The University of Winnipeg
Campus Sustainability Report

April 1, 2007 – March 31, 2008
Fiscal Year 2007

Campus Sustainability Office

Contents

Acknowledgments

The following individuals have contributed directly or indirectly to the development of the sustainability management system and its attendant report(s) and proposals during the last fiscal year:

Members of Campus Sustainability Council:

Vivian Belik – SUNSET
Danny Blair – Geography
Michael Boyd – Director, Information Technology, DCE
Bill Buhay – Department of Geography, C-FIR
Mark Burch – Director, Campus Sustainability Office (Chair)
Len Cann – Assistant Director, Engineering and Maintenance
Maura Champagne – Bookstore Manager
Steve Coppinger – Retired
Alan Diduck – Director, Environmental Studies
Jino Distasio – Director, Institute of Urban Studies
Michael Dudley – Research Associate, Institute of Urban Studies
Kate Dykman – SUNSET Coordinator
Mike Emslie – Auditor
Lesley Gaudry – Research Assistant, CSO
Jennifer Janzen – Collegiate
Sandy Klowak – EcoMAFIA
Alana Lajoie-O'Malley – Special Research Assistant
David Merredew – Campus Sustainability Research Assistant
Jackie Mikolash – Library
Gerald Munt – Director, Institutional Analysis
Jennifer Rattray – Director, Strategic Initiatives (President's Office)
Laurel Repski – VP, Human Resources, Audit and Sustainability
Kisti Thomas – UWSA
Mike West – Collegiate

Members of the Academic Initiatives Working Group:

John Anchan – CTLT
Vivian Belik – SUNSET Student Representative
Danny Blair – Department of Geography, PARC, Global College
Bill Buhay – Department of Geography.
Mark Burch – Director, Campus Sustainability Office (Chair)
Alan Diduck – Director, Environmental Studies Program
David Fitzpatrick – Kinesiology
Leslie Gaudry – Research Assistant, CSO
Samantha Howden – Education Student
Jennifer Janzen – Collegiate
Ken McCluskey – Education
David Merredew – Campus Sustainability Research Assistant
Don Metz – Education Department
Amanda Tetrault – Instructor, Education
Mike West – UW Collegiate

Members of the Materials Conservation (Waste Reduction) Working Group:

Bill Buhay – Department of Geography.
Mark Burch – Director, Campus Sustainability Office (Chair)
Len Cann – Assistant Director, Engineering and Maintenance.

Barbara Doran – Human Resources
Leslie Gaudry – Research Assistant, CSO
Sandy Klowak – EcoMAFIA
Lynn Jones – Director, Student Life Services.
David Merredew – Campus Sustainability Research Assistant.
Jackie Mikolash – Library
Matthew Russell – Student Representative, EcoMAFIA.

Members of Policy and Procedure Writing Working Group:

Michael Boyd – Director, Information Technology, DCE
Mark Burch – Director, Campus Sustainability Office (Chair)
Steve Coppinger – Retired
Mike Emslie – Auditor
Leslie Gaudry – Research Assistant, CSO
Art Ladd – Student
David Merredew – Campus Sustainability Research Assistant
Gerald Munt – Strategic and Budgetary Priorities

Members of the Social Marketing Working Group:

Mark Burch – Director, Campus Sustainability Office (Chair)
Kate Dykman – SUNSET Coordinator
Robyn Erikssen – CKUW
Patricia Fitzpatrick – Geography
Lesley Gaudry – Research Assistant, CSO
Naniece Ibrahim – Communications
Jennifer Janzen – Collegiate
Linda Palmer – Director, Special Events
Sara Perlmutter – Student / RCM rep
Jennifer Rattray – Director, Strategic Initiatives
Ted Turner – UWSA Outreach Coordinator

Members of the Social Sustainability Working Group:

Mark Burch – Director, Campus Sustainability Office (Chair)
Kate Dykman – SUNSET Coordinator
Lesley Gaudry – Research Assistant, CSO
Leah Gazan – Education
Suzanne Martin – Education
Joel Novek – Sociology
Alan Wiebe – Education

Members of the Sustainable Transportation Working Group:

Mark Burch – Director, Campus Sustainability Office (Chair)
Amanda Davis – UWSA Student Representative
Jino Distasio – Director, Institute of Urban Studies
Michael Dudley – Research Associate, Institute of Urban Studies
Arne Elias – Director, Centre for Sustainable Transportation
Leslie Gaudry – Research Assistant, CSO
Sherman Kreiner – Director, UWCRC
David Merredew – Campus Sustainability Research Assistant
Laurel Repski – VP – HR, Audit and Sustainability
Neil Sander – Kinesiology and Applied Health
Hugh Swan – Executive Director, Facilities Management
Kisti Thomas – UWSA Rep.

Leslie Uryriniuk – Printing and Parking Services
Marc Vachon – Department of Geography
Terry Zdan – Research Director, Centre for Sustainable Transportation

Members of the Sustainability Champions:

Soham Baksi – Economics
Melanie Barton – Bookstore
Deb Bradlely – Education
Geri Breddam-Taylor – Collegiate
Joanne Boucher – Politics
Enid Brown – Kinesiology and Applied Health
Bill Buhay – Geography
Jessica Burleson – DCE
Len Cann – Physical Plant
Jim Christie – Theology
John Derksen – Menno Simons College
Alan Diduck – Environmental Studies
Linda Dietrick – French and German Studies
Michael Dudley – Institute for Urban Studies
Nancy Folliott – UW Foundation
David Hewlett – Drama / Theatre
Gary Hollingshead – Technology Solutions Centre
Louise Humeniuk – UW Foundation
Jennifer Janzen – Collegiate
Cathleen Jeanson – Human Resources
Karen Jones – Biology
Dara Klym – Safety Officer
Randy Kobes – Physics
Doris Kuzma – Financial Services
Colleen Little – DCE
Suzanne Martin – Education
Shauna MacKinnon – Student Services
Jackie Mikolash – Library
Kim Monson – Geography
Tobia Neufeld – President's Office
Joel Novek – Sociology
Ernest Prokopchuk – Chemistry
Rita Prokopetz – DCE
Martin Robson – Human Resources
Erin Stewart – DCE
Ross Stokke – Mathematics and Statistics

Executive Summary

This document represents The University of Winnipeg's second campus sustainability report. Because the Sustainability Management System is still under development there is incomplete data for some indicators. This report continues the regular cycle of reporting first commenced in FY2006, and can provide substance for strategic planning and budget decision-making. This report addresses campus sustainability *performance* against targets within the scope set for the management system. It does not contain detailed information about all sustainability initiatives, proposals or projects which have been submitted to Senior Administration under separate cover. Key highlights from FY2007 include:

- **Academic Initiatives –** A number of projects were undertaken which spring from the academic life of the university including establishing a Sustainability Recognition Award for faculty, staff and students who make noteworthy contributions to campus sustainability, as well as a number of research activities intended to introduce more sustainable teaching technologies such as on-line course outlines, on-line exams, and a proposal to assemble best practice information about sustainable teaching and learning techniques.
- **Air Quality Management** – The university achieved a 5.5% *decrease* in emissions from natural gas, a 34.6% decrease from fleet vehicle fuel emissions, and a 79.3% decrease from better management of its organic waste stream. Counterbalancing these improvements was a 3.5% *increase* in emissions from electricity and a 108.5% increase from staff travel the latter being partly due to a more effective system for capturing data on staff travel and a more complete data set for FY2007 than was available in FY2006. Aggregately, university GHG emissions *dropped* by 1.0%--a modest but desirable improvement considering that there were 8.0% more Heating Degree Days in FY2007 than in FY2006, indicating a harsher winter overall. To achieve the university's Kyoto Protocol commitment by the 2012 deadline, total GHG emissions must decrease by 793 tonnes CO_2e, or 18.9% from FY2007 levels.
- **Energy Conservation** – Overall energy consumption *decreased* 3.5% over FY2006, partly attributable to somewhat lower enrollment and also having T21 and Wesley untenanted while undergoing renovations. However, FY2007 was a significantly colder winter than FY2006, hence placing increased demands on electricity, so the net overall reduction is a noteworthy achievement. The university currently meets almost 44% of its energy needs from renewable (hydroelectric) sources.
- **Green Procurement** – Green procurement guidelines and policy are now being included with all RFP packages sent to vendors for major university contracts. Sustainability requirements were also introduced to the Imaging Technology Contract review process, the Cleaning Services review process, and negotiations continue with Chartwells, the university's food services vendor to introduce compostable food service ware in campus food service outlets, hence reducing waste going to landfill and GHG emissions arising from organic waste materials. Negotiations have also been opened with Emerge Environmental Information Solutions, Inc. to develop an internet-based on-line procurement tracking system.
- **Land Use Planning and Property Management** – An addition to the Duckworth Centre was completed adding energy efficient classrooms, a fitness centre, and the Soma Café. Moreover, the Portage Commons landscaping project was completed, while work progressed on renovations to the Theatre Building (T21), and Wesley Hall, both of which should see completion in FY2008. Contracts for all these projects were initialed prior to the Provincial Green Building Policy which mandates LEED Silver performance ratings for new public buildings receiving Provincial funding. Nevertheless, all building projects attempted to "shadow" LEED requirements to the greatest extent achievable within the project budget and limitations presented by each site. It is also expected that construction work will commence on the Richardson College for the Environment, the Langside Student Residence and the UWSA Day Care Centre in FY2008.

- **Materials Conservation (Waste Reduction)** – Major progress has made on the waste reduction (materials conservation) front at the university with marking a 26.3 *decrease* in overall waste generation, a 13.6% *increase* in materials diverted to recycling, and an overall 48.3% *decrease* in waste going to landfill. In FY2007, the university also instituted battery recycling, toner cartridge recycling, and pre-consumer and yard waste composting initiatives which have also reduced the waste stream to landfill. Finally, the Bookstore and Library both continue with waste reduction initiatives aimed at recycling / reselling textbooks, reducing return rates, and using just-in-time inventory control on production of course packages for courses to reduce waste of printed matter. The Print Shop has also managed to trim 2 million impressions from the copying total in FY2006 of 17 million impressions, reducing it to 15 million in FY2007 achieving both resource and financial savings.
- **Social Sustainability** – Work continued to develop a social sustainability policy framework for the university and move toward specifying a scope, aspects, and goals for such a policy. Concurrently, the university continually engages the community and the surrounding neighborhood through its Innovative Learning Centre, Global Welcome Centre, Wiichiiwaakanak Centre, Education Mentorship and Service Learning initiatives. Significant contributions to sustainability education and on-campus activism have also been made by the USWA, EcoMAFIA, and SUNSET student organizations, and faculty and students of The University of Winnipeg Collegiate.
- **Sustainable Transportation** – Promotion continued of a carpooling / ride-sharing registry on campus, work to develop a major proposal for an Integrated Transit Hub which will combine amenities for cyclists and walkers with inter-modal connectivity to Winnipeg Transit, a market research study for the Transit Hub, inclusion of dedicated bike lanes to the Greenway development program, a parking rate increase, new data collection procedures to better track staff and faculty travel on university business and continuing efforts to develop collaborative partnerships with community organizations such as Bike To The Future, One Green City, and the Active Living Coalition. The university has also received funding from Climate and Green Initiatives Manitoba to undertake the initial design and class-C estimate for its Integrated Transit Hub project.
- **Water Use Management** – Water consumption increased nearly 19% in FY2007 over the previous year in spite of the fact that two buildings (T21 and Wesley Hall) were undergoing significant renovations that affected their occupancy levels, the university had a drop in enrolment and measures were instituted to reduce water use in boilers and cooling towers. Water use patterns continue to be erratic and these will be investigated in the coming year.

While the University's performance on quantitative measures of sustainability is something we can all look forward to improving, major accomplishments can be cited in terms of management system development, employee and student involvement, and completeness and accuracy of data gathering and reporting systems. A solid foundation is being constructed for future achievements provided the financial and human resources can be assembled for action.

Environmental Sustainability Performance

The data reported below reflect the as yet incomplete development of the university's sustainability reporting system. The performance report below is organized by policy area and subject to the scope of the Campus Sustainability Policy.

Scope

The scope of the Sustainability Management System, and hence the scope of this report, includes:

1. All physical facilities and buildings owned and managed by The University of Winnipeg including all future acquisitions of real properties which come to be owned and managed by The University.
2. All physical facilities and buildings, or spaces within facilities or buildings, leased or rented by The University of Winnipeg, and over which The University can reasonably influence the sustainability performance of the facility.
3. All routine activities, programs and operations of The University of Winnipeg, whether on or off campus, and including staff, faculty and student travel, both directly on behalf of the University in conducting its operations and programs, or commuting of staff, faculty and students to and from their places of residence for purposes of work, teaching, research, study, recreation or any other University activity.
4. All activities, programs or special events which may from time to time be hosted by The University of Winnipeg, or for which the University may provide physical facilities, active partnerships, or other support when such programs or events are offered by institutions, groups, corporations or organizations that are not formally recognized as part of the University community.
5. All "arms length" agencies, corporations, institutes, research centers or other entities, to which University policies may generally apply.

Reporting Period

This report is for the period FY2007.

The Campus Sustainability Office

Mission and Mandates

The mission of Campus Sustainability Office (CSO) is to catalyze, facilitate, support and provide leadership to all university departments and organizations in the development and continuous improvement of a Campus Sustainability Management System. This mission is operationalized through specific mandates which include:

- Providing leadership, facilitation support, and organizational strategic support to all university departments in the development and implementation of a sustainability management system;
- Providing overall planning, coordination and reporting capacity for the Campus Sustainability Council and all of its Working Groups, Committees or special task groups;
- Constructing, maintaining and continuously improving the university's sustainability performance monitoring and reporting systems and preparing reports for internal and external stakeholders;
- Assisting with and supporting documentation of university policies, procedures, plans, and performance reports consistent with the requirements needed for eventual ISO 14001-2004e certification;
- Collaborating on and supporting the development of research programs, educational events, resource materials and other supports to sustainability education, staff / faculty / student sustainability awareness and action;
- Providing a focus for expert consultation, support to senior administration, contact for external agency liaison functions, and support to university communications on sustainability matters;
- Participating as required and appropriate in the design and construction process of new university facilities and/or the renovation of existing facilities as these activities may affect sustainability performance or compliance with university and Provincial Green Building policies;
- Providing support to the university in achieving regulatory compliance on matters or operations pertaining to environmental regulations, statutes or reporting requirements and management of risks to the environmental arising from university operations.

Professional Staff

The Campus Sustainability Office is currently staffed by a part-time (.6) Director, and a part-time (.5) Research Assistant. A great deal of the work of the CSO involves volunteer efforts by faculty, staff and students from many departments and programs.

Key Activities and Achievements in FY2007:

Providing Leadership, Facilitation and Planning Coordination –

- The **CSO provides general secretariat functions** to the Campus Sustainability Council (24 members, meeting monthly) as well as its various Working Groups which include the Academic Initiatives Working Group (15 members, meeting monthly), the Materials Conservation Working Group (10 members, meeting monthly), the Policy and Procedures

Working Group (8 members, meeting biweekly), the Social Marketing Working Group (11 members, meeting bi-weekly), the Social Sustainability Working Group (7 members, meeting monthly), the Sustainable Transportation Working Group (15 members, meeting bi-weekly), and the Campus Sustainability Champions (36 members, meeting 3 times per academic year). All of these bodies are chaired by the Director, Campus Sustainability Office, with the exception of the Sustainability Champions who are chaired by the CSO Research Assistant.

- **Collaborative Work With Student Organizations** On-going collaboration and articulation of the activities of the Campus Sustainability Office with student-led initiatives and groups including the UWSA, EcoMAFIA (EcoPIA), SUNSET and GESA so that all can be maximally effective.
- **Introduction of a Sustainability Spending Account** In collaboration with the Human Resources Department, instituted a Sustainability Spending Account as a supplement to the Health Spending Account available to all employees for purchasing bus passes, carbon off-sets or other sustainability-positive life-enhancements.
- **Green Job Descriptions** In collaboration with the Human Resources Department, established a protocol that revisions to job descriptions will include qualifications and duty specifications as appropriate to the position that reflect sustainability and / or environmental competencies as qualifications for hiring and employment. Specific amendments were made to the job descriptions for the Purchasing Agent to include expertise in green procurement, and to the position description for the Assistant Vice-president, Financial Services for expertise in sustainability management. In addition, a variety of sustainability objectives have been included in the duty rosters for cleaning and maintenance staff.
- **Green Special Events Planning** Offered specific recommendations to the Marketing Coordinator, Facilities and Events, respecting methods of greening campus special events planning and services, February 2008.
- **Green Building Input to Soma Café** Provided specific recommendations on green building, equipment and operational features to the UWSA during the construction and start-up phase of the Soma Café, December 2007.

Monitoring and Reporting Sustainability Performance –

- **Sustainability Reporting** Developed and began implementation of sustainability indicator reporting templates for each of fourteen university departments which provide for systematic collection and reporting of sustainability performance data and provide the foundation for sustainability action planning.
- **Automated Internet-based Sustainability Reporting** Opened negotiations with eMerge Environmental Information Solutions, Inc., a Winnipeg-based and internationally recognized reporting systems software developer to begin a beta-test collaboration to develop a comprehensive, automated, web-based sustainability reporting system. This collaboration holds considerable promise in developing software which will be of use to other large post-secondary institutions in developing sustainability management systems of their own, the possibility of sharing intellectual property rights, and the potential to seamlessly integrate UW systems with Provincial and Federal reporting requirements on-line.
- **Performance Data Collection and Analysis** Developed an Excel-based spreadsheet system for collecting and analyzing data on university waste reduction performance, utilities records, water consumption, and travel information. Archival information was added to these databases for previous years back to 2000, if available.

- **Kyoto Protocol Compliance** Prepared a briefing paper on progress toward, and the university's current posture with respect to, Kyoto Protocol compliance by 2012. The paper outlined a variety of strategies by which compliance might be achieved, and offered estimates of how expansion of university facilities will likely affect compliance.

Documenting Sustainability-relevant Policies and Procedures –

- **Green Building Reporting Protocol** In collaboration with the Director of Facilities Management, the CEO of the University of Winnipeg Community Renewal Corporation, and Assistant Director, Physical Plant, developed and implemented a Green Building Reporting Protocol which assures that green building achievements are reported to the CSO, and that all regulatory reporting requirements for green building are being met with the province and other regulatory authorities.
- **Procedure Documentation** The CSO has partially completed documentation of its own internal procedures for calculating GHG emissions, collecting data for sustainability reporting, and for managing general office operations.
- **Carbon Off-set Purchase Procedure** Drafted a procedure for procurement of carbon off-sets for reimbursed travel of faculty, staff and students.
- **Travel Reporting Procedure** Drafted and implemented a procedure for reporting reimbursable travel distances and transportation mode information from Financial Services thus allowing accurate calculation of travel-incurred GHG emissions and procurement of appropriate off-sets as required.

Collaborating and Assisting with Research Projects, Resource Materials and Events –

- The CSO created a new sustainability training pamphlet for orientation of new employees as well as **information sheets on Recycling, Composting, Active Transportation and the U-Pass Transit program** for students for distribution during Spring Registration 2008.
- In collaboration with Dr. Bill Buhay (Geography), and Ambient Empire Productions, developed a **sustainability awareness video (*Green Futures, Green Campus*)** and public service announcements for student orientations, classroom presentations, and general promotion activities.
- The CSO offered two **workshops about campus sustainability programs** during the general Orientation Week leading to the start of the Fall academic semester in September.
- Offered a variety of **classroom presentations and progress update presentations** to faculty and administrative staff on sustainability issues, policies and practices.
- Provided collaborative **input to the development of faculty supervised and student executed research projects** on improving the efficiency of the on-campus blue box recycling program, a special study (still to be completed) on the destinations and fates of recycled materials collected at the university, and a major research project on the ecological footprint of teaching, learning and committee work together with creation of a best practices compendium of green teaching methods.
- **Coordinated and hosted "Green Heart Day"** with the Social Marketing Working Group on 14 February 2008, to promote on-campus recycling and composting. Table top inserts were put in the Riddell Hall, a large composting picture was displayed in Riddell Hall, information sheets were handed out to students in Riddell Hall, and tabling occurred in the Riddell Hall Atrium from the Campus Sustainability Office, and Resource Conservation Manitoba.

- Organized a **Breakfast of Champions** meeting in September 2007 and covered waste reduction issues. Four action sheets were distributed which shared information on toner cartridge recycling, battery recycling, composting, and water bottle use.
- Organized a Breakfast of Champions meeting in November 2007 and presented on Consumerism and Green Holiday tips. Topics such as consumerism, National Buy Nothing Day, Living Gifts, Virtual Gifts, Local Shopping, and the Social Purchasing Portal were highlighted.
- Organized a Breakfast of Champions meeting in February 2008 to discuss recycling and waste reduction efforts through the on campus blue box program and composting efforts. The Growing Local Getting Vocal Food Security Conference was also promoted to members. All Sustainability Champions were also given a copy of the new Green Futures, Green Campus DVD, produced by Ambient Empire Productions for the University of Winnipeg and asked to show at their departmental meetings.
- Tabled a **proposal for a major Omni-TRAX Broe Quest Conference** on the theme of "Human Factors in Sustainability"—a conference focusing on behavioral and attitude change in support of sustainability as a compliment to development of new technology and use of economic instruments to promote sustainability.
- Participated in an initial planning meeting for the **UW Model School Program Development Committee** and offered sustainability-focused input.

Liaison and Communication with External Stakeholders –

- **Liaison Meetings with Other Sustainability Coordinators** On-going meetings between the Director, Campus Sustainability and counterpart sustainability coordinators from other post-secondary institutions in the region to explore ways of cooperating and sharing information in promoting campus sustainability. This collaboration now includes Sustainability Coordinators from the University of Manitoba, Red River College, the Manitoba Lotteries Corporation, the University College of St. Boniface, and Brandon University.
- Participated in two meetings to develop a **Green Development Plan for the City of Churchill,** in collaboration with Churchill representatives, IUS staff, private consultants, and other university faculty.
- **Liaison with Provincial Departments** Periodic meetings between the Director, Campus Sustainability and senior management at Green Manitoba, Manitoba Hydro, Climate & Green Initiatives Directorate, Science, Technology and Energy Manitoba, Transportation and Government Services Manitoba, Conservation Manitoba and the City of Winnipeg as required to promote University of Winnipeg campus sustainability projects.
- **Campus Sustainability Website** Maintenance of the campus sustainability website http://sustainability.uwinnipeg.ca which provides periodic reports on sustainability performance, key initiatives, and information intended to assist members of the university and the community to adopt more sustainable lifestyles and teaching practices.
- **Manitoba Food Charter Adopted** Facilitated the university becoming a signatory to the Manitoba Food Charter, a declaration of principle and common intent to actively support the growth of a more sustainable and locally-based food system.
- **EECOM Partnership Development** Facilitated formation of a partnership between UW and the Canadian Network for Environmental Education and Communication (EECOM)—Canada's leading network of environmental educators, consultants and communicators. The UW also hosted EECOM's national board meeting in March 2008, and strengthened collaboration between EECOM senior executive and the Innovative Learning Centre at UW.

- **Represented the University of Winnipeg in:**
  - The **World Record Walk** which consisted of four planning meetings with CBC and Friends, October 2007;
  - **Extended Producer Responsibility consultations** convened by Green Manitoba to plan waste management programs in collaboration with various industry sectors for paper and packaging, e-waste, household hazardous waste, and tires, April 2007;
  - **Capitol Region Composting Symposium,** a general meeting of stakeholders interested in promoting organics materials management systems for Manitoba in general, and the capitol region specifically, October 2007;
  - Manitoba Chapter of the **Canadian Green Building Council Symposium,** April 2007;
  - Negotiations with Green Manitoba respecting **STAR-Plus Program reporting requirements** needed to continue to secure the university's access to its recycling and waste reduction operating grant from the Province;
  - Repeated meetings with Climate and Green Initiatives Branch of Manitoba Science, Technology, Energy and Mines respecting assistance that might be available for transportation and energy conservation initiatives at the university, April 2007;
  - **Sisler High School Alternative Energy** planning meeting, May 2007;
  - Participated in the formation of the **Manitoba Active Transportation Coalition** in partnership with numerous other provincial organizations interested in promoting active lifestyles, wellness initiatives, and cycling in the province;
  - Planning and development of cycling and active transportation infrastructure for the City of Winnipeg in consultation with Bike To The Future, One Green City, the Active Transportation Coalition, and other community partners;
  - Assisted **St. John's Ravenscourt School** in preliminary planning of sustainability initiatives for their high school;
  - Participated in **Manitoba Climate Change Conference,** Fort Gary Hotel, October 2007;
  - Hosting a visit of senior management representatives from the **University of Prince Edward Island** to review UW sustainability policies and practices to assist UPEI in developing its own sustainability initiatives.

Participating in Development of University Infrastructure and Facilities –

- **Comprehensive Facilities Audit** Initiated process for conducting a comprehensive audit of all core buildings on campus in collaboration with Manitoba Hydro and the City of Winnipeg, UW Physical Plant Department and private sector contractors as required. This audit will address HVAC performance, energy conservation, indoor air quality, water use, and building envelope condition. Successful completion of the audit will enable informed strategic planning of infrastructure renovations, additions and upgrades.
- **Integrated Design Process Participation** Coordinated sustainability input from The University of Winnipeg during the Integrated Design Workshop process for the design of the Richardson College for the Environment, April, May and June 2007.
- **Transit Hub Consultation** Convened a planning charette of 26 representatives from university departments, students, and surrounding institutions and businesses to develop a program planning concept for development of an Integrated Transit Hub, including a Bike Station, May 2007.

- **Imaging Equipment Procurement Process** Continued participation in the Imaging Equipment Committee mandated to prepare EOIs and RFPs for replacement of the university's fleet of imaging equipment and service contracts. Sustainability-relevant input has been offered to this process, together with environmental specifications for equipment and services.
- **Cleaning Contract Review** Continued participation in the Cleaning Contract Review Committee mandated to review performance of the university cleaning services vendor and recommend measures both to green this aspect of operations and/or offer input to the development of a university Cleaning Department, its staff training, procedures, and documentation of operations.
- **UW Development Committee** Participated in the university's Development Committee, offering sustainability input to discussions of the development of capital campaigns for new facilities, and the progress being made on construction of new facilities.

Academic Initiatives and Research for Campus Sustainability

The Campus Sustainability Council includes an Academic Initiatives Working Group charged with developing ways of integrating sustainability elements into the academic life of the university and encouraging high levels of student awareness of, and engagement with, sustainability issues. Naturally, achieving these objectives may have implications for curriculum, but should not be understood in the first instance as aiming to increase the number of environmental *science* courses, faculty positions, or research publications per se. All faculties and departments of the university have a stake in sustainability as it simply refers to ensuring the capacity of human societies and institutions to persist over time within healthy and intact ecosystems—a goal which should be shared easily enough by students of all disciplines.

While there is no specific policy addressing sustainability in the academic life of the university, all administrative policies mention encouraging research and learning activities that have the effect of better equipping our graduates to exercise full and constructive citizenship in a society which must be concerned to develop in ways that ensure the realization of its fullest potentials in the future as well as the present. To this end, during FY2007, the Academic Initiatives Working Group has:

- Developed and implemented an honorary **Campus Sustainability Recognition Award** to be conferred annually at Spring Convocation both to a student and a faculty member / support staff employee who have made noteworthy contributions to the advancement of campus sustainability;
- A **research project is under way to assess the effectiveness of blue-box recycling collection system** intended to generate recommendations about how the efficiency of collections can be improved and loss of recyclable materials to landfill can be curtailed.
- **Market feasibility research was conducted to assess the level of demand for a Bike Station** to provide background information for a design concept and building program proposal.
- A research proposal has been submitted to the **President's Innovations Fund** to hire a fourth year student to investigate the ecological impacts of classroom delivery of instruction and committee work and identify ways of reducing these impacts and publishing a best-practices compendium for use by University of Winnipeg faculty. Another goal of this research is to provide an opportunity for the researcher to present results at a major sustainability conference as well as possibly publish results for use by other post-secondary institutions.
- Developed a proposal for an **On-campus Carbon Off-Set Program** which would involve submitting proposals for capital renovation projects with the potential to reduce GHG emissions to the provincial funding authority. The intent of the proposal would be to create a mechanism directly linking capital improvements and budgets to the GHG emission-reduction benefits using the concept of carbon off-setting to quantify the sustainability benefits obtained.
- A project proposal has been submitted to the **President's Innovations Fund that aims to increase compliance among all members of the university community with newly established composting procedures for organic wastes.** The project includes a suite of contests, promotional activities, and video communication enhancements to promote use of composting facilities.
- The Geography Department has now placed all **course outlines on-line,** thus avoiding printing costs and environmental impacts of printing / paper consumption.
- An **on-line exam procedure was pilot tested** by faculty in the Geography Department with favorable results. The feasibility of extending on-line exams to other courses and departments is being explored.

- The Geography Department also concluded a successful experiment with **on-line submission and grading of term papers** in Human Impacts and Natural Hazards classes in the 2007-08 academic year.

Air Quality Management

University operations affect air quality (IAQ) in a number of ways including, (a) emission of green house gasses (GHG) produced whenever fossil fuels are burned; (b) "fugitive" emissions of small amounts of chlorofluorocarbons (CFCs) from chillers and air conditioning equipment that escape during servicing or from leaking connections; (c) fume hood ventilation exhaust from laboratories; (d) "scents" used by students, faculty or staff. Air pollutants also originate off-campus which affect the quality of air internal to university buildings, a principal irritant being diesel exhaust from the bus station on Balmoral Street. Of these emissions, GHG emissions are certainly the most significant. The university is committed to reduce its overall GHG emissions 6% below 1990 levels by 2012, in conformance with the Kyoto Protocol on Green House Gas Emissions.

For a detailed overview of university performance on all policy-mandated air quality indicators, see Appendix A.

Goals: The Air Quality Management Policy goals of The University of Winnipeg include:

- Strive continuously to achieve high levels of indoor and outdoor air quality;
- Reduce sources of air pollution and actual discharges of air pollutants in and from all university programs and facilities;
- Comply with the Kyoto Protocol by reducing green house gas (GHG) emissions to 6% below 1990 levels by 2012, or achieving the target FY2012 GHG emissions < 0.94(FY1990 GHG emissions).
- Offer a smoke-free campus environment to its students, faculty and staff;
- Strive to establish all its facilities as scent-free spaces;
- Encourage training and research programs which increase awareness and encourage adoption of activities and practices that prevent degradation of IAQ.

Air Quality Performance for FY2007:

GHG Emissions:

The university's GHG emission performance for FY2007 is summarized in the table below and compared to a GHG emission baseline estimated for FY1990 as well as measured performance for FY2006. Since last year, the university achieved a 5.5% *decrease* in emissions from natural gas, a 34.6% decrease from fleet vehicle fuel emissions, and a 79.3% decrease from better management of its organic waste stream. Counterbalancing these improvements was a 3.5% *increase* in emissions from electricity and a substantial increase from staff travel of 108.5%. The "increase" in staff travel emissions may be partly due to a more effective system for capturing data on staff travel and a more complete data set for FY2007 than was available in FY2006. The progress made in avoiding emissions from municipal solid waste is partly attributable to reduced enrollment, but also to a newly established organic waste management program and more vigorous promotion of waste reduction generally.

Aggregately, university GHG emissions *dropped* by 1.0%--a modest but desirable improvement considering that there were 8.0% more Heating Degree Days in FY2007 than in FY2006, indicating a harsher winter overall. We can also be somewhat more confident that these values are valid since the university did not increase the area of its building inventory during FY2007. Additions to the Duckworth Centre and the effect of renovations to Wesley Hall and T21 will not appear on utility bills until FY2008.

Despite obvious signs of progress, 76.8% of emissions arise from use of natural gas and almost 17% from staff travel—a percentage which is likely to increase as a relative share of total

emissions as other sources of emissions come under greater control. **To achieve the university's Kyoto Protocol commitment by the 2012 deadline, total GHG emissions must decrease by 793 tonnes CO_2e, or 18.9% from FY2007 levels.**

UW GHG Emission Performance Summary – FY2007					
Factor	**"Base Year" FY1990**	**FY2006 (% of total)**	**FY2007 (% of total)**	**% change FY2007 over FY1990**	**% change FY2007 over FY2006**
Area Managed (m^2)	74,903	91,750	91,750	+ 22.5	0
Total FCEs	24,675	32,350	30,626	+ 24.1	- 5.3
Heating DD (°C)	5,708	5,443	5,897	+ 3.0	+ 8.0
T. CO_2e from Electricity	310.1	196.8 (4.6)	203.7 (4.9)	- 34.3	+ 3.5
T. CO_2e from Natural Gas	2,676.6	3,410.0 (80.5)	3,223.9 (76.8)	+ 20.5	- 5.5
T. CO_2e from Fleet Vehicles	10.0	10.1 (0.2)	6.6 (0.16)	0	- 34.6
T. CO_2e from Business Travel	393.3	336.6 (7.9)	701.9 (16.7)	+ 78.5	+ 108.5
T. CO_2e from MSW	231.3	285.2 (6.7)	59.1 (1.4)	- 74.5	- 79.3
Carbon Sequestration					
Campus Urban Forest T. CO_2e	No data	No data	- 1.15[2]	n/a	n/a
Total T. CO_2e All Sources	**3,621.3**	**4,238.7**	**4,195.5**[1]	**+ 15.9**	**- 1.0**
Reduction in total CO_2e from FY2007 to meet Kyoto by 2012:			**792.6 (- 18.9%)**		

[1] The contribution that might be made by trees on campus that can sequester carbon and hence off-set total GHG emissions was considered during this assessment. The US Environmental Protection Agency estimates that for fast-growing coniferous trees in the S. E. states, sequestration of carbon ranges from 0.1 to 0.3 tons/acre/year (0.25 to 0.75 T/ha/yr). While the university's "urban forest" consists of 125 mostly deciduous trees of various ages, it is unlikely that they would cover even half a hectare if assembled in one place, growth rates would be lower at more northerly latitudes, and therefore their contribution as a carbon off-set is minimal. http://www.epa.gov/sequestration/faq.html .

[2] Carbon sequestration calculated as 9.18 kg./tree/yr. for urban forest, based on UW campus "tree census" completed in April 2008, of 125 trees of various species. Estimated sequestration rate based on *Canadian GHG Challenge Registry Guide to Entity & Facility-Based Reporting, 2005.* Ottawa, ON: Canadian Standards Association GHG Registries, p. 28.

- No systems are currently in place that return regular or comprehensive air quality assessments. Currently, adequate air quality is assumed to be provided if industry standard ventilation rates are maintained by Physical Plant.

- Air quality complaints are registered with either Physical Plant staff or the university Safety and Health Officer. Summary reports of the number, nature and action taken on air quality complaints are filed periodically to the university's Workplace Safety and Health Committee. Such complaints continue to be dealt with individually depending on circumstances. Pinchin Environmental, Ltd., in St. Boniface, Manitoba, provides air sampling and analysis services for the university. During FY2007, the Safety Office received 15 complaints, 7 of which required testing, and 4 of which are still under investigation.[1]
- The entire University of Winnipeg campus is designated a smoke-free zone, thus going well beyond the smoke-free status required for the interiors of public buildings by City of Winnipeg By-Law.
- In January 2008, Physical Plant staff commissioned a comprehensive inspection of ventilation ducts for dust accumulation, prioritized ducts most in need of cleaning and contracted the cleaning work. This reduces overall dust load in indoor air, reducing the need for cleaning and improving air quality.[2]

Air Quality Management Initiatives for FY2008:

- **Comprehensive Facilities Audit** Discussions have been initiated with Manitoba Hydro PowerSmart and the City of Winnipeg to plan a comprehensive Electrical, Mechanical, Air Quality and Water Audit of all "core" campus facilities which, when completed, will substantially assist the university in planning strategic capital investments that improve IAQ.
- **Provincial Green Building Policy** The Province of Manitoba Green Building Policy mandates that new construction and major renovations to university facilities meet LEED-NC 1.0 or LEED-CI standards "Silver" standards which include use of low VOC (volatile organic compound) materials and finishes thus further improving Indoor Air Quality IAQ.
- **Asbestos Maintenance Activities** On-going asbestos repair activities whenever damage to asbestos containment measures are detected.[1]
- **Scent-Free / Smoke-Free Guidelines** A "scent-free guideline" has been published on the website (http://www.uwinnipeg.ca/index/safety-IAQ) of the university Safety Office which describes the health risks associated with the use of scented personal care products and encourages faculty, staff and students to avoid using them. This guideline was publicized through the E-Board campus announcement system.[1]

Air Quality Management Challenges:

- The Province of Manitoba requires the implementation of asbestos management programs wherever asbestos is currently in service in public buildings. Such a program would include (a) identification of all locations where asbestos is present; (b) assessment of the state of repair of the asbestos containment in place at each location, and (c) asbestos removal if containment has failed. Such a program has not yet received funding from the university's operating budget.[1]
- A number of complaints have been logged regarding dust accumulation on both supply and return air gratings in offices. These gratings are supposed to be cleaned by Bee Clean, the university's cleaning services contractor. Notice has been tendered with Bee Clean to include vent dusting in their cleaning routine.[1]
- Implementing a comprehensive cleaning program for all ductwork in the university would be more cost-effective that spot cleaning priority areas as is the current practice. The university Assistant Chief Engineer estimates the university could save $14,000 annually by implementing this practice.[2]

Energy Use Management

Energy consumption by the university includes electricity, natural gas, fleet vehicle and stationary fuels. Consumption values have been reported for FY2006 and FY2007 for comparison purposes. Regardless of fuel type, energy use has been converted to KwHe (kilowatt hours equivalent) to make year-over-year comparisons easier. Kilowatt hour equivalents are conversions made for different fuel types to express their energy content in a common unit of kilowatt hours rather than gigajoules for natural gas or stationary fuel and kilowatts for electricity. Both *absolute* energy values (KwHe) and *intensity* values (KwHe/FCE and KwHe/m^2) are included. In general, absolute values are considered a more valid measure of sustainability performance, while intensity measures reflect improvements in efficiency but may still involve overall growth in the consumption of energy year-over-year. Finally, the proportion of energy used by the university which is derived from "renewable" sources is reported with hydro electricity being considered a renewable energy source, though not as low-impact as would be wind energy or electricity produced from photovoltaic (PV) arrays.

During FY2007, overall energy consumption *decreased* 3.5% over FY2006. Part of this decrease might be attributable to both lower enrollment and also having T21 and Wesley partially off-line while undergoing renovations. However, FY2007 logged 8% more Heating Degree Days than FY2006, hence placing increased demands on electricity, so the net overall reduction is a noteworthy achievement. The university currently meets almost 44% of energy needs from renewable sources.

For a detailed overview of university performance on all policy-mandated energy management indicators, see Appendix B.

Goals: The Energy Management Policy goals of The University of Winnipeg include:

- Reducing its overall demand for energy of all types;
- Wherever energy is used, that the proportion of renewable energy from local sources increase to a practical maximum relative to all energy used;
- Encourage training and research programs which increase awareness and encourage adoption of more sustainable use of energy.

KwHe by Fuel Type	FY2006	FY2007	% Change FY2007 over FY2006
Electricity (KwH)	14,259,663	14,143,509	- 0.8
Electricity Cost ($ 000)	699.0	649.4	- 7.1
Natural Gas (KwHe)[1]	19,077,781	18,053,726	- 5.4
Natural Gas Cost ($ 000)	684.0	648.4	- 5.2
Fleet Vehicle Fuel (KwHe)[2]	41,563	27,047	- 34.9
Fleet Fuel Cost ($ 000)	No data	2.9	n/a
Stationary Fuel (KwHe)	No data	No data	0
Stationary Fuel Cost ($ 000)	No data	No data	0
Total Energy (KwHe)	**33,379,007**	**32,224,282**	**- 3.5**
Total Energy Cost ($ 000)	**1,383**	**1,301**	**82.0**
% Renewable Energy	42.7	43.9	+ 1.2
Celsius Heating Degree Days	5,443	5,897	+ 8.0
Energy (KwHe) / FCE	1,106	1,052	- 4.9
Energy (KwHe) / m^2	364	351	- 3.6

[1] 1 m^3 natural gas = 10.58 KwH.

[2] 1 Liter gasoline = 9.72 KwH.

Energy Use Management Achievements:

- Additional funding was received to **upgrade electrical and mechanical systems in Wesley Hall** with potential to improve conservation performance.[3] Since Wesley Hall does not have separate utility meters which would allow accurate year-over-year comparisons, determining how much, if any, energy savings has been achieved is technically limited to energy "modeling" studies.
- **Adjustments to operating and management procedures for boilers, chillers, compressors and re-activation of automatic controls** on HVAC systems has achieved an estimated savings of $82,000 in gas and hydro costs over FY2006.[4]

Energy Use Management Initiatives:

- **Comprehensive Facilities Audit** Discussions have been initiated with Manitoba Hydro PowerSmart and the City of Winnipeg to plan a comprehensive Electrical, Mechanical, Air Quality and Water Audit of all "core" campus facilities which, when completed, will substantially assist the university in planning strategic capital investments that improve Energy Use Management performance.
- **Sempa Power** – The university is exploring engaging Sempa Power Inc., on a performance contract basis to install supplemental electric boilers and load management systems that take advantage of off-peak electricity to replace the use of natural gas for space heating. If successful, this initiative promises to reduce both energy costs and help achieve the GHG reduction target required under the Kyoto Protocol.
- **Motion Sensor Light Controls** – Motion and occupancy-activated light switches are being installed in all offices and classrooms beginning with Wesley Hall. This project will take more than one year to complete, but promises energy savings on lighting institution-wide.

Green Procurement

Procurement activities at the university hold much potential for both cost savings and sustainability improvements. Achieving increments in sustainable procurement performance entails several aspects:

- Supplementing current cost tracking systems with additional measures that capture the *masses* and *volumes* of materials and energy consumed by the university;
- Implementing measures to *reduce demand* for materials and energy;
- Identifying goods, materials, products and services that deliver the same utility with less environmental and health impacts and *substituting* them for current choices;
- Implementing *consistent use of life-cycle and full-cost accounting* in making procurement decisions as compared to least-cost purchasing policies.

Currently, the university has good financial data on its procurement activities but little data on masses and volumes of materials consumed. Greening procurement can help assure not only best value for money spent, but also substantial benefits in reducing energy and water use, waste generation, and threats to IAQ, health and safety. Procurement is key to a sustainable university.

For a detailed overview of university performance on all policy-mandated green procurement indicators, see Appendix C.

Goals: The Green Procurement Policy goals of The University of Winnipeg include:

- Continuously reduce demand for…materials…and progressively "dematerializing" University operations and programs.
- Evaluate performance and value of goods, materials and services using full-cost accounting.
- Protect human and ecosystem health;
- Procure goods…that encourage local industries and markets for environmentally preferably products and services..;
- Procure goods…that require less material and energy to manufacture, package, and transport, are durable, reusable, recyclable and use renewable forms of energy during production, transport, delivery and use;
- Encourage training and research programs which increase awareness and encourage adoption of more sustainable procurement practices.

Green Procurement Achievements:

- **Sustainable procurement guidelines** are now being incorporated into all RFPs and service contracts for suppliers and vendors serving the university.
- **Imaging Technology RFP Requirements** A rigorous set of sustainability requirements have been included in the RFP for the purchase / replacement of the university's entire stock of imaging technology equipment (fax machines, printers, scanners, photocopiers, etc.).
- **Tracking Quantitative Information on Procurement** The Shipping and Receiving Department has started collecting information on the masses and volumes of materials received by and discharged from the university. This procedure still requires some

refinement, but it marks significant progress toward a mass/volume-based procurement tracking system.

- **Cleaning Service RFP Requirements** Sustainable procurement requirements have been incorporated in both potential RFPs and service design parameters for Cleaning Services on campus.

Green Procurement Initiatives:

- **A procurement reporting template** is being developed which will enable procurement reporting according to the goals identified both in the university's Campus Sustainability Policy and specifically, in its Green Procurement Policy;
- The university is engaging as a **beta-test partner with Emerge Environmental Information Solutions, Ltd.,** to develop a fully automated on-line sustainability reporting system, including procurement reporting.
- Data has been gathered which will allow compilation of a **list of large dollar volume vendors** and assessment of the environmental sustainability of the products and services which represent the greatest share of university procurement. Following this assessment, a list of product / service alternatives can be prepared, if required.

Green Procurement Challenges:

- Understaffing of the Purchasing Department insofar as staff redundancy is insufficient to allow for professional development respecting green procurement policies, procedures and product / service alternatives.
- Procurement authority dispersed to university departments increases the challenge of training all those with procurement authority in green procurement practices.
- The need for an integrated information management system that allows ready access to accounts payable data for purposes of green procurement tracking.

Land Use Planning and Property Management

The renovation and maintenance of the university's existing facilities infrastructure is virtually synonymous with making progress on the "bricks-and-mortar" side of the sustainability equation. While this is only part of how the university will meet the overall sustainability challenge facing our society, it is nevertheless a critical part.

When constructing new facilities, it is relatively easy to achieve large gains in sustainability performance at little additional cost at the margin. Paradoxically, however, each new building added to the stock of facilities also adds to the university's "ecological footprint", regardless of how efficient the new facility may be.

Real gains in sustainability performance will be made not by adding new buildings but by renovating existing facilities, unless new buildings completely replace older ones that are demolished and recycled*.* While the Richardson College for the Environment and Science Complex has rightly become the "flag ship" of university sustainability initiatives, renovation projects promise real gains in sustainability performance as well. FY2007 has nevertheless marked some real achievements to physical infrastructure and maintenance procedures.

For a detailed overview of university performance on all policy-mandated land use and property management indicators, see Appendix D.

Goals: The Land Use and Property Management goals for The University of Winnipeg include:

- To strive continuously to adopt approaches to land use planning, landscape design and construction, and grounds maintenance which are, (a) consistent with the goals of the University's Sustainability Policy; (b) reduce waste; (c) reduce use of toxic pest management substances; (d) reduce the energy intensity of grounds maintenance activities; (e) reduce discharges of wastes to landfill, and (f) whenever practicable, reuse materials and products necessary to landscape maintenance.
- Consistent with its fiscal resources, adopt the use of cleaning agents, paints, polishes, pest management techniques, and any other products required for maintenance of buildings, facilities and grounds that represent the least toxic, most environmentally sensitive choices available.
- Develop or commission landscape designs that employ xeriscaping, permaculture, or other organic and sustainable approaches to landscape maintenance.
- Plan and develop transportation infrastructure on the University campus that encourages and supports pedestrian, human powered, and / or zero emissions vehicle approaches to meeting transportation needs.
- Specify in all plans, RFPs, tenders for contract, etc., the highest sustainability performance standard consistent with the University's fiscal resources in construction of all new buildings and facilities and in the retrofitting, remodeling or recommissioning of existing buildings (e.g., LEED Gold or better).

Land Use and Property Management Performance for FY2007:

Duckworth Centre Expansion

- A 780 m^2 expansion to Duckworth Centre was completed to include the UWSA Soma Café, a Fitness Centre, classrooms and offices. Designed by Prairie Architects to "shadow" as closely as possible the LEED-NC 1.0 standard for new construction, the addition successfully demonstrates many green building principles. Since, however, it is an addition to a much larger pre-existing facility, not all LEED criteria could be satisfied

for the highest available ranking. Key green building features which were attained by this project include:

- High density urban development and availability of alternative transportation facilities (bus stops, bike racks);
- Radiant floor heating allowing for a more passive heating system rather than using forced air heating;
- Heat and energy recovery units were installed capturing 60-80% of conditioned air which otherwise would have been lost;
- Individualized fan-coil heating units arranged in smaller zones within the building allow for greater control over and conservation of energy used for heating;
- Highly insulated building envelope and Low-E glazing;
- Many building materials (steel, flooring, concrete, drywall) included recycled material content;
- Addition was clad with Tyndall Stone, a locally available material;
- Large windows have allowed for ample views and maximizing use of daylighting to reduce need for artificial lighting;
- Facility was finished with low VOC (volatile organic compound) paints and finishes throughout.

Wesley Hall Renovation

- Extensive mechanical and electrical renovations continued to Wesley Hall in addition to the refitting of the building cladding, insulation, windows and other equipment completed in 2006. Sustainability improvements that might be achieved are challenging to assess because no baseline data exist for Wesley's performance which isolate the building from interconnected systems that supply utilities to it. Some efficiencies are expected from upgraded chillers and changes to heating systems, but the energy conservation achieved is likely to be off-set by increased ventilation rates to improve indoor air quality. Separate metering is planned for steam and electrical services which should allow independent tracking of Wesley Hall performance in the future.

T-21 Renovation

- The renovation to the Theatre Building (T-21) was planned with reference to LEED-NC 1.0 and is unlikely to meet minimum requirements for "LEED certification", i.e., below LEED Silver ranking due to significant budgetary limitations. T-21 is separately metered for utilities which will make it possible to assess what gains, if any, this renovation achieves following recommissioning in FY2008.

Portage Commons

- The redevelopment of the Portage / Spence face of the university, Portage Commons, was completed by Hilderman, Thomas, Frank, Cram, Landscape Architecture and Planning, and includes a number of notable sustainability features:
    - An extensive planning process to ensure that the Commons is designed to best suit the needs and program of the community (University and neighborhood) with consideration for the environmental benefits of appropriate material selection and the mitigating effects of plants on micro climate;

- Clay soils were modified with the addition of sand and organic matter to provide optimal growing mediums for planting. Appropriate soil depths were specified to provide optimal growing conditions for plants and turf;
- Turf was selected as an important material for the Commons for use, not ornamentation;
- Plants were selected for their hardiness. They are improved native species selected for their performance in this urban location and their contribution to micro climate mitigation, ornamental value and carbon sequestration capacity;
- Irrigation is zoned to accommodate the different water needs of the different plant selections. Overspray has been minimized;
- Mulch is used to reduce evaporation and provide soil cooling to all planting beds;
- The University employs extraordinarily skilled maintenance personnel.

Land Use and Property Management Initiatives for FY2008:

Richardson College for the Environment

- This facility is being designed to a LEED Gold standard and contains numerous design elements that enhance its sustainability performance. Since construction was not commenced during FY2007, the benefits promised for the facility remain to be realized. Key green building design elements include:
  - Projected LEED-Gold performance rating;
  - Design is targeted to exceed 64% of the energy efficiency mandated by the Model National Energy Code for Buildings;
  - A state of the art energy recovery wheel and three-mode operating system for laboratory ventilation (fume hoods) and energy management promises an 80% recovery of heat from ventilation air over conventional laboratory designs;
  - Development of a training program for building occupants and visitors respecting the green building operational features of the facility;
  - Pilot green roof system;
  - Demonstration living wall system;
  - Solar domestic hot water system;
  - “Next generation” building communication and monitoring technology;
  - Active transportation elements;
  - Opportunities for community learning and mixed-use of the facility for community groups;
  - Inclusion of employment and training opportunities for neighborhood residents during construction;
  - LEED 5+ commissioning.

McFeetors Hall Street Student Residence

- Construction of a new LEED Silver+ Student Residence on Langside Street is slated to begin in FY2008. This project is currently in the late design stage and is slated to feature the following green building elements:

- Geothermal heating;
- Supplemental wind-generated electricity;
- Solar domestic hot water service supplemented with geothermal hot water;
- A “solar chimney” and heat recovery wheel to supplement ventilation;
- Energy modeling which projects a 56% saving on overall energy requirements below the National Model Building Code standard.

UWSA Day Care Centre

- Construction of the new UWSA Day Care Centre also on Langside Street, and also planned to achieve LEED Silver+ sustainability performance is also scheduled to begin in FY2008. It is currently in an earlier stage of design and not all features have been identified, but the facility will be fully serviced with geothermal heating.

Land Use and Property Management Challenges:

- A great potential exists to achieve gains in sustainability through the renovation of existing buildings to improve their energy and resource use efficiency, or by replacing existing buildings with new high-efficiency facilities. Both strategies, however, require significant capital funding.
- It has been generally acknowledged by the Cleaning Contract Review Committee that the university’s cleaning services contractor is significantly under-performing, which in turn has consequences for the long-term maintenance and sustainability of university facilities, to say nothing of compromising aesthetic values. Operational funding constraints have so far made it impossible to solicit tenders from other cleaning services providers, or to establish a cleaning department within the university itself.
- University facilities continue to harbor asbestos insulation which should be removed. This requires a dedicated allocation of funding for the purpose and an asbestos removal program.

Materials Conservation (Waste Reduction)

The University of Winnipeg continues to mark progress in conservation of material resources through the minimization of waste. It also faces challenges to moving this agenda forward. Many initiatives were launched during the last fiscal year which were successfully implemented, others require refinement or further development.

For a detailed overview of university performance on all policy-mandated materials conservation (waste reduction) indicators, see Appendix E.

Goals: Goals of the Waste Minimization Policy of The University of Winnipeg include:

- Strive toward zero waste emissions from the University's use of energy and materials through the hierarchical application of resource demand reduction, reuse, recycling and recovery;
- Manage hazardous wastes in compliance with all applicable statutes and regulations, striving to minimize the use of hazardous materials, and wherever practicable, eliminating the use of hazardous materials which may become waste;
- Encourage training and research programs which increase awareness and encourage adoption of practices and behaviors that eliminate waste of all types.

Materials Conservation (Waste Reduction) Performance for FY2007:

Waste Reduction Summary	FY2006 (tonnes)	FY2007 (tonnes)	% change FY2007 over FY2006
Total Solid Waste Generated (MSW)[1]	233.7	172.2	- 26.3
Total Materials Captured by Recycling[2]	83.1	94.4	+ 13.6
Organic materials (compost)	0	1.5	Incl.
Toner Cartridges	0	0.1	Incl.
Batteries	0	0.1	Incl.
Corrugated cardboard & boxboard	30.5	35.1	Incl.
Mixed paper incl. shredded confidential paper.	49.0	51.4	Incl.
PET drink containers	3.6	6.2	Incl.
Solid Hazardous Wastes	0.25	0.7	+ 180.0[6]
Total Materials to Landfill[3]	150.6	77.8	- 48.3
MSW / FCE (kgs)	7.7[4]	5.6[5]	- 27.3
Cost of Recycling / Waste Management			
MSW Disposal Cost	$ 32,400.00	$ 33,323.93	+ 2.9
Recycling Collection Fees	$ 5,000.00	$ 5,100.00	+ 2.0
Confidential Paper Shredding Service	$ 4,258.06	$ 7,176,72	+ 68.5
Hazardous Waste Removal Fees	$ 6,278.48	$ 15,000.00[7]	+ 140.0
Total Cost Recycling / Waste Mgmt.	**$ 41,658.06**	**$ 60,600.65**[7]	**+ 45.5**[7]

1 MSW = Municipal Solid Waste – the aggregate of all solid wastes produced by the university during the fiscal year.

2 Includes all materials captured in “blue boxes”, i.e., corrugated cardboard, box board, mixed fine office paper, confidential shredded paper, and drink containers, usually PET plastics, organic materials captured in composting containers, yard waste, toner cartridges, and disposable batteries.

3 The values reported for materials to landfill are likely unreliable as there is a continuing challenge with obtaining accurate weight information from the university’s waste management service provider.

4 Total FCEs (Full course equivalents) for 2006 = 32,350.

5 Total FCEs for 2007 = 30,626.

6 The sharp increase in year-over-year total solid hazardous waste is due to a one-time decommission of a chemistry lab which resulted in a substantial single disposal of hazardous materials.

7 Increased costs for hazardous waste removal, as well as increased total cost of waste services and increased percentage year over year are partly attributable to a single contract to close down a chemistry laboratory which resulted in the removal of more than average volumes of hazardous materials.

Materials Conservation (Waste Reduction) Accomplishments for FY2007:

Physical Plant

- **Battery recycling** was established in June 2007**,** thus removing another cluster of hazardous wastes from landfill (e.g., lead, cadmium, lithium, etc.).
- **Composting of Organic Materials** – Established in August 2007 which could, when fully implemented, reduce waste to landfill by approximately 50%, and GHG emissions by approximately 4%.
- **Toner Cartridge Recycling** - Capture and recycling of toner cartridges from printers and other imaging equipment which now returns a small revenue stream to the sustainability office.
- **MSW Contract renegotiated** - Success renegotiation of UW municipal solid waste removal contract in such a way that reducing the volume of resources going to landfill will now be reflected in reduced waste handling costs to the university;
- **Chartwells Service renegotiated –** Worked successfully with Chartwells Inc., the campus food services provider, to adopt compostable food service ware, thus easing the onus on university staff to perform source-separation of organic materials before shipping materials for composting;
- **2007 Waste Audit completed -** Successfully performed a new waste composition audit on the remaining fraction of the waste stream going to landfill, thus enabling another round of analysis and problem-solving aimed at further reducing waste;
- **Provided employment to students** to perform the waste audit as well as numerous learning opportunities by way of participation in the Waste Reduction Working Group and the Campus Sustainability Council.
- **The Print Shop has reduced copying** from 17 million impressions in FY2006 to 15 million impressions in FY2007 with a corresponding saving in paper and supplies.
- **“E-waste”** (spent electronic equipment) is **collected for recycling** in cooperation with PowerLand Computers, Inc. 100% of this equipment is currently being recycled in local facilities in Winnipeg. Establish capacity to capture and recycle toner cartridges from printers and other imaging equipment. Cartridges may now be repackaged and returned to Gold for recycling.

Bookstore:[5]

- **95% of books are returnable** to publishers. Full copies are returned, not portions.
- Most **unsold stock is retained,** re-priced and eventually sold.
- Textbook returns to publishers average about 30%. **Inventory management is used to reduce return shipping requirements,** saving both money and transportation impacts.
- All **unsold magazines and other periodicals are returned** in their original format. (Previous practice was to strip covers and return them for refunds.)
- **Used textbooks are purchased by the bookstore** and some of its wholesalers. There is strong interest in further promoting the sale of used textbooks as this practice is both financially and environmentally sustainable.
- **Course packages are reused** as long as professors continue to specify them. Old course packages are recycled. Production of course packages incurs about 800,000 impressions per year of photocopying. There is a 10-15% return rate.
- **Close coordination between the Bookstore and the Print Shop** has made possible a 24 hour turn-around time on printing additional copies of course packages. This reduces the potential unsold inventory carried by the bookstore and also potential waste. All course packages are under-ordered and if more are required, then more are printed on a just-in-time delivery basis.
- The bookstore is introducing **reusable cloth shopping bags** to replace disposable plastic bags.
- Unsellable books are currently stored or sold back to wholesalers when possible. The Bookstore is exploring avenues to divert unsellable stock from the waste stream.

Library:[6]

- 320 boxes (est. 26 kg/box = 8.32 tonnes) of culled journals and books were deleted from the university collections in FY2007. This was a “one time” cull that happens every 30 years or so. Material collected was taken to the Manitoba Government storage area for bulk shredding. Destination of shredded material is uncertain.
- Newspapers are discarded weekly. Journals not sent for binding are discarded annually.
- Books are also donated to the Library which often are of little use to the collection. Some of these are sold at very low prices during two book sales per year while the remainders are discarded.
- There is an on-going process of identifying obsolete textbooks and multiple copies which are no longer needed. Attempts are made to re-sell these, but some are also discarded.

Materials Conservation (Waste Reduction) Initiatives:

Physical Plant:

- Completed production of a Sustainability Awareness Video that included information segments on waste reduction, recycling, and composting.
- A quality control assessment should be planned to monitor E-waste collection and recycling provided to the university by PowerLand Computers to assure that it meets standards set by the Electronic Products Stewardship Council—the most widely recognized standard for this sort of service in Canada.

Bookstore:[5]

- The Bookstore is exploring the feasibility of shelving textbooks by department and course rather than department and author's name. This slight change in practice would eliminate the need to cover walls outside the bookstore with lists of books for each course, requiring students to write them down before entering the store to purchase texts. The posted wall lists also require continual updating as courses and reading lists change at considerable cost in paper and inconvenience to students.
- The Bookstore is exploring increasing on-line sales of books as a convenience to students, but this may also increase shipping costs and transportation footprint.
- The Bookstore is continuing its transition toward more on-line ordering from booksellers thus reducing the need for fax or mail-in paper-based ordering procedures.

Materials Conservation (Waste Reduction) Challenges:

- Collection service for blue box recyclable materials is still not available in all university facilities, notably T21, Rice 7 & 9, 520 Portage, 480 Portage, and DCE on Princess Avenue. Pick-up service needs to be expanded to include these sites, but lack of staff presents a barrier.
- While material volumes going to landfill have been declining, tipping fees have been increasing. Landfill fees are predicted to increase 48% on 1 May 2008. This reduces the cost savings available to the university from waste reduction initiatives. Johnson Waste Management is now also levying a special "service fee" for weighing MSW, even though weighing it is the basis for billing.
- The university's waste handling vendor has returned highly untimely and unreliable weight data for MSW going to landfill. Evidently, accurate weights are beyond the technical ability of the vendor to provide and "estimates" vary by as much as 300% month over month. This situation makes planning, budgeting, cost-benefit analysis and even assessment of the fairness and accuracy of invoices nearly impossible.
- Full implementation of composting requires changes in mass behavior which is likely to be a slow, relatively long-term process. More resources are needed for effective social marketing of this initiative.

Social Sustainability - Campus Life and Community Outreach

"Social Sustainability" refers to a somewhat vaguely defined cluster of concerns which include consideration of intergenerational equity, human health, institutional capacity-building, and a range of quality of life values. The essential principle is that whatever contributes to the health and well-being of a society, increasing cooperative approaches to problem solving, and which builds up the capacity of systems of public administration are also necessary conditions for the development of fiscal and environmental sustainability.

Given this fairly broad understanding of social sustainability, a variety of campus life and outreach projects and programs arising from, or in connection with, the University of Winnipeg presence in the community might be considered relevant. Campus sustainability is greatly enhanced by a variety of student activities, projects, and community-university partnerships that engage students and faculty of the university with people living in the university neighborhood. Four groups involve students most directly in environmental and sustainability activities—the University of Winnipeg Students' Association (UWSA), Sustainable University Now, Sustainable Earth Together (SUNSET), Ecological Males and Females in Action (EcoMAFIA—recent renamed EcoPIA, Ecological People In Action) and the Geography and Environmental Studies Students Association (GESSA). It should also be noted that many students have made significant contributions to the Campus Sustainability Council and its Working Groups without financial compensation or course credit. Some accomplishments of these organizations during the past year include:

University of Winnipeg Students' Association

- **Spent cell phones and printer ink cartridges are now being collected from students by the UWSA and donated to thINK FOOD and Phones for Food,** organizations that remanufacture / recycle the materials and donate the proceeds to food banks in Manitoba including Samaritan House Ministries Resource Centre in Brandon, Winnipeg Harvest, and Evergreen Basic Needs Food Bank in Gimli.[7]
- **Batteries** are also being collected from students by UWSA and sent to the Household Hazardous Waste Depots operated by Winnipeg Water and Waste Department.[1]
- **The food service ware used by the Soma Café is entirely compostable** and sourced from Happy Planet Products in Winnipeg.[8]
- **Food sold at Soma Café is locally sourced** to the greatest extent practicable. Coffee (Kicking Horse) and teas (Numi) are organic/fare trade certified. Organic materials are captured for composting. A chalkboard is used for menus; some furniture is re-used. EnergyStar appliances have been installed as well as linoleum flooring. An "education board" is incorporated into a divider wall detailing the café's sustainability features.[9]

Sustainable University Today, Sustainable Earth Together (SUNSET)

- **SUNSET has been working on off-campus, community-based sustainability initiatives** in partnership with the Social Planning Council of Winnipeg in addition to meeting with UW faculty to facilitate sustainability research projects in partnerships with local NGOs (Non-governmental Organizations).[8]
- **SUNSET has densely developed its Experiential Learning Program** by means of the Coordinator contacting over 90 faculty and 52 community NGOs to identify opportunities and contact and collaboration around experiential learning / research projects for students focused on community sustainability. Since March 2007, SUNSET has directly facilitated 4 student projects, 2 course assignments, and 5 practicum placements involving a total of 25 students.

Ecological Males and Females in Action (EcoMAFIA)

- The EcoMAFIA **hosted a compost making workshop** during Waste Reduction Week in October 2007, which was delivered by staff from Resource Conservation Manitoba.
- EcoMAFIA **volunteers have been speaking to first year classes** about the importance of composting and recycling, and offering demonstrations of how to use university compost collection facilities. They have also set up a composting display table and participated in demonstrations at the organics collection bins in cafeterias on campus.[8]
- EcoMAFIA also continues to **host "Stuff Swaps"** which enable students to trade material goods without intervening sales exchanges, Buy Nothing Day activities to promote consumption reduction approaches to sustainability, and is working on public service announcements for CKUW related to waste reduction.[8]

In addition to student organizations, there are university departments, in particular the Education Department, with established or developing programs that link faculty and university students with community partnering organizations. The intent of most of these initiatives is to engage university students in academically meaningful learning activities while also contributing to capacity-building and improved quality of life for the surrounding neighborhood. Noteworthy examples of these programs include:

Centre for Innovative Learning

- **Eco-Kids on Campus** - This is a program that brings inner-city children from local elementary schools to The University of Winnipeg Campus to have their science curriculum delivered at the University by the Faculty of Science professors as well as Collegiate Teachers. The program is designed to give practical, hands on activities and experiments that will promote a deeper understanding of the environment and stewardship.
- **Eco-U Kids Camp** - This program provides Aboriginal and inner-city children and youth (8 - 14 years old) with a week long enriched and fun summer day camp experience that they could not normally afford, using environmental and cultural activities to engage them and build environmental awareness. The program also employs inner-city high school high school and university students to work in community development.
- **Enviro-Tech Program** - This program is designed to give high school students the opportunity to develop an understanding of the critical issues facing us as a global community. Students earn one high school credit from Manitoba Education Citizenship and Youth for participating in the program. Students are exposed to activities and experiences that will foster a deeper understanding of traditional indigenous science and knowledge and the importance of these teachings to future developments in science and sustainability.

Global Welcome Centre

- **Assists newcomers and refugees** with adjustment to post-secondary education environment. Organization structure and menu of services and programs are under development, beginning with a survey of best practices in other jurisdictions. Community outreach projects are a priority.

Wiichiiwaakanak Learning Centre

- **Community drop-in centre** opened in 2005 offering volunteer-staffed programs including a reading room and lounge, community resource library, a community learning

commons and computer lab, coffee, free newspapers, meeting / training / programming space. The Centre is a collaborative effort of UW, UW Foundation, S. E. Resource Development Council, The Winnipeg Partnership Agreement, Government of Canada Urban Aboriginal Strategy, and a number of First Nations, Métis and Inuit organizations.

- **Programs include basic computer training, homework tutorial assistance, aboriginal language studies, elder-led teaching circles.**

Mentorship Program

- A program offered through the UW Faculty of Education awarding .5 credits to 4th and 5th year Education students with appropriate pre-requisites to offer mentoring services to high school at-risk students, elementary and middle years talented students, inner-city community drop-in clients, high school war-affected youth, and other individual projects.

Service Learning Project

- Service Learning is a teaching method which integrates learning activities with service functions to the community. Learners use academic skills to solve issues linking learning objectives with real needs. The service learning project operates from the Department of Education and is supervised by Education faculty.

University of Winnipeg Collegiate Institute

- **All of the Collegiate grade 10 students attended the Y.E.S. Conference (Youth Encouraging Sustainability).** This was a two day conference of speakers and professors from the University of Winnipeg and Manitoba who provided lectures and hands-on activities about sustainability projects and innovations.
- **No Garbage Lunch Day.** The students brought their own no garbage lunches and informed other Collegiate students about the importance of minimizing waste through posters, creating PowerPoint® slides on the Collegiate bill boards and baking cookies to give to students who brought no garbage lunches or those willing to listen to a talk about them.
- All grade 10 students attended an **Arctic Awareness lunch lecture** given by a grade 11 and a grade 12 student about their trip in October to Churchill, Manitoba.
- **Our Awareness Fair** was a presentation by the Grade 10s of sustainability projects. The fair was held in Convocation Hall and exhibited 20 projects ranging in topics from electric cars to the Alberta Tar sands. Three student groups from other schools came to view the presentations and listen to the students discuss their findings.
- Some grade 10 students participated in pro-active campaign by encouraging fellow Collegiate students to **compost and recycle.** Students spent time in Tony's educating lunch eaters about where and why to compost, while others collected recycling out of garbage cans in Collegiate classrooms and tallied statistics.
- A **clothing collection project** is planned for 4 April 2008. Grade 10 students will be donating used clothing and selling items for $0.25 during the lunch hour. Money collected and any left over clothing will be going to Mennonite Central Committee to provide clothing for refugees and homeless in Winnipeg.

Finally, the Campus Sustainability Council commenced work in November of 2006 to respond to the provision of the Campus Sustainability Policy which calls for development of policies and initiatives which specifically address the social dimension of sustainability. Work is expected to continue well into 2008 and beyond on this objective, with the following accomplishments to date:

- Appointment of a Social Sustainability Working Group of the Campus Sustainability Council charged with developing a draft scope, indicators, aspects, and consultation process for a social sustainability policy.
- Four meetings were held during which SSWG members heard presentations from the Innovative Learning Centre, the Manitoba Food Charter, SEED Winnipeg, and the International Institute for Sustainable Development on various aspects of social sustainability.
- Developed an outline and work plan for establishing a vision statement on social sustainability and key goals for a social sustainability policy.

Sustainable Transportation

The university has made significant progress toward promoting adoption of more sustainable approaches to transportation among students, faculty and administration. The Transportation Working Group of the Campus Sustainability Council met on a bi-weekly basis throughout the academic year of 2007-08 and continued to make progress in several key areas. The most current data regarding transportation use patterns at the university is derived from parking statistics and a survey conducted by Winnipeg Transit in 2005. The Campus Sustainability Office aims to develop independent data gathering capability in the year ahead. For a detailed overview of university performance on all policy-mandated sustainable transportation indicators, see Appendix F.

Activities during the past year have included:

Goals: The goals of the University of Winnipeg Sustainable Transportation Policy include:

- To encourage the development and adoption by students, administration, staff and faculty, of modes of transportation that:
  - (a) progressively reduce consumption of fossil fuels used for transportation;
  - (b) progressively reduce the material and resource-use intensity of transportation;
  - (c) progressively reduce and eventually eliminate discharges of toxic substances, wastes, and pollution to the ecosphere, including GHG emissions;
  - (d) progressively increase equity of access to transportation services.
- Encourage the adoption and use of more sustainable approaches to transportation both with respect to infrastructure and behavior over which the university has direct control, but also where it has partial control or can exert influence through education, professional development, awareness-building, or community partnerships.

Sustainable Transportation Achievements for FY2007:

- A **Ride-Sharing / Carpooling Registry** continues to offer an on-line carpooling service that connects people who want to carpool to campus.
- **A design program planning meeting for an Integrated Transit Hub** on UW campus was convened which included over 20 representatives of off-campus organizations and private sector neighbors.
- A **Pre-feasibility Market Survey** was completed by the Institute for Urban Studies assessing the potential user population for an Integrated Transit Hub on campus.
- A **U-Pass Program Feasibility Meeting** was convened with representatives from Winnipeg Transit, the presidents of the Student Associations at U of M, U of W, RRC, and CMU to explore collaborative approaches to implementing a U-Pass program on all campuses. Winnipeg Transit has indicated its willingness to offer a U-Pass to UW students regardless of whether or not the measure is adopted by other post-secondary institutions in the city.
- **A Concept Paper and Building Design Program for an Integrated Transit Hub** was authored by Institute of Urban Studies staff and tabled with Senior Administration.
- **Inclusion of Dedicated Bike Lanes in the Green Corridor** planned to connect the UW main campus with the new Richardson College for the Environment campus was successfully negotiated with the project developer. The Corridor will include a double lane dedicated bike path in the link design. Once completed, this feature will connect the UW

central campus with the east-west cycling thoroughfare proposed by Bike to the Future for St. Matthews Avenue, thus connecting central Winnipeg with the Perimeter Highway and making the UW campus the eastern terminus of this route.

- A **Travel Reimbursement Reporting Procedure** has been successfully implemented for reporting travel distance and transportation mode information and returns it to the CSO. This will allow for much greater accuracy and completeness in calculating GHG emissions and other environmental impacts from faculty and staff travel, and more strategic management of them.
- A **Parking Stall Rate Increase** has been successfully introduced which will price all new parking stalls at prevail market rates and attempt to normalize all other parking rates to market levels over the next five years. The feasibility of allocating parking services profits to sustainable transportation initiatives on campus is being discussed.

Sustainable Transportation Initiatives for FY2008:

- **Continuing U-Pass Meetings with UWSA** are planned to provide support, focus and encouragement for students to adopt a U-Pass program.
- **Engaging an Architect to Develop Transit Hub Plans and Class-C Estimates** will provide graphic treatments of the proposed facility and enough capital cost information for a Senior Management decision to proceed as well as design of the Foundation funding campaign.
- **Purchase of Carbon Off-sets for All Staff, Faculty and other University Business Travel** is being mandated for FY2008. A procedure for the aggregation of travel data and a broker-mediated bulk purchase of CDM-qualified carbon off-sets for all travel activities is being finalized with Financial Services. When fully implemented, this measure could effectively off-set about 8% of total university GHG emissions, a significant step toward our Kyoto compliance goal of 24% GHG reduction.

Sustainable Transportation Challenges:

- **U-Pass Adoption** – There is a continuing challenge with the introduction of a U-pass program which requires passage by student referendum of a new, mandatory fee to support the program. Passage of the proposition is believed to be largely contingent on the cost of the program to students.
- **Securing sufficient capital resources** to move forward with development of the Integrated Transit Hub.
- **Increasing consciousness among faculty and staff of the environmental impacts of travel** and the desirability of minimizing travel to levels essential to the university's mission.
- **Promoting greater use of Active Transportation** choices generally within the campus culture.

Water Use Management

Water is used by the university in essentially the same applications as those found in a household (washing, cooking, drinking, bathing and toilet flushing) with the exception of water used for laboratory purposes, in cooling towers, and in boilers. Water consumption increased by nearly 19% in FY2007 over FY2006. Water consumption can be influenced by differences in average annual humidity which can affect evaporator performance in chiller towers as well as enrollment levels.

For a detailed overview of university performance on all policy-mandated water use management indicators, see Appendix G.

Goals: The Water Use Management goals of The University of Winnipeg include:

- Strive for zero waste in the University's use of water, and zero emissions of toxic or hazardous substances to waste water systems.
- Strive continuously to reduce, as far as practicable, the University's demand for potable water, the discharge of pollutants to water, and the production of waste water from all University programs, facilities, and operations through the hierarchical application of demand reduction, reuse, recycling and recovery.
- Make decisions respecting water use management with due regard for their impact on the environment, including plant, animal and human health, and that water management programs and initiatives be instituted with due regard for their economic impact.
- Ensure that University policies, programs and decisions take into account the need to rehabilitate any part of the environment that is damaged or degraded as a result of its own water use management activities.
- Encourage research, education and innovation respecting water conservation with a view to preventing and reducing adverse impacts on the environment and the economy now and for future generations.

Water Consumption	FY2006	FY2007	% change FY2007 over FY2006
Water consumption (liters)	45,804,555	54,355,517[1]	+ 18.7
Cost	$ 96,700.00	$ 112,324.23[1]	+ 16.0
Liters / FCE	1,518	1,775	+ 16.9
Liters / m^2	499	592	+ 18.6

[1] Reported values are estimated as final water consumption data were not available from all services at time of writing. Estimates are based on consumption from FY2006 for the same time period.

Water Use Management Performance for FY2007:

- **Water use increased overall nearly 19%** over FY2006 levels. This performance is somewhat puzzling given the fact that T21 and Wesley Hall were mostly out of service during FY2007, as well as their being lower enrollment on campus and the introduction of measures to reduce water consumption from operation of boilers and cooling towers.
- **Revision of boiler and cooling tower management procedures** has reduced consumption both of service water for this equipment and use and discharge of water treatment chemicals needed to control biohazards in boiler and cooling tower equipment.

- **Water Conservation Specifications** were included in the design programs for renovations to the Theatre Building (T21), the expansion of the Duckworth Centre, and Wesley Hall renovations.

Water Use Management Initiatives for FY2008:

- A **Comprehensive Water, Energy, HVAC, IAQ and Building Envelope Audit** has been proposed and is under discussion with Manitoba Hydro PowerSmart and technical advisors from the City of Winnipeg. Once completed, the audit results will enable strategic investments in equipment and fixtures that reduce water consumption overall.
- **Water Conservation Specifications** will be implemented as part of the building design program for the Richardson College for the Environment, the Langside Student Residence, and the UWSA Daycare Centre all slated to begin construction in FY2008.

Opportunities and Recommendations

While considerable progress has been made on campus sustainability initiatives since 2005, largely due to the efforts of faculty, staff and student volunteers, there remains much to do, as well as many opportunities to further advance campus sustainability performance. Going forward, the university might consider the following recommendations, opportunities, and emerging situations:

Focus on Key Projects

A short menu of certain key projects promise large sustainability benefits for the university, i.e., reductions in all sorts of polluting emissions including GHG emissions, conservation of materials and energy, and reduction in the toxicity of programs and operations. In many cases, these projects will require significant capital and operational funding invested in essentially invisible assets using existing technology—not a very fortuitous combination considering that it is visible infrastructure employing experimental technology which tends to elicit most enthusiastic interest. This disconnect between what creates the appearance of progress and what in fact constitutes substantive change is one of the most daunting challenges faced by the campus sustainability initiative. It is respectfully proposed, however, that the following key projects offer considerable potential to improve sustainability performance:

- **Facilities Audit and Renovation** – The university would benefit from a comprehensive assessment of the condition of its entire inventory of buildings and the electrical, mechanical, air handling and building envelope systems involved. This audit remains as relevant today as it was when first proposed in 2005. Most progress on making *real* reductions in the university's ecological footprint will be achieved by renovating existing buildings, or replacing them with more efficient buildings. This can be done using existing technology to excellent effect. It is difficult and inefficient to plan the allocation of scarce capital resources in the absence of accurate, current, and comprehensive information about the overall condition of all systems affecting the efficiency, health and safety of facilities. The urgency of this undertaking increases by the day as energy prices and the availability of skilled labor both increasingly constrain what can be achieved within a given budget.

  It is recommended that the university re-double its efforts to secure a comprehensive infrastructure audit of all its major facilities with particular attention to assessing those systems most relevant to sustainability performance.

- **Integrated Transit Facility** – Excellent progress is being made toward developing an Integrated Transit Hub on the university campus which would offer amenities to cyclists and pedestrians as well as linking them efficiently to Winnipeg Transit and car-pooling / ride sharing services. Most important, however, would be the likelihood that such a facility would dramatically and publicly signal the university's commitment to environmental sustainability. While construction of the proposed hub would subtract nothing from the university's GHG emissions as the university is not responsible for reporting or reducing emissions from the intra-city transportation used by its faculty, staff and students, as an educational institution, it remains essential that we model, encourage and educate members of the university community and the surrounding neighborhood regarding the importance of transportation to the overall resolution of our sustainability challenge.

  It is recommended that upon completion of the design charets and receipt of the class-C estimates currently being prepared for the Transit Hub, that the university give high priority to proceeding with construction of the facility as soon as practicable.

- **Carbon Off-setting of Faculty / Staff Travel –** The university *is* responsible for tracking, reporting and taking measures to reduce the environmental impact of travel conducted by faculty,

staff and students while on university business. Such activities currently account for nearly 17% of total GHG emissions from the institution. Given the realities of life in academe, it is doubtful that overall travel activities will be much reduced in the future, despite the promise offered by travel-replacing technologies. But even if such technologies prove successful, there will likely always be some residuum of travel which cannot be avoided or substituted using telecommunications technologies. There has already been a decision in principle to establish a procedure to purchase CDM-qualified carbon off-sets for this portion of our GHG emissions.

It is recommended that all university departments work collaboratively and creatively to assure early implementation of the carbon off-set procurement procedure for all reimbursable travel by faculty, staff or students on university business or participating in university programs or activities requiring travel.

- **Organics Management –** Successful implementation of a campus-wide organics management program (composting) is an important last step in completing the university's overall waste management system. The contribution of organic waste to our overall GHG emission profile is very small (< 2%), but it remains the final incomplete element in a system which is otherwise now returning accurate, quantitative data on waste management performance and can therefore be effectively managed. Essential to this goal are both the cooperation of Chartwells, Inc., the university's food services vendor, as well as the broad-based participation of faculty, students and staff.

  It is recommended that adequate resources be available and appropriate cooperation be offered by all university departments who can contribute to implementing participation in organics management activities broadly across the university. This implies both the continued participation of Chartwells and also developing and implementing an effective program of education, awareness-building and performance monitoring aimed at helping everyone reduce the generation of organic wastes in the first instance, and the properly handling of them if generated.

- **Performance Tracking and Reporting Systems –** Effectively managing the university toward sustainable outcomes requires timely, accurate and complete information about sustainability performance. Much progress has already been made in this regard. The current performance report includes information from over 100 indicators. Thirty-seven more indicators, however, remain to be measured and reported. Moreover, the data collection and reporting process is currently labor intensive and does not take advantage of the powerful efficiencies available in internet-based and fully automated reporting systems. Exciting opportunities have materialized this year through potential partnerships with Emerge Environmental Information Solutions, Ltd., and Cisco Systems, Inc., to make additional strides in the direction of more efficient, accurate, and easy to use reporting systems.

  It is recommended that work continue toward the full automation of performance tracking and reporting systems for sustainability performance.

"Greening" Procurement

Procurement remains a major way in which university decisions create environmental impacts. It is also an area of university operations specifically regulated under the Manitoba Sustainable Development Act. Reducing procurement absolutely overall is an essential element of any operational plan for a sustainable institution, in addition to changing the types, sources and toxicity of the goods and services the university procures. Considerable work remains to be done in this area and it is respectfully recommended that greening procurement be a major focus of activity in the coming year.

- **Review Vendor Contracting Practices –** It has been clear during the past year that major vendors supplying goods and services to the university vary considerably in their understanding of sustainability concerns and in their capacity to address those concerns effectively.

  It is recommended that the university consider shortening the terms of major vendor contracts for services and products supplied to the university and introducing contract language that increases the prominence of sustainability criteria in product and service bid assessments, offers the university more "off-ramps" from under-performing or frustrated contracts, and assures more "reverse onus" provisions which assign more responsibility for reducing the environmental impacts of goods and services to the vendors providing them.

- **Procurement Tracking and Reporting** – The Campus Sustainability Office should organize an initiative that will effectively and efficiently introduce more mass / quantity-based tracking of procurement activities to supplement existing cost-based tracking. The challenges of doing this should not be under-estimated, but developing a successful system could have very significant intellectual property value among any institution or corporate entity using a TNS sustainability model for its environmental or sustainability management system.

  It is recommended that work on a mass / quantity / toxicity-based procurement tracking system be continued and strengthened in the coming year.

Building Capacity for Sustainability Management

The university could benefit significantly from building more institutional capacity for sustainability management and approach the task of planning and managing for sustainability as a function which is diffused across all operational departments rather than something that can or should be centralized in the Campus Sustainability Office.

- **Integrate Sustainability Objectives into Job Descriptions –** One significant way the university can "green" its campus culture slowly but surely is by introducing, wherever appropriate, more sustainability performance objectives in the job descriptions of new hires. This gradually builds intellectual and institutional capacity for improving sustainability performance and innovation.

  It is recommended that all job descriptions be reviewed for appropriate opportunities to include sustainability performance objectives whenever new positions are being created, or existing positions refilled after retirements or departures of existing staff and faculty.

- **More Staff Training and Awareness-Building –** Anecdotal information suggests that the campus sustainability initiative still lacks coherence and uniformity across the university. There is need to develop a broad-based general awareness of the sustainability challenge and how it will likely affect the university in the future, as well as a consensus across departments that planning, decision-making, strategic thinking, and budgeting all need to include sustainability considerations. Finally, when job duties require it, more resources should be made available for specific training of individual staff so that they are enabled to exercise due diligence in the environmental performance management of the university.

  It is there recommended that consideration be given and appropriate resources be allocated to both general awareness activities that help create a culture of sustainability within the university as well as more specific professional development investments for individuals and teams with particular training requirements.

- **Increase Resources Specifically Targeted to Sustainability Development –** The Campus Sustainability Office is currently staffed by two half-time (combined 1.1 FTE) professionals with a very small operating budget. Without in any way detracting from the intent mentioned above that action on the sustainability agenda more broadly involve university departments beyond the CSO, there is likely a clear and continuing need for an adequately resourced "focus" for liaison, communication, monitoring and reporting, strategic planning, developmental and consulting functions pertaining to campus sustainability. If the University of Winnipeg's Campus Sustainability Office were staffed and resourced proportionate to the student enrollment found at UBC—arguably the national leader in campus sustainability—the CSO would have 7.5 full-time professional staff and an operating budget of $800,000. On-going efforts are being made to secure additional resources for campus sustainability programs and these have achieved some success in the past year.

  While a UBC level of staffing will likely remain well beyond our reach for some time to come, it is nevertheless recommended that consideration continue to be given to staffing and resource levels assigned to the CSO in light of the expectations that continue to surround the sustainability initiative generally and that when it becomes possible, resources be allocated that are commensurate with the challenge.

- **Develop More Sustainable Approaches to Teaching and Learning –** Complementing our concern to offer students academically challenging programs the *content* of which address the sustainability challenge facing humanity is a parallel concern to *increase the sustainability of teaching and learning methods* regardless of discipline. Preliminary research by the Academic Initiatives Working Group suggests that this area is virtually unexplored in the academic literature on post-secondary teaching methodology, and therefore a potentially fruitful focus for a unique contribution. On-campus research precisely targeting this topic has already been proposed, but funding for it has been declined.

  It is recommended that the university develop an internal research focus on reducing the ecological footprint of teaching, learning, and committee work, seek out and compile compendiums of best practices and make these available to other institutions on a shared access or fee-for-service basis.

- **Promote Student Engagement –** The very mission of the university is focused on its students and students have been collaboratively involved from the very beginning of the campus sustainability initiative making signal contributions to it. Nevertheless, student involvement has been confined to a tiny minority of gifted, informed and strongly motivated individuals more or less continuing the trend over two generations which allocates environmental activism and responsibility to the margins of the social mainstream.

  It is recommended that focused work be undertaken to "mainstream" concern for sustainability issues within the university's student body proportionate to the relevance that the sustainability challenge has to society generally. This could best be achieved through the cooperative efforts of the CSO, an engaged and concerned UWSA, various Working Groups of the Campus Sustainability Council, and the university administration generally.

Refine and Develop Social Sustainability Dimension of the Sustainability Management System

The University of Winnipeg Sustainability Policy mandates the development of a sustainability management system which addresses *both* the environmental and the social dimensions of sustainable development. So far, most energy has been focused on creating the elements of the management system pertaining to environmental aspects of university operations. Addressing the social dimension of sustainability performance—especially adapting meaningful measures of it—is a

challenging undertaking, but nonetheless required under our own policies. Considerable work has already been done, but considerable work remains.

It is recommended that the Campus Sustainability Council, and the CSO secretariat, continue development of the social sustainability elements of the overall management system, and resource these activities appropriately.

Source Notes

[1] Campus Safety Officer, March 2008.

[2] Assistant Chief Engineer, March 2008.

[3] Executive Director, Facilities Management, February 2008.

[4] Assistant Chief Engineer, March 2008.

[5] Scott Spearman – Apr. 2008

[6] Linwood DeLong – May 2007

[7] Kisti Thomas, UWSA, email 12 Nov. 2007.

[8] CSC meeting oral activity report.

[9] Telephone conversation with Sarah Amyot, UWSA Manager.

Appendix A
Air Quality Performance Indicators

Indicator	Target	Performance	
		FY2006	FY2007
A1.1 Year over year improvement or maintenance of minimum baselines for indoor air pollutant indices as specified in provincial and federal standards.	• Conformance to ASHRAE 129-1997 or better.	In conformance.	In conformance.
A1.2 Total square meters of indoor space contaminated with asbestos which has potential to negatively impact human health.	Diminishing annually to zero.	0	0
A1.3 Total square meters of indoor space contaminated with mold which has potential to negatively impact human health.	Diminishing annually to zero.	0	0
A1.4 Number of air pollution incident reports or complaints received per fiscal year and documented evidence of the action taken to address them.	Zero air pollution incident reports or complaints per FY and/or documentation of steps taken to address them.	No data	Complaints – 15 Complaints requiring testing – 7 Complaints still ongoing – 4
A1.5 Total amount of pesticides (including all types of plant and animal poisons) in grams used indoors each year, divided by the total square meters of interior space; multiply by 1000.	0 g./1000 m^2	No data	0.045 gms./ 1000 m^2 (4,185 gms / 92,950 m^2)
A1.6 Total annual quantities of substances discharged to the air which exceed the thresholds listed with the National Pollution Release Inventory (NPRI) as reportable substances.	Within NPRI tolerances.	No data	0
A1.7 Total GHG emissions from all university operations in Tonnes CO_2e per annum for all gases and substances reportable under the CSA GHG reporting protocol.	Diminishing annually to zero.	4,238.7 T. CO_2e	4,196.6 T. CO_2e
A2.1 Total percentage of indoor space in square meters designated smoke-free.	100%	100%	100%
A3.1 Total percentage of indoor space in square meters designated scent-free.	100%	0%	0%
A5.1 Minutes or reports documenting decisions taken to rehabilitate economic, environmental or human health impacts arising from air pollution if such have occurred.	Minutes or reports of full rehabilitation if damaging impacts have been incurred.	No occurrences.	No occurrences.
A6.1 Number and short description of research projects or innovations	Non-zero positive number	No data	Included in CSO

	implemented with the intent of improving air quality in University facilities or programs offered on or off-campus.	with short description of each.		Annual Report
A7.1	Annual report of air quality management performance.	Tabled annually.	Done	Done
A7.2	Post Air Quality Policy and performance reports to website.	Policy and reports posted.	Done	Done

Appendix B
Energy Management Performance Indicators

Indicator		Target	Performance	
			FY2006	FY2007
E1.1	Total annual electrical consumption in KwH.	Annual reductions to theoretical minimum.	14,259,663 KwH	14,143,509
E1.2	Energy intensity of operations: KwH / m^2 of facilities under management / Celsius Degree Day.	Derived	0.0282 KwH/m^2/DD	0.0258 KwH/m^2/DD DD = 5,897 Area = 92,950
E1.3	Energy intensity of operations: KwH / FCE / Celsius Degree Day.	Derived	0.0810 KwH/FCE/DD	0.0783 KwH/FCE/DD FCE = 30,626 DD = 5,897
E1.4	Total annual natural gas (NG) consumption in m^3 (and KwH equivalent).	Annual reductions to theoretical minimum.	1,803,193 m^3 19,077,781 KwHe	1,704,790 m^3 18,053,726 KwHe
E1.5	Energy intensity of operations: m^3 NG / m^2 of facilities under management / Celsius Degree Day.	Derived	0.0377 m^3/m^2/DD	0.0031 m^3/m^2/DD DD = 5,897 Area = 92,950
E1.6	Energy intensity of operations: m^3 NG / FCE / Celsius Degree Day.	Derived	0.1083 m^3/FCE/DD	0.0094 m^3/FCE/DD FCE = 30,626 DD = 5,897
E1.7	Total annual fleet vehicle fuel consumption in liters (and KwH equivalent).	Replacement of fleet vehicles with zero emission models operated on renewable energy sources.	4,276 liters (41,563 KwHe)	2,783 liters (27,047 KwHe)
E1.8	Total estimated annual energy consumption incurred for intra-city transportation of students, staff, administration and faculty in KwHe/annum.	Annual reductions to theoretical minimum.	No data	No data
E1.9	Total annual energy consumption incurred for extra-regional transportation of students, staff, faculty and administration which was reimbursed travel by the university, in KwHe/annum. [Aircraft fuel calculated as equivalent in energy density / L. to gasoline, and 3.5 L./100 passenger-kms. Air Transport Action Group, www.atag.org]	Annual reductions to theoretical minimum.	No data	1,139,154 KwHe
E1.10	Percent of annual energy obtained from renewable energy sources (hydro-electric, wind, solar thermal, solar PV, biomass, tidal, geothermal) (and KwH equivalent).	Increasing annually to 100%.	42.7%	43.9

E1.11	Total annual stationary fuel consumption in liters (and KwH equivalent).	Annual reductions to theoretical minimum.	No data	No data
E2.1	GHG emission reduction.	Documented evidence of GHG emission reductions.	+ 17.1% (Over 1990)	+ 15.9% (Over 1990)
E6.1	Measurement and record systems established and maintained.	Record system in place.	Under development	Done
E7.1	Annual report of energy management performance.	Tabled annually.	CSO annual report.	CSO annual report.
E7.2	Post Energy Management Policy and performance reports to website.	Policy and reports posted.	Done	Done

Appendix C
Green Procurement Performance Indicators

Indicator	Target	Performance	
		FY2006	FY2007
GP1.1 Documentation that each procurement decision involving the purchase of $X or more of a good, material, product or service, has included a needs assessment as well as a demand-reduction plan whenever possible.	All procurement decisions include a needs analysis and demand reduction plan.	No data	$ Threshold still to be established.
GP2.1 Percentage of total annual dollar value of equipment purchases for which life-cycle cost analysis was applied.	Increasing annually to 100%.	No data	No data
GP3.1 Total number of goods, materials, products or services procured by the university that contain or use toxic or carcinogenic compounds, or the use of which may pose a threat to human health or well-being.	Decreasing annually to zero.	No data	No data
GP3.2 Documentation that when goods, materials, products or services are procured that contain toxic ingredients or components, a thorough review of alternatives was undertaken and included in the procurement decision.	All toxic product procurement is accompanied by alternative search / review reports.	No data	No data
GP4.1 Percentage of total annual dollar value of all goods, materials and services procured from local and neighborhood suppliers.	Increasing annually to theoretical maximum.	No data	No data
GP4.2 Percentage of goods, services and materials procured annually that are approved / certified as environmentally friendly / sustainable.	Year over year increase in %age to practical maximum.	No data	No data
GP4.3 Percentage of goods, services and materials procured annually that are sourced from certified / approved environmentally friendly suppliers.	Year over year increase in %age to practical maximum.	No data	No data
GP5.1 Total annual weight (in kilograms) of metals and / or metal products procured by the university.	Decreasing annually to theoretical minimum.	No data	No data
GP5.2 Total annual weight (in kilograms) of metals and / or metal products procured by the university from recycled sources.	Increasing annually to 100% of consumption.	No data	No data
GP5.3 Total annual weight (in kilograms) of wood and paper products procured by the university.	Decreasing annually to theoretical minimum.	No data	No data
GP5.4 Total annual weight (in kilograms) of wood and paper products procured by the university from recycled sources.	Increasing annually to 100% of consumption.	No data	No data
GP5.5 Percentage of total number of goods, materials and products that contain recycled material content.	Positive year over year increase as products become available, approaching 100%.	No data	No data

GP5.6 Total annual embodied energy of the products, materials, goods, and services procured by the university.	Year over year decrease.	No data	No data
GP6.1 Summary of educational, professional development, and general awareness activities designed to encourage research and increase participation in green procurement activities, practices, and product choices.	Anecdotal reports & number (should increase to some optimum?)	No data	No data
GP7.1 Percentage of RFPs, tenders and supplier contracts that included the university's green procurement policy.	100%	No data	100%
GP9.1 Evidence that mass / volume-based measurements are being made of all materials and products procured by the university.	Mass measurement system in place.	Not in place.	Under development.
GP10.1 Annual report of green procurement performance.	Tabled annually.	Done	Done
GP10.2 Post Green Procurement Policy and performance reports to website.	Policy and reports posted.	Done	Done

Appendix D
Land Use and Property Management Performance Indicators

Indicator	Target	Performance	
		FY2006	FY2007
L1(b).1 Annual amount of chemical herbicide applied to university landscapes in liters.	0 kgs. or 0 liters.	No data	0 liters.
L1(b).2 Annual amount of artificial pesticide used on university landscapes in liters.	0 kgs. or 0 liters.	No data	3.4 kgs.
L1(b).3 Annual amounts (in kgs., liters, gms, etc) of chemicals applied to university landscapes for any purpose (e.g., chemical fertilizers, ice-melt compounds, dust control products, etc.).	Annual reductions to practical minimum.	No data	3,080 kgs. (Mtn. Organic Ice Melt)
L1(c).1 Percentage of landscaping using xeriscaping techniques and materials.	Increasing annually to 100%.	No data	70%
L1(c).2 Annual quantity in liters of fossil fuels consumed by grounds maintenance machinery and vehicles (mowers, snow blowers, sidewalk plows, etc.), adjusted for annual precipitation.	Decreasing year over year to practical minimum.	No data	940 liters
L1(d).1 Percentage of yard wastes composted.	Increasing annually to 100%.	0%	100%
L1(e).1 Percentage of grounds watering supplied from grey water / storm water recycling compared to use of city treated water.	Increasing annually to 100%.	No data	0%
L2.1 Percentage of paper products (toilet paper, hand towels, etc.) consumed annually which are composed of 90% or more post-consumer recycled stock.	100%	No data	100%
L2.2 Percentage of cleaning products defined as all purpose/hard surface, industrial cleaner, toilet bowl cleaner, floor cleaner/degreaser, glass, carpet cleaner, spot and stain remover, which meet the equivalent of, or be certified by, Standard CCD-146, CCD-147 and CCD-148 Environmental Choice.	100%	No data	90%
L2.3 Percentage of cleaning products defined as graffiti remover, drain cleaner and floor stripper for which the following information is disclosed to Property and Plant: - Hazardous ingredients present - Biodegradability of total product - Percent VOC in product - pH - Fragrance	100%	No data	1%

- Type of dye - Oral toxicity of product - Presence of optical brightener - Third party certification (if available)			
L2.4 Percentage of cleaning products used annually that contain: - Any known or suspected carcinogens/teratogens/mutagens as per IARC, ACGIH - Endocrine disrupters - Phosphates - Substances listed on CEPA toxic substance lists	0%	No data	0%
L2.5 Percentage of cleaning products used annually the unused portions of which are designated as hazardous wastes (as defined by CEPA or Federal Transportation of Dangerous Goods Act.).	0%	No data	0%
L3.1 If landscape design and construction has occurred since the last reporting period, documented evidence that xeriscaping / permaculture and organic maintenance regimes have been employed.	Document as required.	No data	Report on file in CSO.
L5.1 Documented evidence from RFPs that LEED standards or better have been specified for bidders.	Document as required.	No data	100% (Provincial Policy)
L7.1 Measurement and record systems established and maintained.	Record system in place.	Under development	Done
L8.1 Annual report of land use and property management performance.	Tabled annually.	CSO annual report	CSO annual report
L8.2 Post Land Use and Property Management Policy and performance reports to website.	Policy and reports posted.	Done.	Done

Appendix E
Materials Conservation (Waste Reduction) Performance Indicators

Indicator	Target	Performance	
		FY2006	FY2007
W1.1 Annual total weight (in kilograms) of municipal solid waste sent to landfill.	Decreasing annually to theoretical minimum. 5 year goal; interim targets.	150.6 T.	77.8 T.
W1.2 Annual total weight (in kilograms) of materials diverted from landfill and recycled.	Increasing annually to theoretical maximum. 5 year goal; interim targets.	83.1 T.	94.4 T.
W1.3 Percent of waste reduced over previous year's waste production.	derived	+ 3.5%	- 26.3%
W.1.4 Percentage of the total weight (in kilograms) of waste destined for landfill or incineration comprised of recyclables (including organic wastes):	derived	No data	89.03%
W1.5 Annual total weight of organic materials composted (in kilograms). All organic materials (including all food and yard wastes) should be included in the calculation.	Increasing annually to theoretical maximum. 5 year goal; interim targets.	0	1.5 T.
W2.1 Annual total weight (in kilograms) of solid and liquid hazardous waste produced by or discharged from university facilities and operations.	Decreasing annually to theoretical minimum. 5 year goal; interim targets.	No data	0.65 T. Solids 1,000 L. Liquids
W2.2 Reduction of hazardous wastes produced by the university over previous year.	derived	No data	Not calculable.
W2.3 Annual total weight (in kilograms) of solid and liquid hazardous wastes recycled (either on- or off-campus).	Increasing annually to theoretical maximum. 5 year goal; interim targets.	No data	0 T. On campus. Unknown off campus.
W2.4 Percentage of total annual weight (in kilograms) of solid and liquid hazardous waste recycled.	derived	No data	No data
W5.1 Summary of educational, professional development, and general awareness activities designed to encourage research and increase participation in waste reduction activities, practices, and product choices.	Anecdotal reports.	No data	On file in CSO.
W5.2 Participation in educational, professional development, and general awareness activities that encourage research and increase participation	Increasing year over year to practical maximum.	No data	No data

	in waste reeducation activities, practices and product choices.			
W6.1	Annual report of waste reduction performance.	Tabled annually.	Done	Done
W6.2	Post Waste Minimization Policy and performance reports to website.	Policy and reports posted.	Done	Done

Appendix F
Sustainable Transportation Performance Indicators

Indicator	Target	Performance	
		FY2006	FY2007
T1(a).1 Total annual fossil fuel consumption for university fleet vehicles.	Reducing annually to theoretical minimum.	No data	2,783 L.
T1(a).2 Total estimated annual fossil fuel consumption incurred from reimbursed air travel by university faculty, students or support staff. (Total passenger-kms traveled X Av. air travel per passenger-km fuel consumption) = Total fossil fuel consumption. [Aircraft fuel efficiency = 3.5 L./100 passenger-kms. Air Transport Action Group, www.atag.org 2008]	Reducing annually to theoretical minimum.	No data	104,608 L.
T1(a).3 Total estimated annual fossil fuel consumption incurred from reimbursed automobile travel by university faculty, students or support staff. (Total passenger-kms traveled X Av. auto per passenger-km fuel consumption) = Total fossil fuel consumption.	Reducing annually to theoretical minimum.	No data	12,589 L.
T1(a).4 Total estimated annual fossil fuel consumption incurred from reimbursed intra-city bus travel by university faculty, students or support staff. (Total passenger-kms traveled X Av. intra-city bus per passenger-km fuel consumption) = Total fossil fuel consumption.	Reducing annually to theoretical minimum.	No data	No data
T1(a).5 Total estimated annual fossil fuel consumption incurred from reimbursed inter-city bus travel by university faculty, students or support staff. (Total passenger-kms traveled X Av. inter-city bus per passenger-km fuel consumption) = Total fossil fuel consumption. [Bus fuel efficiency = 0.03 L / passenger-km. Strickland, James (2006) Fuel efficiencies of different modes of transportation. http://strickland.ca/efficiency.html 2008]	Reducing annually to theoretical minimum.	No data	22.1 L.
T1(a).6 Total estimated annual fossil fuel consumption incurred from reimbursed rail travel by university faculty, students or support staff. (Total passenger-kms traveled X Av. rail per passenger-km fuel consumption) = Total fossil fuel consumption.	Reducing annually to theoretical minimum.	No data	0
T1(a).7 Total estimated annual fossil fuel consumption incurred from intra-city bus travel from residence to campus and back by students, faculty and support staff. (Total passengers X Average km / trip X Average trips per year X Av. Intra-city bus per passenger-km fuel consumption) = Total fossil fuel consumption.	Reducing annually to theoretical minimum.	No data	No data
T1(a).8 Total estimated annual fossil fuel consumption incurred automobile travel from residence to campus and back by students, faculty and support staff. (Total passengers X Average km / trip X Average trips per year X Av.	Reducing annually to theoretical minimum.	No data	No data

automobile per passenger-km fuel consumption) = Total fossil fuel consumption.			
T1(a).9 Total estimated annual fossil fuel consumption incurred from carpooling and ride sharing travel from residence to campus and back by students, faculty and support staff. (Total passengers X Average km / trip X Average trips per year X Av. HOV per passenger-km fuel consumption) = Total fossil fuel consumption.	Reducing annually to theoretical minimum.	No data	No data
T1(b).1 Percentage of total area of campus property devoted to parking lots, streets and lanes.	Constant or reducing over time.	No data	No data
T1(c).1 Total annual emission of GHGs incurred from use of fleet vehicles.	derived	10.1 T. CO_2e (Estimate)	6.6 T. CO_2e
T1(c).2 Total annual emission of GHGs incurred from intra-city travel by all modes from residence to campus and back by students, faculty and support staff.	derived	No data	No data
T1(c).3 Total annual emission of GHGs incurred from reimbursed travel by all modes by students, faculty and support staff.	derived	336.6 T. CO_2e (Probably under-reported)	703.4 T. CO_2e
T1(d).1 Percentage of Transit buses with special access features to accommodate the needs of seniors, children, and the disabled.	100%	No data	No data
T1(d).2 Percentage of transportation-related facilities on campus with access features for seniors, children and disabled.	100%	No data	No data
T1(d).3 Cost of Transit fares as a percentage of annual income for students, faculty, and staff.	derived	No data	No data
T1(d).4 Adequacy of Transit service including air quality in buses and at stops/shelters; seating space per person within buses; scheduling of service; timely scheduling and routing information for Transit users; Transit user satisfaction ratings.	Improving annually to practical maximum.	No data	No data
T2.1 Attendance numbers for seminars, information events, and training sessions for students, faculty or support staff that address sustainable transportation literacy.	Increasing annually to practical maximum.	No data	No data
T2.2 Pre-training-post-training change scores measuring knowledge about and use of sustainable transportation modalities and services by students, faculty and support staff.	Positive change values.	No data	No data
T2.3 Anecdotal reports of information services, equipment, activities or events that promote sustainable transportation on campus.	Reports tabled.	No data	On file in CSO.
T2.4 Percentage of students, faculty and support staff who regularly walk to campus.	Increasing annually to practical maximum.	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office
T2.5 Percentage of students, faculty and support staff who regularly cycle to campus.	Increasing annually to practical maximum.	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office
T2.6 Percentage of students, faculty and support staff who regularly use urban	Increasing annually to	2005 Wpg Transit	2005 Wpg Transit

mass transit to travel to campus.	practical maximum.	Study – CSO Office	Study – CSO Office
T2.7 Percentage of students, faculty and support staff who regularly use carpooling or ridesharing to travel to and from campus for work or classes.	Increasing annually to practical maximum.	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office
T2.8 Percentage of students, faculty and support staff who regularly drive single occupant vehicles to campus.	Decreasing annually to practical minimum.	No data	No data
T2.9 Participation rates for students, faculty and support staff in Resource Conservation Manitoba's Commuter Challenge.	Increasing annually to practical maximum.	No data	No data
T2.10 Avoided trips represented by distance-education course delivery, teleconferences, telecourse enrollments, etc.	Increasing annually to practical maximum.	No data	No data
T4.1 Evidence that such measurement and monitoring system is in place.	Documented system.	Not in place.	Not in place.
T5.1 Annual report of transportation activities.	Tabled annually.	Done	Done
T5.2 Post Sustainable Transportation Policy and performance reports to website.	Policy and reports posted.	Done	Done

Appendix G
Water Use Management Performance Indicators

Indicator	Target	Performance	
		FY2006	FY2007
WR1.1 Percentage of all water fixtures operating on campus which are water conserving models.	Increasing annually to 100%.	No data	No data
WR1.2 Evidence of conformance with neutralization of toxic, chemically active, or biohazard substances before discharge to waste water stream.	Periodic verification reports.	No data	No data
WR2.1 Total annual volume of potable water in liters consumed by the university.	Report.	45,804,555	25,444,612
WR2.2 Percentage of total annual volume of water for which non-potable sources are acceptable (e.g., toilets, irrigation) supplied from grey water and/or storm water collected annually (in liters) that is reused on-site.	Increasing annually to 100%.	No data	No data
WR2.3 Total storm water recovered and treated / recycled (in liters).	Increasing annually to 100%.	0	0
WR6.1 Summary of educational, professional development, and general awareness activities designed to encourage research and increase participation in water conservation activities, practices, and product choices.	Anecdotal reports.	No data	No data
WR6.2 Participation in educational, professional development, and general awareness activities that encourage research and increase participation in water conservation activities, practices and product choices.	Increasing year over year to practical maximum.	No data	No data
WR7.1 Annual report of water use management performance.	Tabled annually.	Done	Done
WR7.2 Post Water Use Management Policy and performance reports to website.	Policy and reports posted.	Done	Done