.g., operations and maintenance, energy costs, carbon tax, offset costs) when developing business cases for capital projects.	Infrastructure Development	Building Operations, SHHS, Properties Trust	Ongoing	Under development. High level LCC required by Board of Governors but no standardised system available at the project level. Lifecycle costing is required in the Technical Guidelines.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
e)	Develop UBC specific financial business case criteria (e.g. payback thresholds, etc.) to guide the evaluation of facility upgrades.	Infrastructure Development, Treasury	Building Operations, SHHS, Athletics, Properties Trust	End of fiscal year 2009-10	Under development.
DV-03	Implement comprehensive renovation projects for existing buildings.				
a)	Support the proposed UBC ReNew Phases 2 through 5 in order to continue retrofits of existing core buildings and ensure that high performance building envelopes and systems are included in ReNew projects. To support this initiative, project budgets should be allocated in such a way that 5% of the overall budget is put towards energy performance upgrades.	Infrastructure Development	Building Operations, Campus Sustainability	3 - 5 yrs	Longer term goal. Capital plan identifies several projects that are being evaluated against funding availability. BC government will be requested to commit to 50% matching funding as was the case with UBC ReNew Phase 1.
b)	Develop a ReNew equivalent program for Ancillary Buildings (Housing and Athletics).	Infrastructure Development	Building Operations, C&CP	Program development and approval by 2012.	Not yet started.
DV-04	Work with our neighbors and partners to understand and reduce the complete UBC carbon footprint.				
a)	Support the University Neighbourhood Association (UNA) in developing an emissions inventory and strategies for reducing emissions from campus neighborhoods.	Campus Sustainability	UNA, C&CP, SHHS, Properties Trust	Commence in 2010.	Under development. A Community Energy and Emissions Inventory and Plan will be completed in 2012/13.
DV-05	Leverage our experiences in development and emission reduction for academic and research purposes.				
a)	Support the inclusion of climate change and energy efficiency in the Social, Ecological, Economic Development Studies (SEEDS) program on campus to build a campus scale learning network and support the incubation of demonstration projects related to net positive energy and water.	Campus Sustainability	All departments	continuous	Ongoing. In 2011, 29 student reports related to climate, energy and water themes were completed through the SEEDS program.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
		Department(s)	Internal & external	Milestones or specific general stage of the plan (<3 yrs, 3-5 yrs, >5yrs)	Progress to date; next steps if applicable
Energy					
EN-01	Expand energy management activities on campus.				
a)	Develop an energy management program for all ancillary facilities . Target: Save 15% of housing and athletics energy consumption by 2020	Campus Sustainability	SHHS, Athletics	Start in year 2 (2011)	In progress. A full-time community energy manager hired in 2011 will assist each of the ancillary units in creating Energy Management Plans.
b)	Implement full campus-wide energy monitoring, reporting and benchmarking .	Campus Sustainability	Building Operations	Start in year 1 (ongoing)	Ongoing. A pilot monitoring, targeting and reporting system was implemented in 2011. Energy reports will be distributed to departments as their buildings move through the continuous commissioning program.
c)	Participate in the Canada Green Building Council's (CaGBC) Green Building Performance Initiative to benchmark with peers	Campus Sustainability		< 3 yrs	Being evaluated. Initial discussions with CaGBC began in 2011.
EN-02	Maintain optimal performance of existing systems.				
a)	Implement a continuous commissioning program for core academic buildings Target: 10% reduction in energy use in existing core buildings by 2015.	Building Operations	BC Hydro funding.	Program development to begin in 2010	Ongoing. UBC has an agreement with BC Hydro for a three-phase program. Retro-commissioning of 2 pilot buildings, Buchanan Tower and Neville Scarfe, was completed in 2011 and operators began quarterly coaching sessions. Audits and analysis of 17 laboratory buildings in Phase 1 were completed, with implementation to start in January 2012. The 21 Phase 2 buildings will be investigated in 2012.
b)	Expand condition assessment activities and preventative maintenance to support energy efficiency in existing buildings.	Building Operations		< 3 yrs	Under development. A system is in place for ongoing condition assessment. A preventative maintenance program is being planned by Building Operations.
c)	Ensure O&M staff receive adequate training (and certification) to allow them to operationalize the CAP and fulfill their mandates	Building Operations		Start in year 1	Ongoing. Operations Centre staff are participating in training through the Continuous Optimization program and the implementation of the monitoring, targeting and reporting system.
d)	Invest in the Sustainability Coordinators program (currently includes 140 volunteers) to increase participation in energy and GHG management efforts.	Campus Sustainability		Start in year 1	Ongoing. SC program includes over 150 volunteers, with a focus on energy each fall. New SCs will receive specific training on climate and energy in 2012. A new campus sustainability engagement and organizational change strategy will be completed in 2012/12.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
e)	Optimize steam plant efficiency through setting annual plant commissioning and optimization targets. Target: 1% annual saving in natural gas consumption	Building Operations			In progress. Replaced Fortis main gas compound meter which reduced monthly billing discrepancies between the main meter and individual boiler meters from 6% to 2% (an acceptable discrepancy due to the different types of meters installed in past years). Continuation of the safety relief valve replacement/re-calibration project and steam trap preventive maintenance program for additional on-going savings.
EN-03	Develop incentive systems for building operators and users to reduce energy and water consumption.				
a)	Review utility rates, rate structure and departmental budgeting strategy to provide correct market signal to encourage conservation. This would include core, ancillary, and tenant buildings.	Building Operations / Campus Sustainability; Treasury	Budget Office	Start in year 1	Under consideration.
b)	Create building-by-building user groups to link Building Operations with faculty, staff and students (building users).	Building Operations		Start in year 1	Under development. May be an outcome of the engagement strategy in Action EN-06 (b)
c)	Review space planning requirements and develop financial incentives to encourage departments to operate within the BC University Space Standards.	Infrastructure Development	Building Operations	< 3 yrs	Ongoing. UBC charges departments for net space increases.
d)	Expand the pilot test of a real time energy management dashboard to visualize and track building energy use. Include a broader range of user groups.	Building Operations, Campus Sustainability		Ongoing	Ongoing. Over 60 buildings are connected to Pulse's energy management software in conjunction with the Building Tune-Up continuous commissioning program. A communication strategy was developed to engage users with this energy dashboard, to be launched in the Phase 1 buildings in 2012.
EN-04	Control peak demand				
a)	Develop and implement a peak demand management strategy Target: 10% reduction in Peak Demand	Building Operations / Campus Sustainability		2011 (once monitoring systems are more reliable)	Under development. A pilot study of five buildings was completed in 2011 and showed that demand management on campus is technically feasible. The business case is being evaluated.
b)	Support a UBC Green IT strategy for consolidation of IT Data Centres (server rooms, etc.) to achieve economies of scale in terms of resource efficiency	IT (Finance) / Campus Sustainability		< 2 yrs	In progress. Servers will be consolidated in the new University Data Center, located in the new Pharmacy building, which is under construction and scheduled to open September 2012.
EN-05	Prepare for the transition to a renewable energy system on campus.				

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
a)	Develop an energy supply transition strategy based primarily on implementing the recommendations of the Alternative Energy Study Project (i.e. to prepare for the transition from a steam heating to a heating water distribution system).	Building Operations, Campus & Community Planning	Infrastructure Development, SHHS, Athletics, Properties Trust	< 3yrs	Complete. Conversion of the steam system to hot water began in 2011 with Phase 1 connected to 15 buildings. Phases 2 and 3 on track for 2012.
b)	Conduct thermal enclosure upgrades during all envelope remediations.	Building Ops, Infrastructure Development		Start in year 1	On hold.
c)	Conduct reliability risk assessments for new energy technology proposals .	Building Operations		< 3 yrs	Ongoing. The risk assessment of the Bio-energy Research and Development Facility was completed and construction began. The Thermenex system for the Earth Science Building was evaluated.
EN-06	Support the campus community in energy management activities.				
a)	Promote an Energy Management Office (within Campus Sustainability) that all departments (including Ancillaries) can access for energy-related questions and advice.	Campus Sustainability	Building Operations, SHHS, Athletics	< 3 yrs	In progress. Currently three staff in Campus Sustainability provide energy-related advice. A new community energy manager was hired in 2011 to address ancillaries and community members.
b)	Develop a campus community engagement strategy to build awareness and encourage energy conserving behaviours.	Campus Sustainability		Start in year 1	In progress. Will be completed in 2012/13.
c)	Strengthen the relationship between the academy (teaching, research, and learning) and operations by establishing joint research / operational programs and projects aimed at providing tangible examples of energy efficiency/conservation, GHG emissions reduction and climate action.			< 3 yrs	Complete / Ongoing. The UBC Sustainability Initiative (USI) unites sustainability efforts in teaching and learning, research and partnerships, and campus operations. Several “Campus as a Living Laboratory” projects are underway: • Bioenergy Research and Demonstration Facility • Centre for Interactive Research on Sustainability • Smart Energy Systems Research Project In addition to supporting these large-scale, signature living lab projects, UBC is also involved in smaller-scale research projects that test new technologies in real-time on the UBC campus. Examples of such projects include: • MicroLED Lighting System • Core Sunlighting System • Wireless Charging
EN-07	Reduce energy consumption from laboratory and research activities.				

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
a)	Develop a “Green” or “Low Carbon” Laboratories initiative.	Campus Sustainability	Building Operations, Risk Management	< 3 yrs	In progress. Based on a pre-feasibility study conducted in 2011, which identified strategies that could be implemented with simple payback of 5 years or less, pilot projects were developed for implementation in 2012. Analysis of these pilots will inform a campus-wide retrofit program. The Shut the Sash behaviour change campaign was initiated in 2011 leading up to a competition for fume hood users in three buildings in early 2012.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
		Department(s)	Internal and External	Milestones or specific stage of the plan (>3yrs, 3-5yrs, >5yrs)	Progress to date; next steps if applicable
Fleets and Fuel Use					
FF-01	Complete E3 Silver Certification of the operational fleet. In order to do this, UBC will need to obtain between 67 and 78 points in the E3 system. These points are obtained by implementing various actions in the following areas: - Green Fleet Action Plan - Training and Awareness - Idling Reduction - Vehicle Purchasing - Fuel Data Management - Operations and Maintenance - Trip and Route Planning - Utilization Management - Fuel Efficiency - GHG Reductions	Building Operations		Fall 2010	Not yet started. While E3 Certification is not yet being pursued, Building Operations has started the following actions: - Training and Awareness – conducted as required by each shop. - Idling Reduction – has been communicated to all Building Operations staff who operate vehicles. - Vehicle Purchasing – new procedures will be in place in 2012. - Fuel Data Management – in place since 2009. - Operations and Maintenance – conducted by the Building Operations Garage. - Fuel Efficiency – In 2011 a needs analysis was completed and identified the least efficient vehicles. A plan is being developed to replace vehicles with more fuel efficient models.
FF-02	Continue to integrate electric or ultra low consumption vehicles into the ‘on campus’ fleet and increase the profile of these vehicles through signage and display to create awareness of UBC activities. Target: 20% of on campus fleet to be electric or ultra low consumption by 2015	Building Operations		Within 5 years	Ongoing. No change in 2011. Total of 20 electric or hybrid vehicles in all departments, or 5% of fleet.
FF-03	Review legal requirements and explore opportunities for allowing low speed electric vehicles to be registered for use on campus (e.g., "ZENN" cars and others). This may require a bylaw in concert with the City of Vancouver.	Building Operations	Metro Vancouver	Start in year 1	Complete. Building Operations currently uses low speed electric vehicles that are registered for use on campus. Requirement to travel off-campus to be re-evaluated.
FF-04	Provide right sizing advisory service and enact policy which requires departments to evaluate the size and efficiency of their vehicle prior to purchase.	Building Operations	All depts		Under development. In 2011 a study was completed within Building Operations to identify appropriate makes and models for trades use. Expansion to other departments not yet started.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
FF-05	Implement a tracking system for campus vehicles not currently serviced at the Land and Building Services facility.	Campus Sustainability	All Depts	Implement by December 2009 (data required under Bill 44)	Ongoing. Odometer readings were collected from individual vehicle owners/administrators to estimate fuel consumption for 2011 GHG reporting to the province. Achieved 71% response rate and developed method to estimate the remainder. Further improvements may be pursued.
FF-06	Establish a departmental monitoring system to ensure cost recovery on department vehicles used by projects and researchers (e.g., require odometer readings, fuel meter readings, etc).	Building Operations	All Depts	Start in year 1	Under development. The readings described above are not yet being communicated back to departments. Building Operations tracks odometer readings and fuel use.
FF-07	Promote the costs and benefits of centralized vehicle services (established in the UBC Building Operations Fleet Management Business Plan) to UBC departments.	Building Operations	All Depts	Start in year 1	In progress. Began the process by issuing a Request for Expression of Interest for Fleet Management Services for the Building Operations fleet. Possibility of offering this service to other departments will be considered.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
		Department(s)	Internal and External	Milestones or specific stage of the plan (>3yrs, 3-5yrs, >5yrs)	Progress to date; next steps if applicable
Transportation (Commuting)					
TR-01	Explore the feasibility of implementing a combined discounted transit-parking pass program for staff and faculty (make bus pass a priority component of salary/compensation increase)	Transportation Planning, Parking	TransLink	> 5 years	Longer term goal.
TR-02	Evaluate opportunities to grant employee benefits or create incentives for dedicated non-GHG commuters (as part of Healthy Workplace Plan)	Central HR		3-5 years	Longer term goal.
TR-03	Improve ‘end of trip’ biking facilities in technical standards (tie level of facility to occupancy, provide safe and secure bike parking, showers, etc)	Transportation Planning		< 3 years	Complete. Standards were re-written and incorporated into Vancouver Campus Plan Design Guidelines in 2010. Transportation Planning sits on the Development Review Committee to ensure new development and major renovations include end of trip facilities. Ongoing review and update of plans will continue to improve the standards for facilities.
TR-04	Develop preferential parking strategy targeted at faculty and staff (ideally revenue neutral, focused on preferred location rather than lower rates/fees, target carpoolers, low emissions vehicles, low SOV users, scooters, small cars, etc)	Parking, Transportation Planning to cross-promote		< 3 years	Under development. In 2011, 14 parking spaces were converted to 170 secure and covered bicycle parking spots in 2 of UBC’s 6 parkades. On-street parking spaces are being re-allocated for car-share vehicles. Note that parking permits are multi-use so they can be shared by carpoolers who change vehicles. Investigating street parking options for motorcycles.
TR-05	Study the feasibility of implementing a U-Pass “tax” for UBC Residents (i.e. charge new market residential development for 1 U-Pass per household, at the point of purchase)	Transportation Planning, UNA, Budget Office Planning	TransLink, UNA	> 5 years	Re-evaluate. Longer term goal.
TR-06	Partner with the Vancouver Area Cycling Coalition (VACC) to improve cycling skills and awareness	Transportation Planning	VACC	< 3 years	Complete. Ongoing VACC Cycling skills courses held at UBC to align with Bike to Work Week in Spring and Fall.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
TR-07	Per Pictoform study being conducted by Parking Services, a) build way-finding to enhance accessibility to pedestrians, cyclists, transit users, etc b) build congestion reporting system to mitigate traffic congestion (and emissions) on campus	Parking, Campus and Community Planning, Transportation Planning, Pictoform (consultant)	City of Vancouver (try to harmonize with regional way finding system)	3 - 5 years	In Progress. a) A wayfinding strategy is underway by Campus and Community Planning to assist visitor movements arriving by car, bus and bicycle, and improve the pedestrian experience on campus. In 2011 signage was installed in all parkades to guide people after leaving their vehicles. Advised the Vehicle Access Plan steering committee on repurposing, where appropriate, general parking spaces in the pedestrian core (Walking Campus) to meet the current need for accessibility, service vehicles and loading zones. The introduction of the Walking Campus will significantly reduce the number of unauthorized vehicles circulating through the core of campus. b) Studies were conducted to enhance vehicular wayfinding on campus, both for visitors to reach parkades and for service/emergency vehicles to navigate service lanes. Consultants' reports are being reviewed.
TR-08	Building on the 'telecommuting guideline', consider developing an employee transit policy to assist staff in reducing GHG emissions associated with commuting (e.g., encourage flexible work hours for staff through staggered start times, compressed work weeks, telecommuting, etc)	HR		< 3 years	Longer term goal.
TR-09	Evaluate the feasibility of implementing a cap on vehicle parking on campus.	Parking, Transportation Planning to cross-promote		< 3 years	Complete. The Vancouver Campus Plan limits institutional surface parking on campus through Policy 22: "Surface parking lots will be discontinued over time, through their use as future building sites or for other interim uses such as recreational areas." The Parking section of the plan specifies: "For new academic capital projects, new surface parking lots for building occupants will no longer be permitted beyond that required for universal access and emergency, security and service needs." Four surface lots with approx. 350 spaces were removed as of 2010. In 2011, 4 lots were closed or reduced in size, removing 200 spaces.
TR-10	Explore opportunities to expand U-Pass to staff and faculty members	Transportation Planning, HR, Faculty Assn	TransLink	> 5 years	Longer term goal.
TR-11	Provide plug-in for electric assist vehicles , including: a) Bicycles	Parking, Utilities, Building Ops, Transportation Planning,		< 3 years	a) Ongoing. The North Parkade and Fraser River Parkade bike cages have power outlets for recharging electric bicycles. The new Chemistry/Physics bike facility and all other new bicycle facilities will also have outlets.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
	b) Motorized vehicles	Infrastructure Development			b) Under development. Two plug-in stations installed in Health Sciences Parkade for campus fleet vehicles. Investigating metered solutions for electric vehicle charging stations.
TR-12	Review policy around student resident parking permits and assess the feasibility of: A) eliminating parking passes for 1st year students living on campus; B) raising rates significantly to discourage the purchase of parking permits by students living on campus.	Parking, SHHS, Transportation Planning		< 3 years	Under development.
TR-13	Explore the feasibility of providing a U-Pass opt-in for students who are currently not eligible.	Transportation Planning, AMS, Enrollment Services	TransLink	TBD based on Translink negotiations	Longer term goal. The introduction of U-Pass BC in 2011 made more students eligible. In 2012 new AMS eligibility criteria will also increase the number of students who qualify for U-Pass. Possibility that Translink's new Compass card will allow more flexible delivery options in 2013.
TR-14	Evaluate opportunities to revise UBC's Employee Housing Program to include incentives for staff and faculty to find housing closer to campus , thereby encouraging shorter commutes (e.g., financial assistance weighted to give more to employees that choose to live closer to campus)	Treasury, SHHS, UBC, HR, UNA		< 5 years	Ongoing. A Housing Action Plan is under development to provide more choice and affordability for faculty and staff housing on campus. The Draft Discussion Paper will be out for consultation in March 2012. Revisions will be made depending on feedback and Board direction, with final Housing Action Plan targeted for summer 2012.
TR-15	Promote various commuting options for staff, faculty and students (i.e., EPP, Flex, ICBC, etc)	Transportation Planning, HR		3 - 5 years	Complete. Ongoing promotion at events such as Imagine UBC student orientation and new faculty/staff orientation, via Sustainability Coordinators, on website and through other outreach initiatives as opportunities arise.
TR-16	Develop Bike Buddy program to encourage bike pooling (advertise on carpool notice board)	Transportation Planning	VACC	< 3 years	Re-evaluate. Not in Transportation Planning's scope. Could be initiated by another campus group.
TR-17	Consider setting limits on the transferability of parking passes to discourage driving on campus (phase this in the next time parking fees get restructured)	Parking		> 5 years	Removed. This may actually discourage car pooling – encourage flexibility instead.
TR-18	Improve on-campus bike sharing program (make available to conference guests)	Transportation Planning, AMS		TBD	Under development. City of Vancouver issued an RFEI for a public bike-share system that included UBC and Translink as partners. Proposals were evaluated.
TR-19	Evaluate opportunities to promote a culture of cycling with guided on-campus bike tours	Campus Sustainability		< 3 years	Complete. Ongoing bike tours are provided as part of outreach initiatives, as opportunities arise. 2011 tours included a cycling "Jane's Walk" and a campus tour for the Association for Commuter Transportation of Canada (ACTA). Tours are being planned for the Velo-city Global 2012 conference.

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TR-20	Ensure the Campus Plan aligns with the CAP in terms of land use and the need for infrastructure that encourages alternative transportation (e.g., compact, mixed-use, walkable communities with more amenities on campus).	Campus Sustainability		Start in year 1	Complete. Vancouver Campus Plan completed in 2010.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
		Department(s)	Internal and External	Milestones or specific stage of the plan (>3yrs, 3-5yrs, >5yrs)	Progress to date; next steps if applicable
Business Travel and Procurement					
BTP-01	Update UBC Policy 83 (Travel and Related Expenses) to articulate UBC's commitment to reducing emissions associated with operational business travel .	Supply Mgmt (Travel Mgmt),	All Depts	Start in year 1	In progress. Committee was struck to review policy and guidelines, specifically addressing green hotels, hybrid cards and preferred vendors. Updated procedures will be piloted in 2012 for eventual campus roll-out.
BTP-02	Convene a Task Team to refine and implement a user-friendly measurement and reporting system to support flight reduction by all UBC departments.	IT	Supply Mgmt (Travel Mgmt), Finance, Campus Sustainability, Department representatives	Start in year 1; Target 2012 for system roll out	Under development. Set up quarterly reports from both travel agencies to report flight mileage but does not break down by department. Reviewed government SMARTTEC system for tracking business travel emissions. In 2012 when new paperless travel and expense software is developed, emissions reporting will be considered. The Concur online booking system shows carbon emissions associated with flights.
BTP-03	Anticipating a future need to offset emissions associated with research travel , begin a dialogue between the Office of the VP of Research and the research granting agencies on the capacity to absorb the costs of carbon offsets for travel into research grants and use the offset fees to contribute to a reduction fund on campus.	Office of the VP of Research	Research Granting Agencies (NSERC, etc)	< 3 yrs	Under development.
BTP-04	Fund and promote use of video conferencing facilities. Using Classroom Services as a model, investigate the potential of having a centralized booking system for video-conferencing facilities.	IT		Start in year 1	Under development. Planning to pilot between several departments and UBC Okanagan.
BTP-05	Study the potential to create an off campus central depot for shipments in order to reduce the number of shipments coming to campus on a daily basis.	Supply Management	All Depts, vendors	Start in year 1	Remove. Instead, focus on consolidating and decreasing the number of trips to campus by working with vendors (see BTP-06).

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
4BT P-06	Use the Acklands-Grainger arrangement as a model to consolidate deliveries for suppliers, shippers and couriers in an effort to reduce the number of trips to-from and around campus. Target: Make arrangements with a minimum of 10 suppliers by 2012	Supply Management		Start in year 1	In progress. The Sustainability Scorecard, which includes a section on deliveries, was launched with 15 vendors. To date 10 vendors are providing annual reports, which will become a quarterly requirement. Continued discussion about trips to campus with these vendors. The scorecard is also part of new RFPs. Specifically highlighted consolidation of deliveries in the new RFP for scientific supplies. Examples of work with specific vendors: - Ongoing communication with SSAC committee and Fisher about reducing deliveries (e.g. delivering every other day, waiting until all products are ready to ship, order consolidation for orders under \$100). - Iron Mountain has consolidated all accounts into one UBC master account to reduce duplicate trips.
BTP-07	Study workflow to identify opportunities to eliminate paper from operations and to assess the feasibility of various electronic / paperless systems and integration of digital technology and print management (e.g., handheld scanners, laser fiche, online viewers, electronic ordering, electronic submission of proposals, alternative practice to original signatures on approvals, etc)	Supply Management	All Depts	< 3 yrs	Under development. Supply Management is looking at level 3 data for P-Card as opposed to paper invoicing and working with vendors who provide level 3 data to also eliminate paper invoicing/receipts. New Travel & Expense procedures will reduce paper across campus by reducing or eliminating QReqs, TRs, HReqs and Smartforms. Bookstore is implementing electronic data interchange (EDI) ordering processes with vendors to go paperless in ordering, invoicing and payment processes.
BTP-08	Implement the Document Management Strategy and set target to achieve paperless operations to support UBC in a transition from a paper based to digital model	Supply Management	All Depts	Already underway (set target once strategy is complete)	Under development. Researching other companies that are paperless.
BTP-09	Eliminate the use of virgin paper immediately. Communicate and encourage uptake of the current 30% post-consumer recycled content standard for paper purchasing on campus. Target: 80% of all paper purchases to contain recycled content by 2012	Supply Management	All Depts	< 3 yrs	Complete. In 2011, 98% of purchases through official supplier Unisource contained 30% post-consumer recycled content or better. When direct purchases through Grand & Toy and Staples are included, 85% of total university paper purchases contain 30% post-consumer recycled content or better. Next steps: Work with other vendors on reducing virgin paper sales and educate P-Card users to buy from official vendor – outreach will be part of UBCBuySmart in 2012/13.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
BTP-10	Replace packaged/carded stock with bulk items (e.g. pens) in Bookstore	Bookstore		< 3 yrs	Ongoing. Bookstore has reduced packaging on carded items and continues to address this.
BTP-11	Require all suppliers to use reusable or recyclable packaging or to uncrate and take back packaging that is non-reusable or recyclable. Target: Arrangements with 50% of suppliers by 2015	Supply Management	Suppliers and all Depts	3-5 yrs	In progress. Sustainability Scorecard pilot was completed with 10 contracted vendors who report annually (moving to quarterly) on actions including packaging reduction. The Scorecard will be included in Purchase Order Terms & Conditions and is included in all RFPs as well. Examples of work with specific vendors: - Invited scientific vendors (over 100) to participate in UBC's styrofoam reduction and recycling pilot (which now has 9 buildings on board and has diverted over 44,000 L of styrofoam to date) - Encouraged same group to cease sending paper catalogues unless specifically requested by the end-user. - Fisher has proposed a tote program. - XGS currently removes all packaging when they deliver products.
BTP-12	Conduct a campus-wide waste audit and use the results to set waste reduction targets.	Campus Sustainability		< 1 yr	In progress. Waste Audit complete. Waste action targets to be launched in 2012.
BTP-13	Work with UBC researchers to conduct lifecycle analyses on common purchases in an effort to define the embodied energy within the supply chain and show buyers at UBC the life cycle costs of their choices (e.g., LCA of laser vs. inkjet printers). Communicate these findings to the UBC Community. Target: Complete LCA studies for 5 common purchases by the Fall of 2010	Supply Management	Faculty/ students	< 1 yr	Ongoing. Scoped two SEEDS projects that will be complete in April 2012: - Life-cycle analysis of styrofoam use and recycling - Triple-bottom-line assessment of 'social wheat paper'
BTP-14	Conduct outreach to ensure that all people making purchasing decisions on campus are aware of Supply Management resources to encourage sustainable purchasing (e.g., list of preferred vendors, Supplier Code of Conduct, Sustainable Purchasing Guide, template RFPs, etc.)	Supply Management	Working Group members + Campus Sustainability (outreach)	Start in year 1	In progress. - Sustainable Purchasing Guide (3rd edition) being updated for spring 2012 will include new topics such as computers and moving, to encourage a wider range of sustainable behaviours. - Supply Management presents at bi-monthly orientations for new employees to encourage sustainable purchasing. - UBCBuySmart will also be a communication vehicle for UBC to make better purchasing choices.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
					Bookstore has a vendor code of conduct for clothing to ensure manufacturers are 'no sweat'.
BTP-15	Create a policy for 3-way sharing of savings (between the buying department, Finance and the Campus Sustainability) from smart purchasing decisions. Give a portion of the savings to a UBC 'sustainability fund' to support ongoing initiatives.	Supply Management, Finance, Campus Sustainability	All Depts	< 3 yrs	In progress. In 2011 UBC signed onto the Billion Dollar Green Challenge, which encourages universities to invest a combined total of one billion dollars in self-managed revolving funds that finance energy efficiency improvements. The green revolving fund will lend money to specific projects, which then repay the loan through an internal account transfer from savings in the utilities budget, to reinvest in future projects.
BTP-16	Explore opportunities for cost-sharing across campus that allows researchers and departments to share the cost and resources (e.g., furniture, lab equipment, etc)	Provost	All Depts, Campus Sustainability, Supply Management, Budget Office	< 3 yrs	Re-evaluate.
BTP-17	Evaluate opportunities for centralizing purchasing decisions in order to achieve multiple benefits (i.e., sustainability leverage, efficiency, meeting user needs)	Supply Management	All Depts, Campus Sustainability	Start in year 1	Under development. A Category Management pipeline was created to explore opportunities for vendor rationalization, sustainability and cost savings in all categories over the next 3 years, and ensure consistency in RFP standards for evaluation. UBCBuySmart will communicate and enable. - Vehicles – a Fleet Management Services RFEOI was issued - Computing – Information Technology Procurement Advisory Committee (ITPAC) was formed; initial meeting brought together IT Services, MedIT and UBCO - Furniture - assembling task force to promote and maintain reuse-it! UBC program - Maintenance, Repair and Overhaul (MRO) – Enablement of contract with Weber - Scientific – RFP for supplies underway - Travel – RFI for green hotels - Other – Logistics (courier rationalization); Iron Mountain contract as above.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
BTP-18	Expand list of preferred vendors to include green hotels, car rental agencies that provide low emissions vehicles, etc. Add current green suppliers to preferred vendor list by fall 2009.	Supply Management	Suppliers + Supply Management	Start immediately	Under development. These will be part of UBCBuySmart launching in 2012/13. Travel Management to promote/advise online. RFI for green hotels is under way.
BTP-19	Continue the commitment to promote/ advertise sustainable or low emissions product options at retail outlets on campus	Supply Management	Retail outlets on campus (see also Food actions)	Start in year 1	Under development. The Bookstore marketed a new text rental program, which increased from a few hundred rentals to 6000 in September 2011 – this saves paper as well as money for students. The Bookstore marketed e-books and increased options by partnering with Google e-books. Online partner Staples Advantage offers eco-friendly items on the Bookstore website. Increased sustainable marketing and signage is under review.
BTP-20	Investigate options for asset disposal. Consider online equipment inventory system and SERF (Surplus Equipment Recycling Facility) in this investigation	Campus Sustainability	Finance, Supply Management	Start in year 1 (January 2010)	In progress. reuse-it! UBC launched January 2011, a one-year pilot starting with department to department transfers of furniture, office supplies and electronic equipment. A total of 1,100 items were transferred instead of going to landfill. A task force is being formed to embed the program on campus and update Policy 108.
BTP-21	Implement industry standards for energy efficient products (i.e., EPEAT for electronics, Energy Star, etc). This would include energy efficient research equipment where applicable. Target: 50% of all equipment purchases to meet this requirement by 2010; 100% by 2015	Supply Management	All depts.	Start in year 1	Under development. Discussion between Supply Management, IT& Bookstore.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status update – 2011 calendar year
		Department(s)	Internal and External	(>3yrs, 3-5yrs, >5yrs)	Progress to date; next steps if applicable
Food					
FO-01	Integrate the UBC Food Systems Project with the Climate Action Plan. Use the CAP as a vehicle for advancing FSP recommendations, some of which are highlighted in this plan.	Food System Project (FSP) stakeholders and Campus Sustainability		Start in year 1	Complete. LFS 450 classes in Jan-Apr. each year address items in the CAP. In 2011 these scenarios were developed and projects are underway in 2012: - Baseline Inventory of the UBC Food System: - Healthy food assessment and action plan - GHG emissions and action plan - Socially and ecologically responsible food options and action plan - Aboriginal & ethnic foods on campus - Public opinion to inform food system targets - Campus greenscaping: managing the first rooftop garden at UBC-Vancouver - UBC Farm pilot food processing center - UBC Campus Food Guide –a UBC Farm communication tool
FO-02	Using a Lifecycle Analysis (LCA) approach, establish a baseline inventory for the UBC food system. Use the inventory results to set targets and develop actions to reduce emissions, eliminate waste, and increase the sustainability of the food system. Target: Establish baseline inventory by Fall 2010	FSP stakeholders and Campus Sustainability		< 1 year	Under development. In 2011, LCA of sugars were studied by LFS 450 (only one of four projects was selected due to limited class size). Fair Trade sugar packets were recommended and are being investigated by SHHS. In 2011 UBCFS rolled out liquid sugar pump bottles to reduce waste from sugar packets and improve quality of sugar available – currently offering cane sugar and pure agave pumps at most outlets. Possible project for students in 2012 will be baseline data on the sugar pump roll-out (waste reduction, sustainability assessment and customer feedback). Student projects in 2012 will complete GHG inventories for dairy and protein alternatives, meats/fish, and processed vegetables and will conduct a baseline survey to define targets for food system sustainability (see FO-01). Specific products selected for the inventories will be based on the highest volume items purchased by UBCFS. There is also a possibility of student projects to conduct baseline measurements at The Loop and other food outlets in 2012.
FO-03	Engage UBC food providers (i.e., Food Services, AMS, UBC Farm, food retail outlets, etc) in building a network with local producers to increase sourcing of local food.	SHHS, AMSFBD, UBC Farm, food retail outlets	Get Local BC or other established network	< 3 yrs	Ongoing. SHHS are working on building relationships directly with farmers. In 2012 SHHS will be researching the availability of locally-sourced ingredients year-round to make signature UBC products like pizza sauces, french fries and coleslaws Sprouts sources all produce locally and in 2012 will look into direct sourcing from farmers.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status update – 2011 calendar year
FO-04*	Develop a sustainable food purchasing policy to articulate "when price and quality are comparable, UBC will purchase from the most local source." Reinforce this policy through the bid process by weighting evaluation criteria to favour suppliers that support sustainable, low carbon agricultural practices. Finally, promote the policy and evaluation criteria amongst all UBC Food Services outlets and to contracted vendors.	SHHS, AMSFBD	Supply Management	< 3 yrs	Complete/In Progress. UBC Supply Management's Sustainable Purchasing policy applies to all procurement categories. SHHS bid process does target local, in season food and delivery mechanisms. (Sourcing for outlets is handled centrally). AMS seeks to align with UBC purchasing policy where possible. Highlights: • UBC was awarded the first Canadian FairTrade University status by TransFair Canada in January 2011. • SHHS seafood was 70% ocean wise in 2011 and targeting 100% in 2012. • All fresh poultry served in UBC Food Services units will be halal certified in 2012. • All AMS Food outlets will be enrolled in the Ocean Wise Sustainable Seafood program by 2012..
FO-05*	Increase food production at the UBC Farm . Use the farm to represent the types of food that can be grown, seasonally, in our climate.	UBC Farm	LFS, Campus Sustainability, SHHS, AMSFS	3-5 years	Ongoing. • Supply from UBC Farm to Vanier & Totem Residences has doubled; supply to The Loop and The Point is now year-round; food is now being supplied to Tapestry. UBC Farm has a new cooler for winter storage and has re-oriented its CSA box share to prioritize customer proximity to campus. Wednesday Campus Market sales of UBC Farm produce increased approximately 70% from 2010 to 2011. • Orchard Garden has expanded and has increased supply to Agora. • AMS now procures from UBC Farm for outlets. SHHS is looking at contract planting/buying from UBC Farm and expanding to more outlets. SHHS chefs continued dialogue with UBC Farm – for example provided wish list of items to purchase; the signature local items may include sourcing from the Farm. • 2nd 'Meet your Maker' event was held September 2011 at the SUB main concourse with more vendors and a focus on FairTrade. • AMS hosted a Farmade event.
FO-06	Advocate for more edible landscapes (i.e., gardens, rooftop gardens, etc) on campus through participation in the development of the Public Realm Plan, Technical Guidelines for new buildings and the new Design Guidelines.	LFS, AMS, SHHS	C&CP, SALA, Campus Sustainability	< 3 yrs	In progress. • A garden guide was developed for starting food gardens on campus within the UBC development process – currently posted on SEEDS Library. Working with C+CP to develop application form for garden sites. • A SEEDS project on the SUB rooftop garden was completed in 2011 and a new project is planned for 2012. • Approval was granted for a garden at the Geography building, along with funding from AMS Sustainability fund. A LFS grad student is pursuing a garden at Green College. • An LFS 350 student project designed herb planter boxes for the patio at The Point Gill that will be installed in 2012 for herbs to be used in the restaurant. Other urban gardening SEEDS projects scheduled to launch in 2012-20123: Green College Garden Design project, New SUB Rooftop Garden Project – phase 3/4.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status update – 2011 calendar year
FO-07*	Provide incentives for consumers to purchase healthy, low carbon food: i) Gradually shift menus towards healthy, low carbon food options (e.g., offer "meat free" specials or "meat free" days on campus) ii) Evaluate opportunities to subsidize healthy food on campus with junk food (e.g., increase prices at vending machines and decrease costs of healthy food) iii) Offer targeted promotions through the UBC meal card iv) Promote ethical choices with the AMS "lov" card – local, organic or vegan v) Build a meal card program to promote sustainable, low carbon food options.	SHHS, AMSFBD	FSP/Working Group members, Food retail outlets on campus, Campus Sustainability	< 3 yrs (ongoing)	Under development. i) Green catering menu including low-carbon emphasis was developed and will be included in the 2012 Sustainable Purchasing Guide. The Loop in CIRS offers one meat free day per week – its impact will be tracked to determine whether this will be rolled out in other outlets. Residences offer vegan/vegetarian options for lunch and dinner. Blue Chip began offering vegan and gluten-free options, and SHHS started sourcing gluten-free baked goods. In 2012 a new vegan breakfast wrap will be offered. ii) AMS is reviewing pricing policy so that healthy or sustainable alternatives will no longer carry a premium. iii) Not yet started but there is interest iv) A new comprehensive labeling system with 9 categories was developed. The design was approved for rollout in 2012. v) Not yet started.
FO-08*	a) Develop a campus-wide social marketing program to promote i) sustainable, low carbon food choices, as well as ii) recycling and composting at UBC. b) As part of this, evaluate the potential for a food labeling system on campus.	SHHS, AMSFBD	FRE, FNH (LFS), Waste Free UBC	<3 yrs	Under development. a) i) Commerce marketing students' SEEDS project developed a Fair Trade marketing plan, based on campus-wide customer analytics from a survey. The result was a recommendation to launch the first UBC Fair Trade Week in 2012 along with social marketing tactics and materials including posters. Future SEEDS projects in 2012 to evaluate how Fair Trade Week affected knowledge and to create events for the week (scavenger hunt, etc.) Marketing interns at UBC Farm used social media to promote farm products in summer 2011. UBC Farm also finalized development of a carbon-smart food guide and began distribution. A sustainability scavenger hunt "app" was developed in 2011, to be launched for SUST101 in 2012. Sprouts used social media more effectively in 2011 by providing more frequent updates and attracting more followers on Facebook and Twitter. In 2012 a LFS 450 project will develop a Campus Food Guide to promote greater awareness of sustainable food options on campus and participation in sustainable food system. ii) This will be an outcome of the Waste Action Plan in 2012. (Continue to hear that compost bins are not available in common spaces across campus). The SUB piloted compost bins in 2011. b) Labelling was developed for The Loop Café which served as a pilot for upcoming campus rollout. SHHS is considering hiring a summer student in 2012 to assist in the label project Digital signage is starting to be used to promote sustainable food events like Fair Trade Week

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status update – 2011 calendar year
FO-09*	Building on existing models, develop curriculum for an interactive 100-level sustainability course to engage students in learning about sustainable food systems. Through this course, provide opportunities for students to make the links between a healthy diet and a healthy planet through: i) practical studies on the UBC Farm ii) lectures from sustainable food champions	Land and Foods Systems (build on efforts by existing grad students)	UBC Farm, outside experts/lecturers	Start in year 1	Complete. i) SUST 101 will begin in January 2012, an entry-level course for students in various faculties. The Sowing Seeds Practicum at UBC Farm is moving toward accreditation (draft to senate curriculum committee 2012). The 3-course module includes a foundation course followed by a practicum then a final course.
					ii) Ongoing. Partnerships between Land and Food Systems faculty and Food Service staff for programs and education are ongoing. Food Services chefs and sustainable champions present to LFS students each April. In addition: • Food Services and UBC Farm champions present at the <u>Summer Institute in Sustainability</u> offered by UBC Continuing Studies. • 'Chew on This!' series of lectures and collaborative events offering varied perspectives on sustainable food and food security was hosted by CUS Sustainability, Oxfam UBC and Common Energy. • UBC Farm regularly presents dozens of lectures and tours to on- and off-campus audiences. Sprouts contributes to presentations and panels. LFS graduate student Mark Schutzbank lectures on urban food business models around city
FO-10*	Reduce packaging waste from the UBC food system: i) Develop a case study with an external supplier to demonstrate packaging waste reduction - and build from there. ii) Provide incentives for customers to supply their own containers at UBC and AMS Food Services outlets and encourage contracted vendors to do the same.	SHHS, AMSFBD	Supply Management	Start in year 1	Ongoing. i) Eliminated styrofoam soup and gravy containers SHHS. Buckets are distributed for re-use instead of disposal. Cardboard is recycled in back-of-house. SHHS expanded plastic recycling to include all soft plastics in back-of-house operations.
					Complete ii) SHHS and AMS offer 15¢ - 25¢ discount to customers who bring their own mug or container. An AMS Waste Reducing Vending Machine project in 2012 to sell non-disposable, sustainable products (such as re-usable chopsticks) may increase incentives offered at outlets. In 2011 the Eco-to-go container exchange program was expanded throughout residences and retail outlets. The program will expand to AMS outlets in the new SUB.
FO-11	a) Work collaboratively with Waste Free UBC to conduct a composting audit .	SHHS, AMSFBD	Waste Free UBC	< 3 yrs	a) Complete. Waste audit was completed in 2010.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status update – 2011 calendar year
	b) Use the results to set goals for food waste reduction on campus.				b) Under development. The Waste Action Plan in 2012 will set targets. A SEEDS project is planned for 2012 to set pre-consumer waste goals for the new SUB (via commercial scale composter).
FO-12*	Conduct research on food waste recovery and nutrient reintroduction into the production system.	LFS, FSP	UBC Farm	3 - 5 years	In progress. UBC Farm now has a high-nitrogen source (from VanWhole) for their compost pile. Student projects are assessing compost composition. A worm bin project at the SUB analysed compost from the small-scale first phase and the commercial-scale (wigwam) second phase. Phase 3 of this project in 2012 will develop a composting operational guide and recommendations for expansion to a full-scale commercial composter in the new SUB. An undergraduate thesis project in 2012 on vermi-composting aims to maximize the worm bin system to full capacity and maximize the quality of compost to be used in the new SUB rooftop garden as well as identify other potential market uses.
FO-13	Undertake a Feasibility Assessment for an on-campus food processing facility	UBC Farm, LFS, AMSFBD	FSP (potential for students to contribute through project work)	< 3 yrs	In progress. A processing facility will be embedded at the new Farm Centre with some capacity to supply food to campus envisioned. The needs assessment is underway: - In 2011 a LFS 450 project examined campus food outlet interests and basic equipment. - In 2012 a LFS 450 group will conduct the next phase to refine the initial proposal, focusing on faculty teaching and research needs related to the new facility. Specifically this project will assess if academic courses and instructors would like to make use of the facilities and will assess feasibility of different products that could be produced in the facility. FNN offered a pilot food-processing course (e.g. cheese) that will use the new building. SEEDS projects in 2012 will assess a Brew Pub and a new kitchen co-op at the new SUB.
FO-14*	Conduct plant-based research to identify climate mitigation and adaptation opportunities for the food system	LFS (FNN and Wine Research Centre), Botany, Forestry		3-5 years (and then ongoing)	Under development. UBC Farm is starting research projects.
FO-15	Conduct research on carbon cycling and sequestration associated with food production	Ag Eng, LFS, Botany, Forestry	UBC Farm (directed studies)	3-5 years (and then ongoing)	In progress. A forest management plan was developed by students. A graduate student project assessed carbon and nitrogen budgets for small-grain crops. UBC Farm and LFS signed a MOU with Clean Seed Technology regarding no-till planter.

ID	Action	Responsible Portfolio(s)	Partnerships Required	Timeline	Status Update 2011 calendar year
		Department(s)	Internal and External	Milestones or specific stage of the plan (>3yrs, 3-5yrs, >5yrs)	Progress to date; next steps if applicable
Implementation					
IMP-01	Clearly define and communicate accountabilities and responsibilities for the CAP to all stakeholders involved in ongoing implementation.	VP FRO	Campus Sustainability	Start immediately	Ongoing. Communication of accountability and responsibility occurs in semi-annual planning and reporting meetings with stakeholder action teams.
IMP-02	Invest in the enhancement of information systems in order to ensure consistent and accurate data management . Explore whether PeopleSoft has a module that UBC could buy off the shelf to assist in tracking and monitoring performance.	Finance	All Depts	< 3years	Ongoing. To date, in-house quality management system for tracking emissions data and performance has been developed by Campus Sustainability staff.
IMP-03	Establish key performance indicators , related to achieving climate action goals and targets and other sustainability targets (e.g. from Inspirations and Aspirations), for Managing Directors and Directors (where applicable).	VP FRO	Campus Sustainability	Start in year 1	Under development. In 2012/13, a new sustainability strategy will be developed and will engage directors in defining KPIs.
IMP-04	Identify where activities may be running counter to CAP goals and work to create alignment so that UBC is not just engaging in activities that reduce emissions, but also refraining from activities that increase emissions.	Campus Sustainability	All Depts	Ongoing	Ongoing. Responsibility of all climate action team members.
IMP-05	Explore opportunities to formalize the management system outlined in this plan to ensure successful implementation of the CAP and of other climate-related plans at UBC.	Campus Sustainability	All Depts	Start in year 1	Under development.
IMP-06	Improve monitoring systems as per the requirements defined in CAP Technical Report #3	Campus Sustainability	All Depts	Start immediately	In progress. Methodologies have been improved each year for calculating emissions included in reporting to provincial government (Scope 1, 2 and paper).

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Actions Towards Carbon Neutrality							
The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the <i>Greenhouse Gas Reduction Targets Act</i> .							
Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Mobile Fuel Combustion (Fleet and other mobile equipment)							
Vehicle fuel efficiency							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	5	% of vehicles are fuel- efficient models	Study was conducted to identify the least fuel-efficient units and flagged them for replacement.	Continue to purchase hybrid and electric vehicles when appropriate.	2009	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress			Completed assessment of Building Operations fleet and identified appropriate models. For example, 4-cylinder vans will replace 6- or 8- cylinder vans for several trades groups.	Consider a streamlined procurement model that will include right-sizing service.	2009	No End Date (Continuous)
Perform regular fleet maintenance specifically to improve fuel-efficiency	Ongoing/In Progress	69	% of vehicles are subject to regular maintenance for fuel efficiency	On-campus fleet vehicles are brought to onsite maintenance garage every 6 months.	Consider extending service to other departments' vehicles.	2009	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress	100	% of small maintenance vehicles are fuel-efficient	All small maintenance vehicles are diesel or electric.	Continue to acquire fuel efficient or electric small maintenance vehicles only.	2009	No End Date (Continuous)
Behaviour change program							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	100	% of current drivers are trained	Continued to provide driver training to reduce fuel use.	Refresher course will be taken by all drivers of Building Operations vehicles.	2009	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress			Continued reminders of anti-idling guidelines via email and safety training.	Continued enforcement of 2007 anti-idling guidelines. Consider extending policy to contractor/supplier vehicles visiting campus.	2007	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			Tradespeople travel to work sites on campus in shared vehicles. In addition, 8 ride share vehicles for commuting to work are also used during the work day.	Continued practice of carpooling on site.	2009	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Bike-share program available to staff in Building Operations group. Set up distributed offices to make it easier for tradespeople to travel by foot or bike to buildings in their zone.	Ongoing bike share program for staff. Install vending machines for parts in several buildings so that tradespeople do not have to drive to central stores.	2009	No End Date (Continuous)
Other Mobile Fuel Combustion Actions							
Use alternative fuels	Ongoing/In Progress	100	% of diesel vehicles in campus fleet use B5 biodiesel	B5 biodiesel was dispensed at on-campus fuel station.	Continue to dispense biodiesel at on-campus fuel station.	2006	No End Date (Continuous)
Purchase electric vehicles	Ongoing/In Progress	20	fleet vehicles are electric	None.	Continue to purchase electric vehicles when appropriate.	2009	No End Date (Continuous)
Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)							
Planning/management							
Enrol in a building energy benchmarking program (e.g., GREEN UP)	Ongoing/In Progress			Began dialogue with CaGBC.	Re-evaluate offerings.	2010	2012

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Reduce office space (square meters) per employee	Ongoing/In Progress	24.2	is the current average rentable square meters per employee	Space is allocated at or below the BCUSS allocation based on total FTEs, as space is requested and new buildings or renovations are programmed. Office space per employee for administrative staff was reduced 5% from 2010 to 2011.	Continued allocation within BCUSS guidelines and intensification of space use.	2005	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	55	% of buildings have a real time metering system installed	64 buildings are connected to the Pulse EMIS. Real-time data for a further 23 buildings is available via ION.	All newly constructed buildings will be connected.	2006	2013
Owned buildings							
Establish energy performance baseline for owned buildings	Ongoing/In Progress	30	% of owned buildings have an established energy performance baseline	Energy performance baselines were developed for 21 more buildings as part of the Continuous Optimization program. A Monitoring, Targeting and Reporting system is being implemented.	Weather-adjusted energy performance baselines will be developed for all additional buildings connected to the Pulse EMIS.	1998	No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Ongoing/In Progress	2	% of owned buildings have operations and maintenance labelling/certification	On hold until results of Continuous Optimization can inform this action.	Review the BOMA pilot when Continuous Optimization implementation is complete, to determine whether it would be advantageous to pursue certification on more buildings as part of Continuous Optimization program.	2009	2013
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	4	% of owned buildings are certified LEED NC Gold or LEED NC Platinum	Construction was completed on 4 projects awaiting LEED certification: Centre for Interactive Research on Sustainability (CIRS) (registered for LEED Platinum and the Living Building Challenge); the Allard Hall (new Faculty of Law Building); Biological Sciences Renew; and new Tennis Centre. Registered 3 new projects in the LEED system (Engineering Student Centre, Ponderosa Commons, Djavad Mowafaghian Centre for Brain Health).	All new construction and major renovations will achieve a minimum of LEED Gold. Eight additional projects will reach completion between 2012 and 2014: the 3 aforementioned that were registered in 2011 plus the Bioenergy Research and Demonstration Facility; Earth Sciences Building; Pharmaceutical Sciences/Centre for Drug Research and Development; Alumni Centre; new Student Union Building (targeting LEED Platinum and the Living Building Challenge). Awaiting certification on 2 completed projects, Buchanan Renew and Chemistry Renew.	2002	No End Date (Continuous)
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	100	% of buildings built or renovated since start year indicated used the integrated design process	An Integrated Design Process is employed on all major construction and renovation projects.	Continue to use IDP on all major projects.	2001	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	56	% of owned buildings have undergone energy retrofits since start year indicated	Retrocommissioning completed for Buchanan Tower and Neville Scarfe complex of buildings. Renew of Biosciences West & South completed.	Retrocommissioning will be conducted on 70 more buildings as part of Continuous Optimization. Renew of other buildings.	2003	No End Date (Continuous)
Retrofitting owned buildings							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	100	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	UBC Renew revitalizes older buildings rather than demolishing them. This includes HVAC upgrades to make the buildings more energy-efficient. In 2011, Renew of Biological Sciences West and South was completed.	Continue to upgrade older buildings instead of demolishing them through UBC Renew, which will include HVAC upgrades.	2003	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	54	% of retrofits since start year indicated had lighting systems upgrades	Renew of Biological Sciences West and South included installation of the patented Solar Canopy Illumination System, developed by the UBC Structured Surface Physics Laboratory. Sunlight is collected by a specially designed array of mirrors and brought into the building via customized light guides that are integrated with dimming electric lamps to automatically supplement the sunlight when necessary.	Complete and implement a new indoor lighting strategy to specify standardized products, controls and maintenance. Continue to switch from 32W to 25W T8 lamps. Install LED lamps in specialty fixtures such as pot lights, wall sconces and other decorative lighting.	2003	No End Date (Continuous)

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	90	% of retrofits since start year indicated had control system upgrades or adjustments	Control system adjustments and upgrades were identified in the audits completed for 17 laboratory buildings in Phase 1 of Continuous Optimization retro-commissioning project.	Control system adjustments will be conducted on 70 buildings as part of Continuous Optimization program.	2003	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	67	% of retrofits since start year indicated had insulation improvements	As part of BioSciences Renew, windows were upgraded from single to double glazing and insulation was improved.	Envelope improvements will continue as part of UBC Renew.	2003	No End Date (Continuous)
Install an on-site renewable energy demonstration project	Ongoing/In Progress			Constuction began on UBC's Bioenergy Research and Demonstration Facility, the first commercial-scale demonstration of biomass gasification co-generation in North America.	The Bioenergy Research and Demonstration Facility, which will reduce campus GHG emissions by 9 percent, commences operation in May 2012. This innovative research platform will yield valuable new knowledge in the clean energy sector.	2008	No End Date (Continuous)
IT power management							
Implement server virtualization	Ongoing/In Progress	95	% of servers have been virtualized since start year indicated	At the end of the year over 1,500 servers had been virtualized – 95% of the centrally-managed campus total.	In 2012 should reach 98-99% servers virtualized. A very small number of systems may require to stay on physical servers - for that reason UBC will not be 100% virtual until those systems are decommissioned.	2009	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress			Autosleep settings are recommended by Sustainability Coordinators to their peers in 150 departments and units.	Continue to promote autosleep settings through Sustainability Coordinators.	2005	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	3	% reduction in printers, copiers, and/or fax machines since start year indicated	Ongoing implementation of Xerox Document Management Strategy (a partnership with Xerox Global Services) across campus. There are currently 163 departments that have signed up to date (90% increase from 2010).	Ongoing communication to campus about XDMS and XGS partnership. Create report to track key performance indicators. UBC BuySmart will provide education around all of our preferred vendors, including XGS.	2009	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Ongoing/In Progress	7	% of devices have auto-sleep settings applied	All devices through Xerox Document Management Strategy are enabled with power saver settings. All departments that sign up are also given training by the on-site Xerox employee in regards to the sustainable features and functionalities.	Ongoing communication to campus about XDMS and XGS partnership. Create report to track key performance indicators.	2009	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress			Standard when ordered through Supply Management. EnergyStar seminar was attended by Supply Management and Campus Sustainability. Received material and tools to be used in RFP process and on UBC BuySmart website. Information Technology Procurement Advisory Committee (ITPAC) was formed, bringing together the various IT groups on campus at the director level.	Ongoing when ordered through Supply Management. Supply Management is currently looking into to becoming an EnergyStar program participant which would give access to resources and tools for educational purposes. UBC BuySmart will educate end-users on purchasing EnergyStar computers. ITPAC to begin discussion about purchasing (initial stage; creating a bigger picture for each group purchasing processes and standards).	2009	No End Date (Continuous)
Appliances and electronic devices							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress			Standard when ordered through Supply Management. This is end-user driven to a certain point (need to educate). EnergyStar seminar was attended by Supply Management and Campus Sustainability.	Continue to engage vendors and end users on adopting EnergyStar equipment. Supply Management will be incorporating UNSPCS codes for commodity tracking to report on type of appliance purchased to confirm if energy efficient units are purchased. UBC BuySmart will educate end-users on purchasing EnergyStar fridges.	2009	No End Date (Continuous)
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress			Standard when ordered through Supply Management. This is end-user driven to a certain point (need to educate). EnergyStar seminar was attended by Supply Management and Campus Sustainability.	Continued replacement of other appliances with ENERGY STAR models when ordered through Supply Management. Incorporate UNSPCS codes for commodity tracking to report on type of appliance purchased to confirm if energy efficient units are purchased. UBC BuySmart will educate end-users on purchasing EnergyStar appliances.	2009	No End Date (Continuous)

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	In Development			Waste Management (WM) purchased a bulb eater to reduce amount of bulbs that end up in landfill. All departments can return old bulbs to WM for proper disposal.	UBC BuySmart will serve as an educational tool for end-users (in this instance, encouraging the purchase of CFL bulbs and proper disposal will be outlined on the site under "lighting"). Include sustainability training during Pcard training, including new and existing staff to purchase environmentally friendly products such as CFL bulbs.	2010	No End Date (Continuous)
Behaviour change program							
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			New online energy conservation tool developed and promoted to UBC's 110 Sustainability Coordinators and their department members. Campus Sustainability also developed and promoted the New Employee Sustainability Guide. Both the online toolkit and employee sustainability guide have a section on unplugging equipment and turning off power bars.	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy which will identify high impact and highly adoptable behaviours UBC-V students, staff, faculty and residents can take to support the University's aggressive climate and energy, water, waste and transportation targets. The plan will recommend innovative programs, social marketing and communications tools needed to foster a culture of sustainability and resource conservation.	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			Promotion of the 2011 National Sweater Day to UBC's staff Sustainability Coordinators, their departments and to UBC's two first year residences. Promotion of heat saving tips such as wearing seasonally appropriate clothing, turning down the thermostat by 2 degrees and closing blinds/curtains at the end of the work day to conserve building heat loss.	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2010	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			Ongoing promotion of lights-out and computer energy conservation toolkits ask staff who are last to leave the work place to make sure all lights are turned off, non-essential equipment unplugged and computers turned off.	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2003	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress			Encouraged over 3100 first year students in UBC's Totem Park and Place Vanier residences to use stairs instead of elevators during the innagural Do It in the Dark energy competition. Poster prompts placed near all elevators and stairwells.	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2011	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Lights-out stickers, lights-out posters, computer-off stickers, unplug stickers and energy conservation posters available through the Campus Sustainability Office. This is continuous.	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2003	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			Encouraged over 3100 first year students in UBC's Totem Park and Place Vanier residences to conserve hot water in the 2011 Do It in the Dark energy conservation competition. Shower timers installed in all bathrooms in these buildings and poster prompts about hot water conservation placed near showers, sinks and laundry rooms.	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2011	No End Date (Continuous)
Other Stationary Fuel Combustion, Electricity, and Fugitive Emissions Actions							
Develop and implement UBC-specific standards for implementing LEED Gold	Ongoing/In Progress			In addition to the provincial requirement that new buildings be LEED Gold certified, UBC developed a LEED Implementation Guide to optimize the LEED process for the campus and help UBC achieve its sustainability targets. The guide outlines which credits are considered mandatory requirements or recommended by UBC, including energy performance of 42% below MNECB.	Continue to require design teams to follow the Guide. Final LEED scorecards and certification results for all completed projects will be collected to verify that UBC requirements and recommendations are achieved.	2009	No End Date (Continuous)

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Develop Energy Density Targets for new construction and major renovations, as per UBC Climate Action Plan	Ongoing/In Progress	2	number of buildings designed to Energy Density Targets	A method for specifying Energy Density Targets was developed for new construction including labs, classrooms, offices and student residences. Customized targets were generated and used by design teams on two new buildings.	Continue to specify absolute energy targets for all new construction, in addition to the relative performance requirements of LEED. In 2012 a consultant will develop Energy Density Targets for major renovations.	2010	2012
Use UBC's Residential Environmental Assessment Program for Green Building Certification of residential buildings owned by UBC Properties Trust	Ongoing/In Progress	10	number of residential buildings certified under the REAP system	Earned REAP Gold certification on 3 neighbourhood residential buildings. Piloted use of REAP on new Totem Park student residence buildings to deliver equivalence to LEED Gold.	Earn REAP Gold on all UBC-owned residential buildings. Assess student residence pilot and if successful, develop REAP Application Guide for Student Residences.	2005	No End Date (Continuous)
Replace computers with virtual desktops	Ongoing/In Progress	850	number of desktops virtualized	In 2011, 650 virtual desktops were rolled out.	Program is proceeding at rate of 500 virtual desktops per year. When Enterprise Active Directory is deployed to more departments, expect the rate of VDI to increase to 1000 /year as originally forecast.	2010	No End Date (Continuous)
Develop Green Labs program to reduce energy use in laboratories	Ongoing/In Progress			Based on a pre-feasibility study conducted in 2011, which identified strategies that could be implemented with simple payback of 5 years or less, pilot projects were developed for implementation in 2012. The Shut the Sash behaviour change campaign was initiated in 2011 leading up to a competition for fume hood users in three buildings in early 2012.	Analysis of retrofit pilot projects in 2012 will inform a campus-wide retrofit program. The Shut the Sash competition in 2012 will be assessed to determine whether it will be repeated.	2011	No End Date (Continuous)
Upgrade utilities infrastructure to improve efficiency	Ongoing/In Progress			Began one of the largest steam to hot water conversions in North America that will replace 14 km of aging steam system piping infrastructure. Completed Phase 1 which connected the hot water system to 15 buildings and is estimated to reduce annual natural gas consumption by 12,000 GJ.	Phases 2 through 7 will be completed by 2014. The hot water system will heat 130 buildings on campus upon completion in 2017. Due to much lower distribution losses with hot water compared to steam, the project will reduce UBC's energy use by 24 percent and GHG emissions by 22 percent, saving \$4 million in operating and energy costs annually.	2011	No End Date (Continuous)
Build net-zero buildings	Ongoing/In Progress			Opened the Centre for Interactive Research on Sustainability (CIRS) in September 2011. This regenerative building is net-zero in energy, GHG emissions and water.	Conduct research projects on the CIRS building.	2011	No End Date (Continuous)
Supplies (Paper)							
Paper Type							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	85	% of total paper purchased contains 30% recycled content	Continue to promote use of 30% post-consumer paper through Sustainable Purchasing Guide and Sustainability Coordinator Toolkit.	Supply Management completed a paper RFP which will be evaluated in 2012. From here, we will work with preferred vendor to determine new sustainable goals (ie move towards 100% of purchases at 30% post-consumer waste content, eliminate purchase of virgin paper, and reduce paper where possible). UBC BuySmart will be a tool to educate end-users about sustainable paper purchases. A SEEDS project is underway which is performing a triple bottom line assessment on Wheat Paper.	2003	No End Date (Continuous)
Purchase 40% post-consumer recycled paper	Ongoing/In Progress	1	% of total paper purchased contains 40% recycled content	Continue to promote the purchase of 30% post-consumer paper.	Same as above.	2011	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	1	% of total paper purchased contains 100% recycled content	Continue to promote the purchase of 30% post-consumer paper.	Same as above.	2007	No End Date (Continuous)
Printer/document settings							

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Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	7	% of network printers or photocopiers are set to automatic double-sided	At the end of 2011, the printer fleet was reduced by another 44 units, to a total of 8,406 units on campus. According to Xerox Global Services (XGS), 599 units are under the XGS agreement and have automatic double-sided settings. Users are trained how to use these features by an on-site Xerox employee. Continued promotion of SC toolkit and posters promoting double sided printing in UBC departments: http://sustain.ubc.ca/campus-sustainability/double-sided-printing .	Ongoing communication to campus about XGS partnership. Develop tracking mechanism to record how many departments are using double-sided feature. Continue promotion of SC toolkit and posters promoting double sided printing in UBC departments.	2009	No End Date (Continuous)
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	Ongoing/In Progress	7	% of network printers have 'print and hold' settings applied	All XGS devices have print and hold settings and users are trained how to use these features by an on-site Xerox employee.	Ongoing communication to campus about XGS partnership. Develop tracking mechanism to record how many departments are using print and hold settings.	2009	No End Date (Continuous)
Reduce default margin size in standard document templates (e.g., letters, briefing notes, forms, etc.)	Ongoing/In Progress			Continued toolkit promotion for reduction of default margin size online through sustainability coordinator online toolkits; the toolkit asks UBC staff to reduce margins from 1.25 inches to 1 inch: http://sustain.ubc.ca/campus-sustainability/paper-saving-through-reduced-margins .	Ongoing promotion of toolkit. Development of a baseline tool to assess number of staff in UBC departments with reduced margin settings.	1999	No End Date (Continuous)
Electronic media in place of paper							
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	In Development			Supply Management and IT departments continue to explore document sharing solutions. Formation of ITPAC brought together multiple IT groups across campus (UBCV & UBCO) and will allow for discussion around software sharing .	Information Technology Procurement Advisory Committee (ITPAC) to develop strategy.	2010	No End Date (Continuous)
Use electronic document library for filing common documents	In Development			Supply Management and IT departments continue to explore electronic document library solutions. Formation of ITPAC brought together multiple IT groups across campus (UBCV & UBCO) and will allow for discussion around electronic document library solutions.	Information Technology Procurement Advisory Committee (ITPAC) to develop strategy.	2010	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			Supply Management has updated the Travel & Expense (T&E) program which will eliminate the need for paper requisitions. Continued to develop E-procurement to eliminate paper requisitions and invoices when procuring through Supply Management. Included Level 3 (L3) data requirement in RFPs to ensure that vendors will be compatible with E-Procurement system. Supply Management also sent out communication to over 100 scientific vendors encouraging electronic catalogues and promotional materials over printed ones.	Supply Management to launch the updated Travel & Expense (T&E) program which will eliminate the need for paper requisitions. E-procurement will create a new procure to pay proecess that will also eliminate the need for paper requisitions and the back-up traditionally required (FY13-14).	2010	No End Date (Continuous)
Behaviour change program							
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Continued promotion of Sustainable Purchasing Guide which promotes paperless meetings/events and offers strategies to do so. http://www.sustain.ubc.ca/sites/default/files/uploads/pdfs/PrintingAndPaper.pdf .	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2009	No End Date (Continuous)
Encourage re-use of scrap paper	Ongoing/In Progress			Continued toolkit promotion for paper reduction through paper reuse and double sided printing. http://www.sustain.ubc.ca/sites/default/files/uploads/pdfs/PrintingAndPaper.pdf .	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	1999	No End Date (Continuous)
Other Paper Supplies Actions							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Toolkit to promote paper reduction through the use of email filing rather than printing emails	Ongoing/In Progress			Yearly distribution of toolkit online and through Sustainability Coordinators: http://www.sustain.ubc.ca/campus-sustainability/paper-reduction-through-email-filing .	Development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2003	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 <i>Greenhouse Gas Reduction Targets Act</i> . Public sector organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.							
Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Business Travel							
Policy and budgeting							
Create a low-carbon travel policy or travel reduction goal	Ongoing/In Progress			Committee was struck to review policy and guidelines, specifically addressing green hotels, hybrid cards and preferred vendors.	Updated procedures will be piloted in 2012 for eventual campus roll-out.	2009	2013
Virtual meeting technology							
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	In Development			Meeting rooms in several buildings are equipped with video conferencing units.	Planning a pilot to promote use of video conferencing between several departments and UBC Okanagan.	2010	No End Date (Continuous)
Behaviour change program							
Train staff in web-conferencing	Ongoing/In Progress			Continued promotion of web conferencing in the UBC Sustainable Purchasing Guide.	Continued promotion of web conferencing in the UBC Sustainable Purchasing Guide.	2010	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress			Continued promotion of web conferencing in the UBC Sustainable Purchasing Guide.	Continued promotion of video conferencing in the UBC Sustainable Purchasing Guide. Planning a pilot to promote use of video conferencing between several departments and UBC Okanagan.	2010	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress			Continued promotion of web conferencing in the UBC Sustainable Purchasing Guide.	Continued promotion of web conferencing in the UBC Sustainable Purchasing Guide.	2010	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress			Continued to encourage carpooling to meetings through use of carsharing on campus (Zipcar, Modo). Added Car2Go service on-campus. Evaluated several carpool matching services for suitability at UBC. Cancelled Carpool.ca subscription due to limited returns on investment and to free funds for another provider.	Develop a real-time ride matching program for integration with a UBC mobile platform. Expand the location and number of Car2Go vehicles on-campus.	1997	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Continued promotion of alternatives to SOV (Employer Pass Program, Upass, bike facilities, campus shuttles, pedestrian oriented campus).	Continue to explore the feasibility of implementing public bike share system at UBC. Continue to explore options for improving transit service to UBC, including rapid transit option. Improvements to the public realm and master plan to pedestrianize campus.	1997	No End Date (Continuous)
Other Business Travel Actions							
Promote Sustainable Hotels Program	Ongoing/In Progress			The CAUBO program was used which indicates the green keys. Identified a new category to pursue green iniatives with hotel suppliers for UBC sponsored off-campus meetings, events and conferences.	Create a managed meeting program and build a preferred supplier list with sustainability aspects. Identify best practices in industry.	2010	No End Date (Continuous)
Education, Awareness, and Engagement							
Team-building							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress			The Sustainability Coordinator Program engaged 110 staff with opportunities and resources to promote and implement sustainable practices in their unit, who use 2-4 hours per month of paid staff time approved by the Board of Governors in 1999. The Sustainability in Rez program continued to mobilize students to reduce water, waste, and energy consumption in residences and to build a culture of sustainability by training and supporting 32 Residence Sustainability Coordinators. The UBC Climate Action Plan Working Groups (Development and Infrastructure, Energy Supply and Management, Fleet, Transportation (Commuting), Business Travel and Procurement, and Food) involve over 40 staff campus-wide to implement the Plan, approved by the Board of Governors in 2010.	Ongoing support for committees.	2003	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress			New resources and initiatives developed for the Sustainability Coordinator program in 2011 included a New Employee Sustainability Guide for UBC staff and faculty, the UBC Recyclopedia and a monthly sustainability networking series. Key achievements for the Sustainability in Rez program include developing tailored Sustainability in Rez toolkits and creating three new formal Sustainability Committees in student residences.	Ongoing FTE position and student intern position.	2003	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress			Training for 15 new staff Sustainability Coordinators held in 2011. The training educates Sustainability Coordinators about energy conservation, zero waste, sustainable purchasing and sustainable transportation choices as well as principles of community based social marketing and engagement strategies. Developed and launched a Personal and Professional Development sustainability workshop for Residence Coordinators and Residence Advisors.	Ongoing training for new staff Sustainability Coordinators and for Residence Coordinators and Advisors.	2003	No End Date (Continuous)
Awards/Recognition							
Establish a sustainability/green awards or recognition program	Ongoing/In Progress			105 staff, senior management, students and faculty attended the annual Sustainability Appreciation Luncheon to recognize and celebrate staff, student and faculty efforts in the Sustainability Coordinators and SEEDS programs.	Ongoing hosting of annual sustainability appreciation event.	2008	No End Date (Continuous)
Staff Professional Development							
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress			6 education events offered to UBC staff through the Sustainability Coordinator Program.	Ongoing educational events offered to staff Sustainability Coordinators.	2003	No End Date (Continuous)
Staff awareness/education							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Provide education to staff about the science of climate change	Ongoing/In Progress			Various academic departments, including The Pacific Institute for Climate Solutions (PICS) and the Institute of Resources, Environment and Sustainability (IRES), regularly host public lecture series available to staff on various sustainability related subjects, including lectures on climate change. Ongoing tuition fee waiver available for staff can be used to enroll in undergraduate and continuing studies courses, some of which include climate change science. UBC Reads Sustainability features leading authors on sustainability topics to engage in campus-wide discussions on sustainability: http://ubcreadssustainability.com/about-ubc-reads-sustainability.	Continued lectures and course offerings on climate change science.	Started before 1995	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress			6 events held in 2011 on waste reduction, sustainable purchasing, regenerative buildings, battery recycling, Fair Trade campus and transportation alternatives. Ongoing promotion of online toolkits which educate staff on energy conservation, GHG reduction, zero waste and alternative transportation.	Ongoing educational events for Sustainability Coordinators. Ongoing promotion of online toolkits.	2003	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress			12 monthly newsletters delivered to Sustainability Coordinators, providing updates, tips and links to events and resources on sustainability issues . 4 Green Research e-newsletters published through Risk Management Services providing green research information to UBC faculty and staff.	Ongoing distribution of newsletters.	2003	No End Date (Continuous)
Provide sustainability education during new staff orientation	Ongoing/In Progress			Promotion of the New Employee Sustainability Guide. Booth with sustainability materials and resources offered at quarterly new staff and faculty orientation.	Continued participation in quarterly new staff orientation.	2005	No End Date (Continuous)
Client/public awareness/education							
Provide education to clients/public about the science of climate change	Ongoing/In Progress			Various academic departments, including The Pacific Institute for Climate Solutions (PICS) and the Institute of Resources, Environment and Sustainability (IRES), regularly host public lecture series on various sustainability related subjects, including lectures on climate change.	Continued lecture series on climate change science.	2008	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	Ongoing/In Progress			Public release of toolkits on website: http://www.sustain.ubc.ca/campus-sustainability/getting-involved/sustainability-coordinators/sctoolkit .	Continued updating and dissemination of toolkits and newsletter.	2003	No End Date (Continuous)
Provide green tips on client/public website or in newsletters	Ongoing/In Progress			The UBC Sustainability Initiative Twitter account sends out short timely newsbites, tips and resources to over 3,400 followers.	Continuted use of Twitter as a communications tool to the UBC internal and external community.	2003	No End Date (Continuous)
Other Education, Awareness, and Engagement Actions							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Offer and promote sustainability learning opportunities through undergraduate, graduate, and continuing studies academic programs	Ongoing/In Progress			UBC offers more than 450 courses at the undergraduate and graduate level that address environmental, social and techno-economic aspects of sustainability in over 50 subjects. Comprehensive sustainability course listing online. UBC offers more than 25 undergraduate, graduate and professional programs that allow students to orient their degree on a sustainability subject area. The UBC Continuing Studies Centre for Sustainability (CSCS) offers over 20 sustainability courses and 4 certificate programs to the wider community. In August 2011, a Student Sustainability Advisor was hired to council students campus wide on curricular and co-curricular sustainability learning opportunities.	Continue to offer and promote sustainability learning opportunities through undergraduate, graduate, and continuing studies academic programs.	Started before 1995	No End Date (Continuous)
Support faculty to incorporate sustainability into academic programs, courses and initiatives	Ongoing/In Progress			The USI Teaching & Learning Fellowship Program annually brings together 6 outstanding UBC faculty members who are leaders in sustainability education to share ideas and advance sustainability curricula on campus. http://sustain.ubc.ca/teaching-learning/fellowship-program. The USI Spotlight Program awards up to 4 grants annually to UBC instructors to expand, revise and/or retool existing courses and increase their relevance to sustainability issues and accessibility to UBC students. http://sustain.ubc.ca/teaching-learning/support-educators/teaching-learning-office-initiatives. The USI Teaching & Learning Office actively engages with departments and faculties campus-wide to promote the 4 UBC student sustainability attributes and catalyse the development of "sustainability learning pathways" (developed in 2011). See http://sustain.ubc.ca/sites/sustain.ubc.ca/files/uploads/pdfs/Sustainability%20Attributes_August%202011_FINAL%20%282%29.pdf.	Continue to consult with faculties and departments on sustainability attributes and pathways. Continue the Fellowship and Spotlight Programs.	2006	No End Date (Continuous)
Advance sustainability in campus operations by coordinating and supporting partnerships between staff, faculty and students via SEEDS program	Ongoing/In Progress			The SEEDS (Social, Ecological, Economic, Development Studies) program engaged 66 staff, 37 faculty members and 400 students in the 2011/12 academic year, resulting in 65 completed projects and 119 student reports. The outcomes of many of these reports will be implemented or affect the decision-making of staff related to sustainability at UBC.	Ongoing coordination of SEEDS program to engage students, staff, and faculty in sustainability research and projects on campus.	2000	No End Date (Continuous)
Increase student engagement in energy conservation initiatives in residences	Ongoing/In Progress			UBC participated in goBeyond's provincial Do It in the Dark energy and water conservation competition and expanded the campaign to three additional houses at Totem Park and to Place Vanier, enabling the program to reach over 3,100 first year students with energy and water conservation messaging and tips. Overall, UBC won ‘campus champion’ in the provincial competition, with Totem Park winning grand prize for greatest energy reduction and Place Vanier taking 3rd place for participation.	Continue to roll out the Do it in the Dark energy conservation competition in UBC's two first year residences. Explore opportunity to enhance building-level metering.	2008	No End Date (Continuous)

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Increase student engagement on climate action by supporting GoBeyond project and Common Energy UBC	Ongoing/In Progress			Supported goBeyond (http://www.go-beyond.ca) and Common Energy UBC (http://commonenergyubc.wordpress.com/) by offering one paid internship position through the Campus Sustainability Office for UBC campus outreach activities on climate action and sustainability. In 2011, Common Energy held 23 events at UBC with a total attendance of 995 participants, had 50 active student volunteers and coordinated initiatives such as a composting flash mob and a Fair Trade flash mob.	Continued support for and collaboration with goBeyond and Common Energy.	2008	No End Date (Continuous)
Provide sustainability education during new student orientations	Ongoing/In Progress			Annual outreach about sustainability to new students at UBC's annual new student orientation events including Imagine UBC, Gala and Jumpstart. UBC's Centre for Student Involvement also created an Eco-Team to support the Imagine UBC orientation event. Listing of sustainability-oriented student groups and volunteer opportunities to help students find relevant co-curricular opportunities: http://sustain.ubc.ca/teaching-learning/beyond-classroom .	Continue to provide sustainability education during new student orientations.	Started before 1995	No End Date (Continuous)
Launch Green Research Challenge	Ongoing/In Progress			The Green Research Challenge is an annual team event promoting environmentally sustainable research practices at UBC. In 2011 94 UBC laboratory users divided into 12 teams to collect points over a two-month period by participating in a series of green research activities. The impacts include increased awareness of green research resources currently available to lab users at UBC, new green practices implemented in laboratories across campus (65% of participants adopted greener practices after learning about them in the 2011 UBC Green Research Challenge), and further development of campus initiatives around Styrofoam reduction and energy conservation based on information obtained from the challenge activities.	Continue to host the annual Green Research Challenge and engage lab users in this event.	2011	No End Date (Continuous)
Develop and promote the Shut the Sash Fumehood Energy Conservation Campaign	Ongoing/In Progress			Campus Sustainability partnered with BC Hydro and FortisBC in Shut the Sash, an energy-saving and education campaign focusing on fume hoods. 2011 focused on the development and promotion of this campaign to 3 lab buildings on campus, with individual presentations on fumehood energy conservation delivered to 14 lab groups out of 43 groups in the 3 buildings.	Launched Shut the Sash campaign in January 2012. Next steps are compiling results and recommendations for next steps.	2011	No End Date (Continuous)
Develop comprehensive Sustainability Engagement Strategy	In Development			Began development of a multi-year comprehensive Sustainability Engagement Strategy which will identify high impact and highly adoptable behaviours UBC-V students, staff, faculty and residents can take to support the University's aggressive climate and energy, water, waste and transportation targets. The plan will recommend innovative programs, social marketing and communications tools needed to foster a culture of sustainability and resource conservation.	Hire a Strategy Manager to lead the development and implementation of a multi-year comprehensive Sustainability Engagement Strategy.	2011	No End Date (Continuous)
Other Sustainability Actions							
Water conservation							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	In Development	50	percent reduction in water consumption in institutional and ancillary buildings (adjusted for growth) from 2000 levels in the 10/11 fiscal year	A Water Audit of 7 UBC buildings was conducted in 2011 to help develop an informed water conservation strategy. UBC also initiated the development of a Water Conservation Action Plan, which included public consultation and Working Group meetings. In 2010/11, UBC achieved a 50% reduction in water consumption in institutional and ancillary buildings (adjusted for growth) from 2000 levels.	UBC's Water Conservation Action Plan will be complete in 2012. Actions to reduce potable water consumption will be undertaken in subsequent years.	2010	No End Date (Continuous)
Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features	In Development			A Water Audit of 7 UBC buildings was conducted in 2011 to help develop an informed water conservation strategy. UBC also initiated the development of a Water Conservation Action Plan, which included public consultation and Working Group meetings.	UBC's Water Conservation Action Plan will be complete in 2012. Actions to reduce potable water consumption will be undertaken in subsequent years.	2010	No End Date (Continuous)
Introduce a stormwater management landscape strategy (e.g., vegetated roofs, permeable paving, rain gardens, bioswales)	In Development			To enhance the water quality in the local creeks and outfalls that service the UBC Vancouver Campus and to protect the cliffs surrounding the Campus, UBC strives to minimize flows from new developments by attenuating them with various techniques (i.e. deep aquifer recharge, on site detention tank, evapo-transpiration, etc.). Campus and Community Planning is currently developing an Integrated Stormwater Management Plan (ISMP).	Integrated Stormwater Management Plan will be complete in 2013. Analysis of ISMP will determine recommendations for stormwater detention or infiltration to lower aquifer within the context of concerns around cliff erosion.	2007	No End Date (Continuous)
Waste reduction/diversion							
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	44	percent of operational waste diverted in 10/11 fiscal year	UBC's campus-wide waste audit report was complete in 2011. UBC also initiated the development of a Zero Waste Action Plan, which included public consultation and Working Group meetings. Many waste reduction programs continue to operate on campus. UBC achieved a 44% operational waste diversion rate for the 10/11 fiscal year.	UBC's Zero Waste Action Plan will be complete in 2012. Further actions to reduce solid waste, and increase waste diversion, will be undertaken in subsequent years.	1997	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress			Continued to operate comprehensive Green Research Program. Over 70 UBC faculty, staff and lab personnel attended the 2011 Green Research Workshop to learn about hazardous materials substitution, source reduction and waste management. Held labs plastic and styrofoam recycling workshop, attended by over 50 participants. Distributed 4 issues of the Green Research newsletter and released revised and updated Laboratory Pollution Prevention and Hazardous Waste Manual. UBC achieved a 6% reduction in total hazardous waste generation in 2011 compared to 2010 figures. Considerable source reduction was achieved for pathological waste (38% reduction), chemical waste (28% reduction), non-regulated contaminated solid waste (12% reduction), and photographic waste (5% reduction). Biohazard risk groups 1 and 2 had no change from 2010 to 2011. All other waste streams had an increase from 2010 to 2011. Due to active participation in all available recycling programs, 18% of hazardous waste generated was recycled, resulting in an additional waste reduction of approximately 17.35 tonnes, and an estimated costs savings of \$30,121 in 2011.	Continue to promote and implement hazardous waste reduction and disposal strategies, trainings, and programs, including the Green Research Workshop, quarterly newsletter, and Green Research Challenge, and subject specific workshops (i.e. lab plastic and Styrofoam recycling).	1996	No End Date (Continuous)
Procurement (non-paper supplies)							

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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress			Ongoing promotion of Sustainable Purchasing guide. Development of UBC BuySmart (which will provide a list of preferred/pre-qualified vendors as well as sustainable partners. It will also educate end-users about sustainable purchasing such as recycled content in products and what logos to look for in each category).	Launch UBC BuySmart online tool and provide a list of preferred/pre-qualified vendors as well as sustainable partners. Begin working on third edition of Sustainable Purchasing guide in collaboration with Campus Sustainability and Student Housing & Hospitality Services.	2009	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	9%	Minimum of % weighting in RFP process	Weight given to sustainability is encouraged to be a minimum 20%, but is ultimately end-user driven. In the fall of 2011, Supply Management worked with Campus Sustainability and Risk Managment to create a list of standard sustainability criteria to standardize evaluation and empower the procurement officers to maintain a 20% weighting.	Roll out the list of standard sustainability criteria to all procurement officers (UBCV & UBCO). Begin internal tracking of RFP sustainability weighting on a quarterly basis (UBCV & UBCO). This will give us insight into which RFPs are not achieving a minimum of 20% and/or which RFPs have a possibility for higher percentages.	2010	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress			UBC Building Operations has adopted a ‘Green Housekeeping Program’ model that encompasses a number of comprehensive green cleaning/housekeeping initiatives which are being incorporated into the everyday operations of Custodial Services. Initiatives listed at: http://www.buildingoperations.ubc.ca/custodial/custodial-initiatives/ . The majority of buildings serviced by Custodial Services have portion controlled, Green Seal certified, chemical dispensing units. Continued to use 100% recycled paper towels and toilet paper and "value plus" degradable garbage bags manufactured in Canada in all academic buildings. Switched all gel colored hand soap to Green Seal foam soap in all academic buildings.	Switch the remainder of the academic buildings serviced by Custodial Services to the portion controlled, Green Seal certified, chemical dispensing units by early 2012. Establish a UBC Green Housekeeping policy and program, particularly for use as an Innovation & Design [ID] credit for LEED projects.	2007	No End Date (Continuous)
Require a minimum purchase of sustainable, and organic food and beverages supplied by contracted food suppliers or caterers	Ongoing/In Progress	48	% of the combined total food and beverage purchase (in cost) meets these requirements	UBC's Sustainable Purchasing policy applies to all procurement categories, including food. The Food Services bid process targets local, in season food and sustainable delivery mechanisms. UBC was awarded the first Canadian FairTrade University status by TransFair Canada in January 2011. 48% of UBC Food Services and AMS expenditures in the 10/11 fiscal year were on food and beverages that were locally grown, raised or processed within 150 miles of campus or are third-party certified (i.e. Organic, Fair Trade, Oceanwise).	Targeting 100% Oceanwise seafood in 2012, investigating Fair Trade sugar, and pursuing direct sourcing from local farmers. A processing facility will be embedded at the new Farm Centre with some capacity to supply food to campus. In 2012 SHHS will be researching the availability of locally-sourced ingredients year-round to make signature UBC products like pizza sauces, french fries and coleslaws.	2001	No End Date (Continuous)
Building construction, renovation, and leasing							
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress			LEED credits for Construction Waste Management continue to be mandatory for all new construction and major renovations, which includes a minimum 75% waste diversion. These UBC mandatory credits are highlighted in the Vancouver Campus Plan Design Guidelines (LEED Implementation Table).	UBC intends to track construction & demolition waste diversion for all minor and major projects. There are also plans to continually increase minimum waste diversion requirements for contractors.	2005	No End Date (Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	100	% of business cases incorporating lifecycle costing since start year indicated	Continued use of lifecycle costing in all new construction and major renovation projects.	Continue to use lifecycle costing for all new construction and major renovation projects.	2000	No End Date (Continuous)
Indoor air quality							

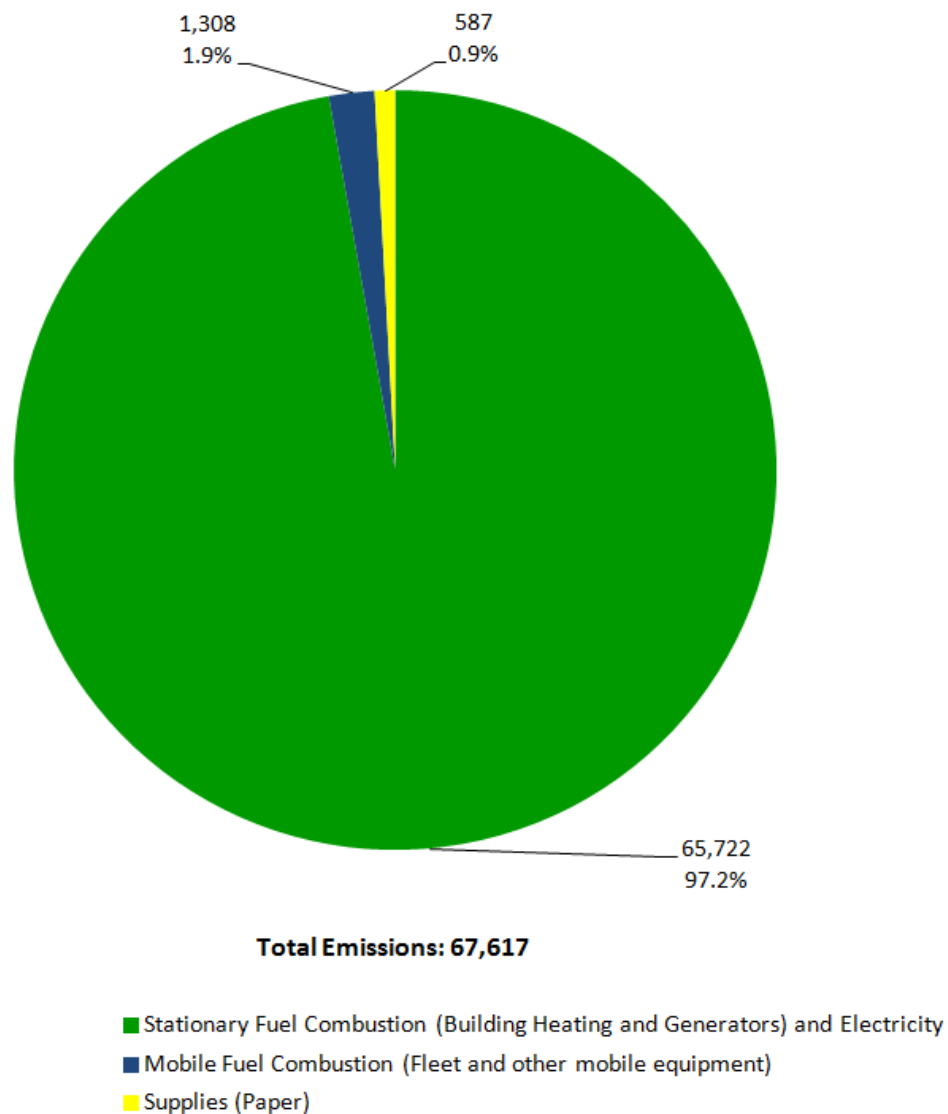
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Action	Status (as of 12/31/11)	Performance to Date (as of 12/31/11)		Steps Taken in 2011	Steps Planned for 2012 -2014	Start Year	End Year
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress			Scent free policy is addressed at the department level. Information encouraging a scent-free workplace is distributed to departments and information for handling scent situations are posted on the Risk Management Services (RMS) website: http://riskmanagement.ubc.ca/health-safety/scents-workplace/dealing-scent-situation . IAQ assessments are performed by RMS staff on an as needed basis: http://riskmanagement.ubc.ca/health-safety/indoor-air-quality .	Continue to promote a scent free workplace and conduct IAQ assessments on an ongoing basis.	1995	No End Date (Continuous)
Incorporate low volatile organic compounds (VOCs) standards into procurement policy for products such as paints, carpets, and furniture	Ongoing/In Progress			Continued to source products according to performance requirements in UBC Technical Guidelines, which specify use of low or no-VOC adhesives, flooring and carpets; and lowest-range VOC products in each paint category (preferably "3-Tree" and Eco-Logo certified).	Annual review of Technical Guidelines.	2002	No End Date (Continuous)
Commuting to and from home							
Introduce telework/work from home policy	Ongoing/In Progress			Continued to provide telecommuting and work from home guidelines for Management & Professional (M&P) staff. http://www.hr.ubc.ca/faculty-staff-resources/telecommuting/ .	Continue to provide telecommuting and work from home guidelines for Management & Professional (M&P) staff.	2009	No End Date (Continuous)
Offer staff a compressed work week	Ongoing/In Progress			Continued to provide flexibility in UBC collective agreements to allow for compressed work weeks where it is operationally feasible.	Continue to provide flexibility in UBC collective agreements to allow for compressed work weeks where it is operationally feasible.	2000	No End Date (Continuous)
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress	66	% of campus users commute by foot, bicycle, carpool, or public transportation	Completed the construction of two additional secure bike parking facilities (Fraser River Parkade and North Parkade) removing vehicle parking and creating an additional 170 free, secure bike parking spaces for staff, faculty and students. Installed an additional 27 bicycle lockers across the campus providing an additional 54 secure bike parking spaces for rent (\$10/month). Launch of Upass BC: unlimited discounted transit pass for all students (\$30/month). Campus pedestrianization plan implementation began; Main Mall upgraded to facilitate more walking and cycling. Supported Bike to Work Week and ICBC Commuter Challenge.	Continue development of secure bicycle parking facilities. Continue support of encouragement programs (Bike to Work Week / Commuter Challenge). Renegotiate Upass BC contract with TransLink / Province. Evaluate real-time, ride-sharing mobile applications for suitability at UBC.	1997	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress			Examined campus development projects for compliance with Vancouver Campus Plan (VCP) Design Guidelines, which specify quantity of lockers / showers required in new developments. Provided in-kind support to departments or units interested in developing end-of-trip facilities in their buildings. Provided gear lockers in North Parkade secure bike parking project.	Continue to benchmark projects against VCP Design Guidelines. No plans to construct new shower facilities. Will continue to explore opportunities to have showers and lockers as part of infrastructure development.	1997	No End Date (Continuous)
Provide secure bicycle storage	Ongoing/In Progress	1026	registered secure bike parking users	Construction of North Parkade and Fraser River Parkade Bike Parking Facilities. Increased secure bike parking by 170 additional spaces. Purchased and installed 27 additional bike lockers, providing 54 additional secure bike parking facilities.	Construction of additional secure bike parking areas (Chemistry Precinct = 50+ bicycles). Improvements to road infrastructure. Considering launch of Public Bicycle System. Improve existing secure storage facilities, including installation of apparel lockers.	1997	No End Date (Continuous)
Modify parking fees or parking availability for staff/students	Ongoing/In Progress			In 2011, 4 lots were closed or reduced in size, removing 200 spaces.	Continue to assess parking fees and availability as part of UBC’s wider sustainable transportation initiatives.	2010	No End Date (Continuous)
Other Sustainability Actions							

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Expand preferred vendor agreements that advance sustainability	Ongoing/In Progress			Xerox signed up 147 departments on campus in 2011, bringing the total number of departments signed up with XGS to 163. Continued to reduce devices across campus and provide training on sustainable features and functionalities. Xerox has also set up a 3-year sustainability fund (\$12,000 over 3 years) that goes towards sustainability projects on campus. Fisher Scientific contract was renewed for one more year. Continued to fund Green Research initiatives and support the Fisher/Corning Plastics in labs initiative. Category Management created a 3 year pipeline that will increase our preferred/prequalified/sustainability partners list (ultimately on BuySmart).	Launch of UBC BuySmart will provide a list of preferred/pre-qualified vendors as well as sustainable partners. Our sustainable partners will be suppliers who work directly with Supply Management and align with Place and Promise and UBC's Climate Action Plan. Execute/implement Category Management opportunities identified on pipeline.	2010	No End Date (Continuous)
Provide housing for students, staff and faculty on campus, reducing commuting needs	Ongoing/In Progress			566 new student beds were completed at Totem Park in September 2011. UBC Vancouver’s student housing stock now totals over 9,000 beds, with approximately 27% of all full-time students housed on campus in 2011. An additional 735 faculty and staff units were also available on campus, including 537 rental units and 198 co-development units. The Housing Action Plan process was launched in Spring 2011, and will address issues of housing affordability and choice on campus for faculty, staff and students. Between April 2011 and March 2012, feedback and information was gathered to inform the development of a Housing Action Plan. During this time, a draft discussion paper, which outlines potential rental and purchase housing program options, was developed and shared with the public during a formal consultation session between March 20th and April 9th 2012.	A further 1,116 student beds are under construction in the first senior student, mixed academic use development to be called Ponderosa Commons (Phase 1 expected completion – September 2013). Housing program option recommendations will be made to the Board of Governors in 2012 based on the results of the Housing Action Plan.	Started before 1995	No End Date (Continuous)
Implement Styrofoam Reduction and Recycling Pilot	Ongoing/In Progress			Launched Styrofoam Reduction and Recycling pilot program. 40,700L of Styrofoam recycled from Sept-Dec 2011. More information available at: http://riskmanagement.ubc.ca/environment/styrofoam.	Continue to operate and promote the Styrofoam Reduction and Recycling program as part of the Green Research initiative. Explore opportunities to incorporate Styrofoam recycling as part of campus-wide recycling program as part of the Waste Action Plan. Work with vendors to explore opportunities for materials to replace Styrofoam.	2011	No End Date (Continuous)

**The University of British Columbia - Vancouver
Greenhouse Gas Emissions by Source
for the 2011 Calendar Year (tCO₂e*)**



Offsets Applied to Become Carbon Neutral in 2011 (Generated June 14, 2012 3:54 PM)

Total offsets required: **67,571**. Total offset investment: **\$1,689,275**. Emissions which do not require offsets: **46** **

*Tonnes of carbon dioxide equivalent (tCO₂e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

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