2012
University of Saskatchewan
Climate Action Plan
The University of Saskatchewan Climate Action Plan was developed from the recommendations of more than 30 individuals representing stakeholder groups from across campus. (For a complete list of contributors, please visit usask.ca/climateaction/Achieving%20Results/team.php) The project team, with the help of five subcommittees, reviewed, evaluated, developed, and refined strategies and initiatives that could help the university meet its greenhouse gas emission reduction target. We gratefully acknowledge their contributions to this very important endeavor.

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Contents

Message from the President .................................................. 5
Executive Summary ............................................................. 6
Introduction ........................................................................... 7
Carbon Footprint & Climate Commitment ................................. 8
Education, Research & Community Engagement ..................... 10
  Education & Research........................................................ 10
  Community Engagement.................................................. 11
Greenhouse Gas (GHG)
  Emissions Mitigation ........................................................ 12
    Energy ........................................................................... 12
    Transportation ................................................................ 14
    Waste Minimization ..................................................... 16
    Purchasing .................................................................... 17
Campus Sustainability
  Revolving Fund ............................................................... 18
  Implementation Structure ............................................... 18
  Communications Strategy ............................................... 19
  Conclusion ...................................................................... 19
“I am taking this opportunity to affirm my support for this initiative.”

Dr. Ilene Busch-Vishniac
President, University of Saskatchewan
Message
from the President

I am pleased to present the University of Saskatchewan’s 2012 Climate Action Plan (Draft). The plan was developed in response to the University and College Presidents’ Climate Change Statement of Action for Canada, which was signed by President Peter MacKinnon in October 2010. Signing the Statement of Action committed our institution to a number of initiatives, including completing a campus greenhouse gas inventory, setting targets for the reduction of our greenhouse gas emissions, and developing a climate action plan. I am taking this opportunity to affirm my support for this initiative.

The 2010 Greenhouse Gas Emissions Report was released in December 2011, and a multi-stakeholder project team was subsequently established to develop strategies to help the university reach its 2020 target to reduce greenhouse gas emissions to levels 20% below those in 2006. The team included members from all segments of the campus community. I would like to thank everyone involved for their input into this plan. The project team discussed, evaluated, and designed strategies to reduce campus greenhouse gas emissions in a number of areas and considered how to engage the campus community to ensure success. The recommended strategies were derived from and complement those contained in the Campus Sustainability Plan.

The Climate Action Plan represents the cumulative efforts of those who contributed to the earlier initiative I have just described, and confirms the University of Saskatchewan’s commitment to being a leader in reducing greenhouse gas emissions in the province and the community of Saskatoon. This plan is a living document, so as new opportunities emerge, our plan will be adapted to take best advantage of them.

While the University of Saskatchewan has for many years made energy conservation and energy efficiency a priority, it is now time to move beyond best practices to strategic innovation. In addition to helping us achieve our greenhouse gas reduction target, our Climate Action Plan identifies actions that will also reduce our operating costs. The plan is aligned with both the education and research sections of the Campus Sustainability Plan and supports relevant applied research relating to climate change and the reduction of greenhouse gas emissions. It also ensures our students are prepared for leadership in addressing environmental challenges, including climate change.

It is not only our generation that will be impacted by climate change, but also many generations to come. The challenges presented by climate change are significant, so I call upon our campus community to rise to these challenges through leadership and innovation.

Dr. Ilene Busch-Vishniac
President, University of Saskatchewan
Executive Summary

The University of Saskatchewan signed the University and College Presidents’ Climate Change Statement of Action for Canada (UCPCCS) on October 1, 2010 (for more information, go to climatechangeaction.ca). The signing of that document committed the University of Saskatchewan to pursuing responsible solutions to address climate change.

The U of S Sustainability Commitment Working Group was formed during the university’s Second Integrated Planning Cycle. The working group’s main goal was the development of the draft Campus Sustainability Plan (CSP) (sustainus.usask.ca/csp). This Climate Action Plan (CAP) became a key initiative in the CSP. The CAP’s purpose is to focus institutional research, education, and operations toward a comprehensive strategy that catalyzes solutions for climate change.

The CAP articulates proposed strategies for reducing greenhouse gas (GHG) emissions from the baseline defined in the 2010 Greenhouse Gas Emissions Report (usask.ca/climateaction/emissions/report_2010.php). The GHG baseline for 2010 is 165,300 MT eCO₂. Our reduction target is 20% below 2006/2007 levels by 2020, which equates to a GHG level of 128,800 MT eCO₂.

Strategies are identified in CAP cover six key areas:

1. Education, Research and Community Engagement
2. Energy
3. Transportation
4. Waste Minimization
5. Purchasing

Each area makes an important contribution to the overall reduction of GHG emissions on campus, either directly or through engaging members of the campus community and encouraging them to take action.
Introduction

The University of Saskatchewan Sustainability Commitment working group was assembled as part of the implementation of the university’s Second Integrated Plan. From 2008 until 2012, they were the planning body for this campus initiative. The key deliverable from the working group was the development of the draft Campus Sustainability Plan (CSP) (sustainus.usask.ca/csp). The CSP is a campus-wide initiative from which many of the strategies identified in this report were derived. The CSP remains the overall strategic plan for the university to increase and promote sustainability on campus. It is being shared with the campus community and will seek approval through the Third Integrated Planning (3IP) cycle. One of the key initiatives in the CSP is the development of this Climate Action Plan (CAP).

The CAP project team, formed in 2011, was multi-disciplinary and included representatives from across campus. Five subcommittees were formed to develop greenhouse gas (GHG) reduction strategies for these areas: energy, communication, education and research, transportation, waste, purchasing, and food. The subcommittees evaluated and refined strategies introduced in the CSP that pertain to GHG reduction. Additional strategies that align with IP3 (usask.ca/plan) and other campus initiatives were also included.

The Sustainability Learning Community at the U of S collected approximately 2,000 disposed-of cups, which they used to create a ‘Remembrance of a Real Tree’ sculpture in the foyer of the Murray Learning Commons during the last week of classes in April. Passers-by were encouraged to participate in the construction of the project and, in the process, learned about the pre- and post-consumer impacts of one-off materials like disposable coffee cups.
The university’s total carbon footprint (GHG emissions) was calculated at 165,300 MT eCO\textsubscript{2} for the 2009/10 fiscal year. This was a 2.6% increase from the baseline year (2006/07).

The university’s total carbon footprint (GHG emissions) was calculated at 165,300 MT eCO\textsubscript{2} for the 2009/10 fiscal year. This was a 2.6% increase from the baseline year (2006/07). Figure 1 shows the total emissions from 1990 until 2010.

Scope 1 emissions, mainly related to the production and distribution of steam in the Heating Plant, where natural gas is used to generate steam. This is Charles Krikau, shift engineer 2\textsuperscript{nd} class, with one of six boilers used to produce steam in the Heating Plant.

Scope 1 emissions are mainly related to the production and distribution of steam in the Heating Plant, where natural gas is used to generate steam.
The university’s goal is to reduce our emissions by 20% from 2006/07 levels by 2020. The target emissions level is 128,800 MT eCO₂ or less. This target aligns with the current Government of Saskatchewan target for the province.

Figure 3 illustrates that, by proceeding with the potential GHG reductions from the strategies proposed in this plan, we will be able to identify ways to further reduce GHG (e.g., a cogeneration plant to produce both heat and electricity using natural gas or bio fuels).

**Scope 1 emissions:** Direct GHG emissions from sources owned or controlled by the university.

**Scope 2 emissions:** Indirect GHG emissions from the generation of electricity consumed by the university.

**Scope 3 emissions:** All other indirect emissions from sources not owned or controlled by the university. Reporting is optional.

Detailed results and breakdown of the university GHG emissions are provided in the 2010 Greenhouse Gas Emissions Report.
Education, Research & Community Engagement

As a signatory to the UCPCCS, the University of Saskatchewan is committed to “sharing knowledge, research and best practices about climate change with our students and the public.” The strategies outlined below will indicate where we are already strong in this respect and identify areas where we can build our capacity to strengthen our students’ understanding of climate change issues and solutions, particularly through experiential learning opportunities.

Education & Research

Inventory of Climate-Change-Related Courses, Programs & Research
Compiling an inventory of sustainability and climate-change-related programs on campus will facilitate assessment of existing and potential courses and programs; help promote current courses, programs, and research; and provide baseline data for a number of other initiatives.

Climate Action Courses & Immersive Experiences
The Office of Sustainability currently provides operational-based projects for select classes on campus. This initiative would expand the current work to a larger audience and provide a foundation for longer-term development of a Campus Living Lab program.

Campus Living Lab Program
The intention of the Campus Living Lab program is to bring undergraduate and graduate students, faculty, and staff together to work collaboratively on applied research projects involving campus operations and activities to address identified campus sustainability issues and challenges.

Integration of Climate Change in Curriculum
The Provost’s Taskforce on Sustainability-Focused and Related Academic Courses and Programs is a key initiative from the CSP to ensure integration of more sustainability-related and focused concepts and sustainability-focused courses into curriculum, including those that are relevant to climate change.

Climate-Change Literacy Assessment
The Sustainability Literacy Assessment will conduct initial and follow-up assessments of the sustainability literacy of a defined cohort of undergraduate students. A subset of this assessment would assess climate-change literacy.

Climate Change Library Collections
The creation of a library collection focused on sustainability will support sustainability-related and focused courses and programs. Part of this collection will be focused on climate change.
Annual Sustainability Summit

An annual sustainability summit will bring together those on campus interested in sustainability issues, showcase both campus wide and individual sustainability-related initiatives, honour achievements with sustainability awards, and facilitate campus sustainability innovation. The theme of the first summit would be climate change.

Community Engagement

The participation and support of students, faculty, and staff will be essential to our success in reducing GHG emissions. We cannot succeed through the application of technology alone. The following community engagement initiatives were designed to develop understanding of the role each of us can play and to provide opportunities for everyone to engage in and collaborate on meeting our target.

Energy Awareness Training

Energy awareness training is currently available to any department or unit on campus. The Office of Sustainability provides this training, and the system is being expanded to include specialized training for students, faculty, researchers, laboratory staff, custodians, Facilities Management Division (FMD) tradespeople, and office personnel.

Building Energy Consumption Awareness

The Energy Management Information System (which is also featured in the “Energy” section below) is a critical communication tool that makes building occupants aware of the current and historical energy use of their facility. The measurement and visual presentation of the energy data in public spaces provides information that can lead to behavioral change that will reduce energy consumption.

Sustainability Awareness in Employee & Student Orientations

A key strategy for education and awareness is informing new employees and students of expectations and goals for energy conservation and efficiency on campus. By including sustainability awareness in employee orientations we make new staff aware of the university’s commitment to GHG reduction and the ways in which they can be involved.

Green Champions

Green champions would be a peer-to-peer network of sustainability champions across campus that support and facilitate sustainability in the various workplaces, colleges, or residences. These champions, who would include students, faculty, and staff, would act as liaisons with the Office of Sustainability, which would provide them access to resources and opportunities to save energy, water, and reduce waste.
Greenhouse Gas (GHG) Emissions Mitigation

Energy

Energy consumption on campus accounts for over 90% of university emissions. The energy strategies listed below are vital to achieving substantial emission reductions on campus to meet our target. All of the strategies listed in this section are supported by the community engagement and education initiatives.

Energy Management Plan

The Energy Management Plan will formalize the university commitment to energy management. It will set an energy vision, develop energy reduction targets for the university, and guide the implementation of various energy saving actions.

Retro-Commissioning

The retro-commissioning process identifies facility operational changes and improvements that can contribute to reduced energy consumption and GHG emissions. By focusing on current occupant requirements, we will ensure existing equipment and systems are operating at peak efficiency.

Space Management & Schedule Optimization

As part of this initiative, space management and room scheduling processes will be reviewed in order to develop and implement new room scheduling strategies and policies that optimize building use. The objective is to maximize efficient use of space and ensure the campus footprint is optimized to support unit initiatives. The development of a comprehensive space management plan is identified in FMD’s Third Integrated Plan.

RenewUS

RenewUS is a program designed to address critical capital renewal and deferred maintenance deficiencies and align them with academic program renewal in our core campus. It is anticipated that this renewal of facilities will provide opportunities for energy conservation and improved efficiency and productivity.

Green Building Standards

Adopting green building standards will lead to the implementation of mechanisms to ensure all future major capital construction projects on campus meet the highest possible Leadership in Energy and Environmental Design (LEED) certification. It is proposed that a University of Saskatchewan Sustainable Development and Stewardship Policy be implemented. In would in part, require all major capital projects (new construction and renovation valued over $500,000) to achieve a minimum level of LEED Gold certification. This minimum standard would be reviewed periodically and increased over time to ensure progress towards an ultimate goal of net-zero emissions from new buildings.

2010 Greenhouse Gas Inventory Highlights

- The university emitted 161,000 MT eCO₂ in 2006/07 and 165,300 MT eCO₂ in 2009/10, a 2.6% increase overall.
- Consumed electricity is the largest major source of emissions, accounting for 57–58% of all emissions from 2006/07 to 2009/10.
- Year-to-year campus emissions have increased by 2.0% (2007/08) and 4.4% (2008/09) and decreased by -3.6% (2009/10).
- Emissions per square metre (kg eCO₂/m²) increased minimally (0.6%) from 324.4 in 2006/07 to 326.3 in 2009/10.
LEED EBOM

The Leadership in Energy and Environmental Design for Existing Building Operations and Maintenance (LEED EBOM) program is designed to certify the sustainability of operations of existing commercial and institutional buildings. The program encourages owners and operators to implement sustainable operation and maintenance practices, and to reduce the environmental impact of their buildings. This initiative would establish LEED EBOM as the standard for university building operations and maintenance practices.

Energy Management Information System

An energy management information system is a performance management system that provides energy performance information to FMD and to building occupants. Access to this information will allow various constituents on campus to take effective action to manage our overall energy. It will create financial value for the university through effective operations management and control of energy.

Energy Supply

A key component of our strategy to reduce GHG emissions on campus involves serious consideration of our current energy supply. The first step is the development of a feasibility study on clean energy solutions for the university.

Efficiency Upgrades

As campus renewal work is required, FMD has has been dedicated to ensuring more efficient technologies and systems are installed. As equipment is replaced, more efficient systems will continue to be installed to provide cost savings and GHG reductions.

Lighting Retrofits (Phase 2)

The university initiated a comprehensive lighting retrofit program in 2007 to replace over 29,000 light fixtures on campus with more energy-efficient ones. In Phase 2, the plan is to continue this momentum with strategies to reduce light usage in unoccupied spaces; remove fixtures in certain areas; retrofit gym, street, and pedestrian lighting with more efficient technology; and implement retrofits for all Consumer Services operations.

IT Energy Audit & Management Strategy

Electrical energy intensity on campus has been steadily increasing over the past 20 years. Some of this increase is due to increased use of desktop computers and IT equipment. This initiative would involve an audit of energy consumption associated with IT on campus and produce a strategy to maximize energy efficiency while maintaining IT services to the campus community.
How our students, faculty, and staff travel to and from campus greatly impacts overall GHG emissions. Due to optional reporting of Scope 3 emissions and difficulty in assessing commuter transportation, only business-related travel and university-owned vehicle emissions are included in the GHG inventory. Nonetheless, the reduction of GHG emissions related to all transportation choices associated with the university is important. The following initiatives have the added benefits of improving health and safety and reducing demand for parking.

Transportation Demand Management
A campus-wide transportation demand management study was recently initiated to create a baseline and facilitate the implementation of more sustainable transportation options for commuters. The study will include a number of considerations:

• Creating a baseline inventory of existing conditions for all modes of transportation
• Providing varied and flexible transportation options
• Focusing on non-motorized transportation and public transit as better choices
• Encouraging carpooling, car sharing, bicycle sharing, and ride matching
• Enhancing paths and routes for bicycles and pedestrians
• Promoting the health, fitness, and productivity benefits of choosing non-motorized transportation options as a means to enhance employee retention and recruitment
• Reducing demand on roads and transportation costs by reclaiming valuable space from parking

Encouraging alternative transportation choices for campus will require assistance through strategic planning and operational practices. Real and perceived barriers to choosing alternative transportation options need to be identified so that suitable measures can be taken to remove those barriers.

Eco-Pass
The Eco-Pass program provides university employees with Saskatoon Transit passes at reduced rates.

By Brandon Giesbrecht
The Eco-Pass program provides university employees with Saskatoon Transit passes at reduced rates.
UCommute

The Office of Sustainability developed and piloted the UCommute ride-sharing system (usask.ca/parking/sustainability/carpooling.php) on campus in 2011. Parking and Transportation Services is working towards full-scale implementation and continued development of this service. The system encourages ride-matching and carpooling for employees and students through an easy-to-use web interface.

University Business Travel

A recent university initiative will see all business travel processed through a central system. Among other efficiencies, this will allow emissions to be tracked more easily and will help ensure other alternatives, such as video conferencing, have been considered.

Enterprise CarShare

Enterprise CarShare (usask.ca/parking/sustainability/wecar.php) is a membership-based car sharing program that provides cost-effective use of vehicles and an environmentally friendly transportation alternative for all members of the campus community who choose not to bring their own vehicle to campus. It also encourages students living in residence to leave their vehicles at home.

Pay-Per-Use Parking Option

Currently, staff and faculty pay for parking monthly through payroll deductions. A pay-per-use strategy would allow employees to pay by the hour in staff parking lots, and only when they need parking. This offers a cost-saving option for staff who chose to use alternative transportation for the majority of the time, yet still gives them the flexibility to bring their own vehicle when they need it.

Anti-Idling Policy

Guidelines governing idling of university vehicles, non-university service vehicles, and privately owned vehicles on campus should be developed and implemented. Increased signage, improved education, and stricter enforcement of University Traffic Bylaws should also be implemented.

University Fleet

The university fleet comprises a large part of measurable Scope 3 emissions. Education programs and policy changes can ensure the fleet is operated in the most efficient manner. Proper maintenance will ensure fleet vehicles operate at peak efficiency, and the most sustainable vehicles possible should be selected for fleet renewal.
Waste Minimization

Waste produces GHG emissions when it is disposed of in a landfill. Landfills generate methane gas, which is 22 times more potent than carbon dioxide as a greenhouse gas. While recycling redirects material from the landfill to be used in new products, the university is also committed to practicing the first two Rs—reducing and reusing—to minimize waste produced on campus and make the most efficient use of campus assets.

Composting

This initiative involves the development and implementation of a comprehensive food waste composting strategy for the campus. Organic waste accounts for approximately half the total waste generated by the university, therefore composting is key to waste minimization and GHG reduction.

Reusable Container Discounts

Culinary Services currently provides a 10¢ discount at all outlets for patrons who use a reusable beverage container. The Office of Sustainability and Culinary Services continue to educate the campus community about this program and encourage people to decrease the wasteful use of disposable cups.

Water Stations

To reduce the purchase of single-use bottled water containers, ten bottle-filling water fountains are being installed throughout campus. These will improve access to clean drinking water without the need to purchase bottled water. A new “bring your own bottle” (BYOB) mobile water station (for use indoors and at outdoor events) will filter and cool 44 litres of municipal water using less than 90 watts of power, providing a more sustainable and cost-effective alternative to purchasing bottled water.

Hazardous Material Inventory Management System

A comprehensive laboratory material inventory and management system for all university laboratories is being investigated. This initiative will reduce university hazardous waste volume and associated management costs.

Recycling

Campus Recycling operates a single-stream recycling system that collects items like plastic, paper, glass, metals, batteries, electronics, and light bulbs. All internal departments and units are involved in waste reduction, and recycling is becoming business as usual.

Toner Cartridges

Toner cartridge recycling will be expanded internally to larger areas of campus through the office supplies contract to ensure more consistent availability.
Electronic Waste
It is essential that electronic waste generated on campus is properly recycled and/or reused in a responsible manner and in accordance with our disposal of surplus assets policy.

Construction & Demolition Waste
Construction and demolition waste from campus projects is not currently captured in the regular waste stream. The current target is to divert 50% of construction and demolition waste from the landfill for all minor and major capital projects. Some major capital projects on campus that have sought LEED certification have diverted over 90% of their waste from landfills.

Purchasing

Sustainable Purchasing Guides & Checklists
Sustainable purchasing guidelines and checklists are already available on the university website (usask.ca/fsd/colleges_depts_research/buying_goods/sustainability) and many are in the process of being updated. These documents provide information to assist the campus community in making sustainable purchasing choices.

Electronic Product Environmental Assessment Tool (EPEAT)
Certified Equipment
Various campus departments currently have procedures to encourage the purchase of EPEAT computers and monitors. EPEAT is a system that helps purchasers evaluate, compare, and select electronic products based on their environmental attributes. A formal campus-wide policy for all departments and units would ensure consistency across campus.

Paper
Green office supplies are available through our contracted office supplies provider. This includes various options for more sustainable paper, including paper with 50% and 100% post-consumer content. Departments and units are encouraged to select the highest recycled content and we are working towards a stated purchasing preference for the university.

Vendor Code of Conduct
Beginning with the development of basic principles, this initiative would segue into the development and implementation of a vendor code of conduct, which would define the university’s expectations regarding the social and environmental conduct of our vendors.

Supplier Packaging Reduction
Major university suppliers are investigating options to reduce the amount of packaging received on campus. Use of tote boxes, reduction

Our target is to divert 50% of our construction and demolition waste from the landfill. Some major capital projects have far exceeded that:

- Law – 91%
- University Learning Centre – 82%
- Health Sciences E Wing & D Wing – targeting 75%
of packaging, and return of packaging are all possible options that will be reviewed.

**Sustainability Policy for Culinary Services**

Culinary Services will develop a sustainability policy for their vendors and partners that will outline the direction in which the university and Culinary Services are moving with respect to sustainability initiatives.

**Campus Sustainability Revolving Fund**

A University of Saskatchewan Campus Sustainability Revolving Fund is a key strategy to provide a consistent and available source of funding for climate action and sustainability-related projects. The idea behind a revolving fund is simple. An initial sum of money is set aside (seed funding) to finance sustainability-related projects that will result in quantifiable monetary savings or return. A portion of this return is reimbursed to the fund until the initial project funding has been paid off. The money is then reinvested in other projects. The university’s fund is currently under final stages of development. The revolving fund will consider GHG emissions and the cost of carbon in project and program evaluations.

**Implementation Structure**

The implementation of the CAP will occur as part of the Third Integrated Planning cycle. It is a key initiative from the draft CSP and therefore its implementation is a high priority. Numerous CAP strategies and actions are already underway, including WeCar, the transportation demand management study, building energy consumption awareness, LEED EBOM, and climate action-related course projects. As each strategy is developed, further analysis will be required to evaluate overall benefits, costs, possible synergies, and links with other programs.

The timeline for subsequent plan updates will be offset by two years from the campus Integrated Planning cycle. Therefore, the CAP updates will be scheduled for 2014 and 2018. The GHG inventory will be updated regularly and new reports will be written every two years. CAP’s implementation progress will be monitored and the GHG Inventory will provide feedback on progress towards our GHG reduction goals.
Communication Strategy

Along with numerous community engagement strategies, a key component in the success of our GHG reductions initiatives will be the communication strategy. The activities of the CAP planning team are currently communicated through the project website (usask.ca/climateaction). The Office of Sustainability is also committed to improving the sustainability presence online through enhancements to the main university and Office of Sustainability websites and by using social media. In addition to website communication, sustainability events and initiatives will be publicized on campus using the communicator network, PAWS, On Campus News, On Campus Now, USSU Communications, display screens, etc.

Conclusion

Through the UCPCCS, Canadian institutions of higher learning have identified their responsibilities to be leaders in the area of climate change. Not only will the adoption and implementation of this CAP satisfy our commitments under the UCPCCS, it will move the University of Saskatchewan towards a more sustainable future. Demonstrating our commitment will also strengthen our institutional reputation on climate change action and thereby enhance recruitment and retention of students, faculty and staff. By addressing research, education, and operations in a comprehensive strategy to catalyze solutions for climate change, the greater community will look to the University of Saskatchewan as a credible and responsible leader.