The University of Winnipeg
Campus Sustainability Performance Report

1 April 2008 – 31 March 2009
(Fiscal Year 2008)

Campus Sustainability Office
The University of Winnipeg
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Contents

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Executive Summary

This document represents The University of Winnipeg's third 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 FY2008 include:

- **Academic Initiatives** – A Campus Sustainability Recognition Award has been established for faculty, staff and students who make noteworthy contributions to campus sustainability. Considerable input was offered to the development of a procedure for tracking travel activities of students and employees of the University, thus improving GHG tracking and laying the groundwork for a carbon off-set purchasing process.
- **Air Quality Management** – The University posted an overall GHG emission *increase* of 4.7% in FY2008, which is at least partly attributable to the fact that the building areas under management as well as total Heating Degree Days increased slightly for FY2008 compared to FY2007. The University posted a 1.1% *decrease* in emissions from natural gas, an 11.8% *decrease* in emissions from consumption of electricity, but a 24.3% *increase* from staff / faculty travel activities. To achieve the University's Kyoto Protocol commitment by the 2012 deadline, total GHG emissions must decrease by 719 Tonnes CO_2e, or 17.4% from FY2008 levels.
- **Energy Conservation** – Overall energy consumption *decreased* 5.6% over FY2007, even though the FY2008 heating season was about 2% more severe than FY2007, and more sources of energy use were accurately accounted. Most energy savings were achieved through conservation of electricity. Nevertheless, the cost of energy rose nearly 7.5% in FY2008—a rate of increase that will double the cost of energy within 9 years. The University currently meets almost 41% of its energy needs from renewable (hydroelectric) sources.
- **Green Procurement** – Greening procurement practices continue to represent a major opportunity for the University to both conserve money and advance sustainability objectives. Sustainability requirements have been strengthened in major RFPs and the committed Purchasing Department continues to press for campus-wide compliance with life-cycle cost accounting for major procurement decisions. The beginnings of a system are now in place for tracking masses and volumes of *materials* moving through the University—a more relevant measure of sustainability performance than mere cost accounting.
- **Land Use Planning and Property Management** – Renovations to the CanWest Centre for Theatre and Film (T21) and Wesley Hall were completed in FY2008 but it is too early to assess the sustainability benefits which may have been achieved. In 2007, the Provincial Green Building Policy mandated LEED Silver performance ratings for new public buildings receiving Provincial funding. For contracts initialed before this date, building projects attempt to "shadow" LEED requirements to the greatest extent achievable within the project budget and limitations presented by each site. Construction and/or site preparation work commenced on the Richardson College for the Environment, the McFeetor's Hall Student Residence and the UWSA Day Care Centre in FY2008, all of which are slated to be constructed to LEED Silver standards or better.
- **Materials Conservation (Waste Reduction)** – Progress continues on waste reduction (materials conservation) from University operations. Materials diverted to recycling increased 10.6% and a spectacular increase of 640% in organic materials being composted marked the success of a management regime that now captures both pre- and post-consumer organic materials. There was also an overall 65.7% reduction in hazardous waste. Recycling of batteries and toner cartridges continues, but despite these efforts, total waste going to landfill increased 60.5%--reflecting, it is now believed, anomalously low measures for FY2007. 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 1 million impressions from the copying total in FY2007 of 15 million impressions, reducing it to 14 million in FY2008 (down from 17 million in FY2006) achieving both resource and financial savings.

- **Social Sustainability** – No work was undertaken to develop a social sustainability policy framework for the University in FY2008. While the Campus Sustainability Office is aware that the University has a policy level commitment to address social sustainability in its overall management system, there simply have not been the resources available to pursue this objective at this time. The University continually engages the community and the surrounding neighborhood through its Innovative Learning Centre, Global Welcome Centre, Wii Chiiwaakanak Centre, Education Mentorship, Service Learning, and Model School initiatives. Significant contributions to sustainability education and on-campus activism have also been made by the USWA, EcoPIA, and GESSA student organizations, and faculty and students of The University of Winnipeg Collegiate. While these different activities are not integrated into a single policy and planning framework, they are nevertheless contributing in signal ways to the social sustainability of the University and its surrounding neighborhood.
- **Sustainable Transportation** – With special funding from Climate and Green Initiatives Manitoba, and in partnership with the UWSA, the University has successfully completed detailed architectural design work for an innovative system of Bike Stations to help promote more active and sustainable transportation choices on campus. Additional Winnipeg Transit stops were opened in FY2008 at the south edge of the campus, dedicated bike lanes have been included in the Greenway development program, and much more complete data collection procedures are now in place to track staff and faculty travel on University business. Efforts continue to develop collaborative partnerships with community organizations such as Bike To The Future, One Green City, and the Active Living Coalition. Unfortunately, total fossil fuel consumption for reimbursed business travel is estimated to have increased 26.5%, total travel-related GHG emissions increased 24.3%, and total fleet vehicle fossil fuel use increased 26.4%--some of these "increases" being attributable to more complete data sets than in FY2007.
- **Water Use Management** – Water consumption decreased by 31.7% in FY2008 over the previous year reflecting a small drop in enrolment, measures that were instituted to reduce water use in boilers and cooling towers, and that fact that two major buildings were under renovation which reduced occupancy levels and hence water consumption. Specification of water-conserving fixtures for Wesley Hall and the CanWest Centre for Theatre and Film may also have contributed to consumption reductions in these two buildings.

While the University's performance on quantitative measures of sustainability is something we can all look forward to improving, significant 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: Scope and Reporting Period

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 1 April 2008 to 31 March 2009 (FY2008).

The Campus Sustainability Office

Mission and Mandates

The mission of the 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 environment arising from University operations.

Professional Staff

The Campus Sustainability Office is currently staffed by a part-time (.6) Director, and a part-time (.6) 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 FY2008:

Providing Leadership, Facilitation and Planning Coordination –

- The CSO provides general secretariat functions to the Campus Sustainability Council (16 members, meeting monthly) as well as its various Working Groups which in FY2008 included the Academic Initiatives Working Group (9 members, meeting monthly), the Materials

Conservation Working Group (9 members, meeting monthly), the Social Marketing Working Group (9 members, meeting bi-weekly), the Sustainable Transportation Working Group (10 members, meeting monthly until the working group was adjourned in November 2008), and the Campus Sustainability Representatives (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 Campus Sustainability Representatives who are chaired by the CSO Office Assistant. In FY2008, these bodies together met for a total of 57 minuted meetings to advance the process of campus sustainability.

- On-going collaboration and articulation of the activities of the Campus Sustainability Office with student-led initiatives and groups including the University of Winnipeg Students' Association (UWSA), Ecological People in Action (EcoPIA), Sustainable University Now, Sustainable Earth Tomorrow (SUNSET) and the Geography and Environmental Students Association (GESA) so that all can be maximally effective.
- Provided technical support and mentorship to the University of Winnipeg Students' Association Sustainability Committee in developing their strategy for introducing a U-Pass Program to encourage increased ridership of students on Winnipeg Transit.
- Established a Campus Sustainability Recognition Awards Committee which developed the procedure, nomination protocol, nomination forms, and nomination evaluation process for both the student and faculty/staff Campus Sustainability Recognition Awards. The first award will be conferred in the Autumn of 2008.
- The Social Marketing Working Group developed a revised and better-designed general information brochure for the Campus Sustainability Office, as well as bookmarks with sustainability tips for distribution from the UW Bookstore.
- Collaborated with UW Bookstore Manager to print sustainability messages on re-usable book bags dispensed in place of single-use plastic bags from the UW Bookstore.
- Developed initial position description and first draft of grant submission to the Sustainable Development Innovations Fund for financial assistance to create a position as Materials Conservation Coordinator for the UW, December 2008.
- Successfully secured funding from Science, Technology, Energy and Mines for initial architectural design work for UW's cycling amenity facilities (Bike Stations) to promote more sustainable transportation choices.
- Held preliminary meeting with staff of Centre for Innovation in Teaching and Learning (CITL) to explore ways that instructional technologies might be further promoted at UW which have the effect of reducing the ecological footprint of instruction and learning, January 2009.

Monitoring and Reporting Sustainability Performance –

- Continued negotiations with eMerge Technologies, 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, and the potential to seamlessly integrate UW systems with Provincial and Federal reporting requirements on-line.
- Implemented and expanded 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, when available.

- Successful development of a Travel Distance Reporting Procedure with approval of the Academic Initiatives Working Group and the Campus Sustainability Council which will allow the University to track GHG emissions arising from use of different transportation modalities by students, faculty and support staff traveling on University business.
- Launched a fully revised, updated and expanded campus sustainability website.
- Launched a new Campus Sustainability Newsletter "Simply Green" detailing issues, personal action options, and a variety of other reportage related to sustainability topics on campus. This attractive and informative publication is being produced by Suzanne Martin, a member of our Education Department, and distributed via email to all faculty and staff, as well as by document download from the Campus Sustainability Office website.
- Issued an advisory paper on drinking water quality to support implementation of a campus-wide ban on sale of bottled water, the first University in Canada to implement such a measure.
- Conducted first site survey of all University properties to measure green space areas, identify transit and facility accessibility issues, and count / catalogue trees in UW's "urban forest", May 2008.
- Prepared a summative report on campus sustainability policies and performance for CAUBO (Canadian Association of University Business Officers), November 2008.
- Authored final report for Manitoba Climate Change Action Fund program funding to UW Bike Station design and development project, March 2008.
- Launched research design and research ethics review process for a comprehensive Sustainable Transportation Survey of UW students, staff, and faculty to help inform and guide promotion of more sustainable transportation choices and behavior.
- Research Network for Business Sustainability – Report on key campus sustainability centers and activities submitted through Soham Baksi, Dept. of Economics, 21 Nov 2008.

Documenting Sustainability-relevant Policies and Procedures –

- Undertook specialized training in CSA / ISO 14064 GHG calculation procedures and prepared a fully documented Green House Gas Manual for the University of Winnipeg.
- Documented a procedure for travel distance reporting from all departments to the CSO, thus allowing preliminary calculation of travel-incurred GHG emissions, and procurement of carbon off-sets for travel activities.
- Documented a formal procedure for conferring a Campus Sustainability Recognition Award for students, staff, faculty, or campus-based organizations making noteworthy contributions to sustainability performance.
- Represented the UW at a Sustainable Parking Policy webinar offered under the auspices of Resource Conservation Manitoba, February 2009.

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

- Prepared and submitted to the office of the Global College a proposal to convene a major conference on Human Factors as Determinates of Sustainable Livelihood.
- Participation as presenter for the Education for Sustainable Development Conference, convened by Manitoba Education and its Education for Sustainable Development Working Group, November 2008.

- The Campus Sustainability Office offered a general information presentation both to incoming first year students during “O-week” activities as well as an orientation presentation for new sessional and permanent faculty members.
- The Social Marketing Working Group of the Campus Sustainability Office developed a Sustainable Lifestyles Contest, a four week trivia contest with weekly questions printed in the *Uniter*, and identified weekly and grand prize winners.
- A series of Sustainable Lifestyles Workshops were offered during January, February and March 2009, consisting of winter themed sustainability topics. The three workshops in 2009 taught how to cook with winter vegetables, how to start seedlings indoors, and how to make green cleaning products at home.
- The Campus Sustainability Representatives met in October 2008 for a presentation on Waste Reduction Week.

Liaison and Communication with External Stakeholders –

- 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, Brandon University, and Canadian Mennonite University.
- Periodic meetings between the Director, Campus Sustainability and senior management at Green Manitoba, Manitoba Hydro, Climate & Green Initiatives Directorate, Science, Technology, Energy and Mines Manitoba, Transportation and Government Services Manitoba, Conservation Manitoba and the City of Winnipeg as required to promote University of Winnipeg campus sustainability projects.
- 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.
- Successful engagement as a beta-test development partner with Science, Technology, Energy and Mines Manitoba, through the Climate and Green Initiatives Office, to implement the Manitoba Climate Action Portal and the Canadian Carbon Exchange—systems that enable ISO-compliant on-line reporting of GHG emissions, GHG reduction program development, and Clean Development Mechanism (CDM)-qualified off-set purchases.
- Workplace representative for the Workplace Commuter Challenge hosted by Resource Conservation Manitoba. This event occurred from 1-7 June 2008 and aims to help promote active transportation to and from the workplace.
- The Campus Sustainability Office served as a co-representative (with Human Resources Staff) for the Workplace Step by Step: Walk for Wellness Challenge hosted by Winnipeg in Motion. The challenge is a pedometer-based active living program and ran for twelve weeks during the Spring and Summer of 2008 for all University of Winnipeg staff and faculty who wished to participate.
- Participated in the City of Winnipeg Rapid Transit Forum, April 2008.
- Hosted the Annual General Meeting of the Board of the Canadian Network for Environmental Education and Communication (EECOM) at UW—the foremost national network of environmental educators and communicators in Canada.

- Hosted visit by VP-Finance and the Operations Director from the University of Prince Edward Island on tour of UW facilities and orientation to UW sustainability management system.
- Participated in a Bio-fuels Forum, City of Winnipeg, June 2008.
- Convened a meeting among representatives from Conservation Manitoba, St. Boniface College, the International Institute for Sustainable Development, and The University of Winnipeg to establish partnerships between UW Global College and IISD to place UW grads in developing countries as sustainable development practitioner interns, June 2008.
- Participated in Manitoba Science, Technology, Energy and Mines Green Registry website beta-test process to establish a provincial, ISO-compliant on-line GHG reporting system in which UW can eventually participate, July 2008.
- Met with VP Operations for the Forks Market to offer UW's experience with establishing a composting program for organics materials management, September 2008.
- Extensive beta-testing and feedback provided for Green Manitoba's U-Trac on-line reporting system for solid waste and recycling reporting, October 2008. This system provides the basis for UW's reporting of its recycling and waste minimization performance to retain provincial funding for waste reduction initiatives.

Participation in Development of University Infrastructure and Facilities –

- Participated in proposal review and decision process to evaluate a proposal from Sempa Power Inc., to install a hybrid gas/electric heating system for the University.
- Continued to provide significant direction to and support for UW Bike Station development as this project moves forward.
- Participated in a consultation with VP – Research and several UW faculty respecting "vertical farming" research facility development.
- Participated in a consultation respecting Greenway development planning, March 2009.

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 FY2008, the Academic Initiatives Working Group has:

- A **Campus Sustainability Recognition Award** was established to recognize noteworthy contributions to advancing campus sustainability during the last completed academic year. Two awards are conferred, one for a student or student organization and a second award for a faculty member, support staff employee or an organization or program of the University.
- The **Academic Working Group of the Campus Sustainability Council** provided considerable developmental advice and input to procedures for tracking GHG emissions incurred from travel on University business, academic and research activities.
- **The Ecological Footprint of Instruction** – A proposal was developed and submitted to the President's Innovative Projects Fund and the Erica and Arnold Rogers Learning and Teaching Fund to conduct research on approaches to assessing and reducing the ecological footprint of instruction, learning and committee work.
- **On-line Instructor and Course Evaluations** – The Senate Committee for Student Evaluations launched a review of the potential for implementing an on-line instructor review and evaluation process, thus potentially avoiding the use of paper forms.
- **Paperless Research Proposals / Research Ethics Review Process** – Discussions were launched with the University Research Office to explore options for paperless submissions of research proposals, and particularly for research ethics review applications. This process will be taken another step in the next fiscal year.

Air Quality Management

University operations affect indoor air quality (IAQ) in a number of ways including: (a) emission of green house gasses (GHGs) 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, and occasionally from delivery trucks idling in loading bays of the Shipping and Receiving Department. Of these emissions, GHG emissions are certainly the most significant. The University is committed to reducing 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 Management Achievements for FY2008:

GHG Emissions:

The University's GHG emission performance for FY2008 is summarized in the table below and compared to a GHG emission baseline estimated for FY1990 as well as measured performance for FY2007. Since last year, the University posted a 1.1% *decrease* in emissions from natural gas, an 11.8% *decrease* in emissions from use of electricity.

Counterbalancing these improvements was a 26.4% *increase* in emissions from fleet vehicle fuel consumption over FY2007 and a 24.3% *increase* in emissions from business travel. Some of these increases are the result of more complete data reporting than in any past year. There is also an apparent increase of 278% in emissions from municipal solid waste, despite a composting program which is now diverting significant amounts of organic materials from landfill. This is probably an anomalous value which is attributable more or less entirely to wildly variable and unreliable data supplied by the University's MSW contractor.

Aggregately, University GHG emissions *increased* by 4.7%—a value partly attributable to the fact that there were 1.8% more Heating Degree Days in FY2008 than in FY2007, indicating a harsher winter overall. The University also slightly increased the area of its building inventory by 0.7% during FY2008, which should also increase energy consumption and GHG emissions.

To achieve the University's Kyoto Protocol commitment by the 2012 deadline, total GHG emissions must decrease by 718.9 tonnes CO_2e, or 17.4% from FY2008 levels. This is a sign of progress as the University faced an 18.9% reduction target in FY2007.

UW GHG Emission Performance Summary – FY2008					
Factor	**"Base Year" FY1990**	**FY2007 (% of total)**	**FY2008 (% of total)**	**% change FY2008 over FY1990**	**% change FY2008 over FY2007**
Area Managed (m^2)	74,903	91,750	92,466	+ 23.4	+ 0.7
Total FCEs	24,675	30,626	30,160	+ 22.2	- 1.5
Heating DD (℃)	5,708	5,897	6,002	+ 5.1	+ 1.8
T. CO_2e from Electricity	310.1	203.7 (5.2%)	179.6 (4.4%)	- 42.1	- 11.8
T. CO_2e from Natural Gas	2,676.6	3,223.9 (81.9%)	3,187.8 (77.3%)	+ 19.1	- 1.1
T. CO_2e from Fleet Vehicles	10.0	14.4 (0.36%)	18.2[1] (0.44%)	+ 82[1]	+ 26.4[1]
T. CO_2e from Business Travel	393.3	435.9 (11.1%)	542.0 (13.1%)	+ 37.8	+ 24.3
T. CO_2e from MSW	231.3	59.1 (1.5)	223.4[2] (5.4%)	- 3.4	+ 278.0[2]
Carbon Sequestration					
Campus Urban Forest T. CO_2e	No data	- 1.15[3]	- 1.15[3]	No data	No change.
Total T. CO_2e All Sources	**3,621.3**	**3,935.9**	**4,122.8**	**+ 13.9**	**+ 4.7**
Reduction in total CO_2e from FY2008 needed to meet Kyoto by 2012:			**718.9 (17.4%)**		

1 While the values reported for fleet vehicle emissions appear large, they reflect incomplete data collected from previous years. In FY2008, complete data were available for all vehicles in the fleet.

2 Carbon emissions from Municipal Solid Waste going to landfill for FY2007 were anomalously low due to various measurement challenges posed by the University's waste contractor. Obtaining accurate weights on materials going to landfill continues to be a source of serious data distorting in calculating emissions from this source reliably. The CSO expects that weights reported for FY2008 are anomalously high. We continue to work with the waste contractor to find a resolution to this issue.

3 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 FY2008, the Safety Office received 9 complaints (down from 15 complaints in FY2007), 7 of which required testing, and 3 of which are still under investigation (down from 4 still under investigation in FY2007).[3]

- A plan was finalized to manage all sources of asbestos in University facilities and provide for removal / containment.[3]
- Five building surveys were completed for asbestos containing equipment and finishes.[3]
- 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.
- $150,000 was invested in asbestos removal from doors, pipes, and vinyl-asbestos floor tiles and general asbestos remediation activities.[1]
- Quantities of pesticides applied indoors was estimated to be approximately the same as for FY2007 (4,200 g.. / 92,950 m^2) but exact data were not available as the position responsible for reporting was vacant due to medical leave.
- Commissioning of Wesley Hall HVAC upgrades has substantially improved comfort and IAQ in this building.[1]

Air Quality Management Initiatives for FY2009:

- **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.
- $950,000 is being invested to replace flooring, some of it vinyl-asbestos, with low VOC, environmentally friendly linoleum sheet stock.[1]
- Asbestos surveys on all remaining University buildings will be completed in FY2009-10.[3]
- **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:

- A continuing challenge is achieving measurable improvements in IAQ performance as well as strategic and efficient allocation of limited resources in the absence of a comprehensive audit of University facilities and the prevailing piecemeal approach to funding sustainability upgrades and infrastructure maintenance.[1]

Energy Use Management

Energy consumption by the University includes electricity, natural gas, fleet vehicle and stationary fuels. Consumption values have been reported for FY2007 and FY2008 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. A conversion has also been shown expressing these same quantums of energy in GJ (gigajoules)—also a common way of expressing energy consumption. Both *absolute* energy values (KwHe) and *intensity* values (KwHe/FCE (Kilowatt-hour equivalent per Full Course Equivalent) and KwHe/m^2 (Kilowatt-hour equivalent per square meter of managed floor space) are included. In general, absolute values are considered a more valid measure of sustainability performance, while intensity measures reflect improvements in efficiency but may in fact mask 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 FY2008, overall energy consumption *decreased* 5.6% over FY2007. FY2008 also witnessed 1.8% more Heating Degree Days than FY2007, hence placing slightly increased demands on both electricity and natural gas, the later being the University's primary heating fuel. Thus the net year over year reduction in energy consumption is a noteworthy achievement. Also notable is the fact that the total cost of energy to the University increased 7.5% in a single year.

Added to the energy use profile this year are estimated data for stationary fuel consumption for the University's back-up generators used both in case of electricity outages and to supplement electricity supplies when interruptible gas is reduced during extremely cold weather.

The University currently meets almost 41% of energy needs from renewable sources, a 6.4% reduction from FY2007 which is partially attributable to improved reporting of fleet fuel and stationary fuel use that in FY2007 were either unreported or under-reported.

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	FY2007	FY2008	% Change FY2008 over FY2007
Electricity (KwH)	14,143,509	12,469,447	- 11.8
Electricity Cost ($ 000)	649.4	716.4	+ 10.3
Natural Gas (KwHe)[1]	18,053,726	17,834,706	- 1.2
Natural Gas Cost ($ 000)	648.4	672.9	+ 3.8
Fleet Vehicle Fuel (KwHe)[2]	59,395	75,015	+ 26.3
Fleet Fuel Cost ($ 000)	6.8	7.8	+ 14.7
Stationary Fuel (KwHe)	No data	58,320	not calculable
Stationary Fuel Cost ($ 000)	No data	4.8	not calculable
Total Energy (KwHe)	**32,256,630**	**30,437,488**	**- 5.6**

Total Energy (GJ)[3]	**116,124**	**109,574**	**- 5.6**
Total Energy Cost ($ 000)	**1,304.6**	**1,401.9**	**+ 7.5**
% Renewable Energy	43.8	41.0	- 6.4
Celsius Heating Degree Days	5,897	6,002	+ 1.8
Energy (KwHe) / FCE	1,053	1,009	- 4.2
Energy (KwHe) / m^2	347	328	- 5.5

[1] 1 m^3 natural gas = 10.58 KwHe.
[2] 1 Liter gasoline = 9.72 KwHe.
[3] 1 KwH = 0.0036 GJ

Energy Use Management Achievements:

- The University continues to replace incandescent "pot" lights with compact fluorescent lamps thus achieving a 75% energy saving with each installation.[1]
- Installation of motion-sensor light controls in offices and classrooms as renovation / maintenance of these areas progresses.[1]

Energy Use Management Initiatives:

- **Power distribution system study** to identify potential savings achievable from the University owning its own transformers and distribution vaults.[1]
- **Upgrades to mechanical and HVAC systems** in buildings slated for deferred maintenance attention in FY2009.[1]
- **Window replacements and upgrades** to high efficiency sealed unit windows in Bryce, Manitoba and Centennial Halls. $850,000 have been allocated for these projects. Window upgrades will significantly reduce energy loss from these facilities.[1]
- **Roof Replacement Program** – The University is pursuing an on-going program of roof replacement which normally includes upgrades to roof insulation and consequent savings in energy.[1]

Energy Use Management Challenges:

- A continuing challenge is achieving measurable improvements in energy performance as well as strategic and efficient allocation of limited resources in the absence of a comprehensive audit of University facilities and the prevailing piecemeal approach to funding sustainability upgrades and infrastructure maintenance.[1]

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 fewer 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 in FY2008:

- Strengthened sustainable procurement requirements for vendors; adopted language encouraging recycled and refurbished products whenever applicable and giving preference to environmentally certified vendors (current standards used: EnergyStar, GreenGuard, ISO 14001, FSC).
- Encouraged vendors to go beyond baseline standards, giving preference to products that exceeded standards by 15% or more.
- More buy-in from vendors to principles of green procurement, including identification of material composition and focus on sustainable products.

- Ensuring that furnishings and equipment follow agreed-upon processes when no longer required to assess future possible use and then stored or disposed of in the most environmentally-friendly manner.
- Begun process of working with school boards and not-for-profit organizations to assess their needs and how the University can help increase usable lifecycles for furniture through donation and reuse of equipment (both directions).

Green Procurement Initiatives for FY2009:

- Begin measurement of wood, metal and petroleum products (ie. plastics) both entering and leaving the University. This will enable us to develop a baseline set of metrics to see how large is the resource-usage footprint we are generating for ongoing analysis.
- Analyze input and output of major resource groupings and determine how we can better minimize more harmful categories of resources and re-use or recycle other areas.
- Investing in furniture and equipment with a longer projected service life as well as re-used and re-furbished equipment (which reduces bottom-line costs as well as environmental costs).

Green Procurement Challenges:

- Increasing staffing levels in the Purchasing Department would enable more professional development respecting green procurement policies, procedures and product / service alternatives. Moreover, as buildings are added to the University inventory, the demands on the Purchasing Department will increase in response to a larger overall campus.
- Implementing a regime of life-cycle costing in the purchase of new furnishings and equipment would enhance sustainability performance over a least-cost approach, though it is recognized that the more sustainable option is limited by fiscal constraints.
- While Sustainability and Green Procurement Policies have already been established, there is a continuing need to more broadly communicate and promote these policies among those with authority to implement them.
- Procurement authority dispersed to University departments increases the challenge of training all those with procurement authority in green procurement practices.

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, it is renovation projects which promise real gains in sustainability performance. FY2008 witnessed some modest progress in this direction. However, efficiency gains in existing facilities are routinely neutralized or even reversed by growth in the scale of University facilities overall.

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, (a) are 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 Achievements for FY2008:

- The University applied no chemical herbicides to the campus in FY2008, and approximately 3.4 kgs. of chemical pesticides, primarily Avitrol® used for control of pigeons. These quantities of material remain unchanged from FY2007.[1]
- 928 Liters of fossil fuel were consumed to operate University grounds maintenance machinery, a 1.4% increase over FY2007. [1]

- 100% of campus yard wastes were composted in FY2008. [1]
- 70% of all landscapes on campus are xeriscaped with indigenous, low maintenance plants and landscape materials. No new landscaping projects were undertaken in FY2008. [1]
- 100% of all paper products used in washroom facilities are made of recycled paper. [1]
- 90% of all cleaning products are Enviro-Choice or other environmentally preferable labeled products, and 100% of all cleaners and strippers labeled as containing hazardous ingredients have complete MSDS documentation available to workers using the products. [1]
- No cleaning products used on University premises are designated as hazardous under CEPA or Federal Transportation of Dangerous Goods Act regulations. [1]
- Continued replacement of 136 asbestos core doors in Centennial Hall with non-asbestos containing replacements promises to reduce risks from asbestos contamination and help protect indoor air quality.[2]
- Concurrent with the campus-wide SALTO lock installation program, some doors which cannot accommodate the lock mechanisms are being replaced and in the process upgraded to doors with better seals and weather strips, thus reducing heat loss.[2]
- Continued program of replacement of vinyl-asbestos floor tile in Ashdown, Bryce, Centennial and Manitoba Halls with low VOC and sustainable linoleum sheet-stock flooring.[2]

Wesley Hall Renovation

- Extensive mechanical and electrical renovations to Wesley Hall in addition to the refitting of the building cladding, insulation, windows and other equipment were completed in FY2008. Sustainability improvements that may have been 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.

CanWest Centre for Theatre and Film (T21)

- Renovations to the Theatre Building (T-21), now renamed the CanWest Centre for Theatre and Film, were planned with reference to LEED-NC 1.0 but, due to significant budgetary limitations, were not expected to meet minimum requirements for "LEED certification", i.e., below LEED Silver ranking. The building is separately metered for utilities which makes it possible to assess what gains this renovation achieved following recommissioning in FY2008. To date, furnishing has still not been completed, thus making normal use of the building impossible at this writing.

Land Use and Property Management Initiatives for FY2009:

- Upgrading and replacement of the steel cladding on Centennial Hall which will include an insulation upgrade that will substantially improve this facility's energy performance.
- Upgrading and replacement of Bryce Hall roof, transitioning from a four-ply roofing system to a two-ply system which is easier to install, less expensive to maintain, and more environmentally friendly. The building roof insulation will be upgraded to R40.[2]

- The Wesley Hall Annex will see replacement of its present single-glazed wood windows with triple-glazed wood windows, thus dramatically improving energy performance and reducing air leakage.[2]
- Duckworth Athletic Centre roof is slated for replacement of the current EPDM four-ply membrane system with a two-ply Mod-Bit system along with upgrading of insulation. Since the Duckworth Centre is a very large facility, the energy savings should be significant. 170 Tonnes of river rock ballast is being recovered for recycling as landscaping material.[2]

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 FY2008, 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 Student Residence

- Construction of a new LEED Silver+ Student Residence on Langside Street is slated to be completed in FY2009. This project is currently in the late construction 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, achieving LEED Silver+ sustainability performance, is scheduled to begin operation in FY2009. Sustainability features in addition to those needed to achieve its LEED-Silver rating include:
- Water efficient fixtures throughout building reducing water use by over 30%
- Energy efficient building envelope and mechanical systems reducing energy by approximately 40% compared to MNECB (this has yet to be confirmed by NRCan)
- Low-emitting products used for all paints, coatings, sealants, adhesives, and carpet to provide a high level of indoor air quality
- Natural daylight and views to the outdoors throughout the buidling.

Land Use and Property Management Challenges:

- Seven of 18 doors in Wesley Hall contain asbestos which cannot be serviced as the doors no longer meet fire code requirements on the one hand, but are “protected” under Heritage Building regulations on the other. This dilemma can only be resolved by a harmonization of regulations between the Office of the Fire Commissioner and Manitoba Heritage.
- 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.

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 in moving this agenda forward. While a number of materials conservation initiatives have become well-established, their viability continues to depend on sustained funding from Green Manitoba and the dedicated efforts of UW service worker staff, Bee Clean staff, VersaTech staff, and all members of the University community whose cooperation is essential to making these programs work. Naturally, there continues to be room for refining methods and continuous improvement in results..

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	FY2007 (Tonnes)	FY2008 (Tonnes)	% change FY2008 over FY2007
Total Solid Waste Generated (MSW)[1]	172.2	229.6	+ 33.3
Total Materials Captured by Recycling[2]	94.4	104.4	+ 10.6
Organic materials (compost)	1.5	11.1	+ 640.0
Toner Cartridges	0.1	0.04	- 60.0
Batteries	0.1	0.04	- 60.0
Corrugated cardboard & boxboard	35.1	33.1	- 5.7
Mixed paper incl. shredded confidential paper.	51.4	49.4	- 3.9
PET drink containers	6.2	10.8	+ 74.2
E-waste	No data	6.0	No data
Solid Hazardous Wastes	0.7	0.24	- 65.7
Total Materials to Landfill[3]	77.8	125.1	+ 60.5
MSW / FCE (Kgs.)	5.6[5]	7.6[5]	+ 35.7
Cost of Recycling / Waste Management			
MSW Disposal Cost	$ 33,323.93	$ 34,613.37	+ 3.9
Recycling Collection Fees	$ 5,100.00	$ 5,000.00	- 2.0
Confidential Paper Shredding Service	$ 7,176,72	$ 7,445.81	+ 3.7
Hazardous Waste Removal Fees	$ 15,000.00[6]	$ 7,727.86	- 48.5
Total Cost Recycling / Waste Mgmt.	**$ 60,600.65**	**$ 54,787.04**	- 9.6

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 FY2007 = 30,626.

5 Total FCEs for FY2008 = 30,160.

6 This value is partly due to a one-time decommission of a chemistry lab which resulted in a substantial single disposal of hazardous materials.

Materials Conservation (Waste Reduction) Achievements for FY2008:

Physical Plant

- **Materials Conservation Coordinator Hired –** A part-time position has been created for a Materials Conservation Coordinator to help improve service levels with recycling and composting, prepare performance reports, supervise the annual waste audit and deliver waste reduction education programming.
- **Composting of Organic Materials** – Established in August 2007, composting of organic materials increased 640% to 11.1 T. in FY2008. This process now includes both pre- and post-consumer materials and materials collected from grounds maintenance. While compostable organic materials are still being lost to landfill, this is nevertheless very significant year-over-year progress.
- **Blue Box Pick-Up Expanded** – Collection of "blue box recyclables" has been expanded to include 520 Portage Avenue, Rice Floors 7 & 9, and the CanWest-Global Centre for Theatre and Film (T21), facilities which last year had no recycling pick-up service. Collection of recyclables at the Department of Continuing Education on Princess Avenue is handled by building staff at that facility.
- **Procurement / Materials Conservation Link-Up** – A cooperative initiative was launched between the Materials Conservation Coordinator and the Purchasing Agent to catalogue all equipment and supplies in the University's inventory and all incoming purchases so that the materials represented can be tracked throughout their service life and greater efforts can be made to assure that they are reused / recycled rather than disposed of when they reach the end of their service life.
- **Recycling of Cooking Oil** – Used cooking oil from Chartwells kitchens is being transferred to a local roofing company for use in their trucks—revenue neutral to the University, but still diverting the used oil from the waste stream. University Food Services purchases about 1,344 liters of canola oil annually, of which roughly 1,100 liters is disposed of, which is now being diverted from the waste stream and put to good use (in addition to saving a modest amount of money previously paid to dispose of this product).
- **Battery recycling** was established in June 2007 and continued in FY2008**,** thus removing another cluster of hazardous wastes from landfill (e.g., lead, cadmium, lithium, etc.).
- **Toner Cartridge Recycling** - Capture and recycling of toner cartridges from printers and other imaging equipment continued in FY2008 which returns a small revenue stream to the Campus Sustainability Office.

- **FY2008 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;
- **Duplex Printing Default** – With the introduction of the fleet of new imaging equipment, all printers and photocopiers have been set to duplex printing as a default. While single-sided printing is still an available option, it is charged back to departments at a premium because of the extra paper cost incurred. [Michael Hohner – email 14 August 2008.]
- **Waste Reduction "tips"** were emailed to all staff and faculty on five consecutive days during Waste Reduction Week, 20-24 October 2008.
- **A composting workshop** was offered to students and staff by the Materials Conservation Coordinator in October 2008.
- **Recycling of Course / Faculty Evaluations –** Holly Sanness, CTLT FaCE staff, currently recycles most of the envelopes and sheets for Faculty and Course Evaluations.
- **Providing Student Employment –** Students are routinely hired to perform the waste audit as well as offered numerous non-paid learning opportunities by way of participation in the Waste Reduction Working Group and the Campus Sustainability Council.
- **The Print Shop has reduced copying** from 15 million impressions in FY2007 to 14 million impressions in FY2008 with a corresponding saving in paper and supplies.

E-Waste Management:[4]

Decommissioned electronic equipment (E-waste) is partly managed for the University by PowerLand Computers which accepts monitors, CPUs, laptops and computer accessories. Equipment is assessed for re-usability and re-sale potential, or else if operable, is donated to local churches, charities, schools, community groups, or sometimes included in shipments to African schools. Monitors surplus to the needs of PowerLand are delivered to the Manitoba Government and recycled for materials recovery in compliance with Electronic Product Stewardship Council of Ontario guidelines. Equipment composed mostly of steel is disassembled by PowerLand staff and the metal delivered to local Winnipeg metal dealers. Plastics used in electronic product housings is currently not recycled in Manitoba and goes to landfill.

- **E-Waste Management –** Through the efforts of Rick Sitarz, Shipping and Receiving staff, and staff at PowerLand Computers, 6,000 Kg. of electronic equipment was disposed of in FY2008, of which 80% (4,800 Kgs.) was considered "e-waste". Ten to twenty percent of the e-waste (480-960 Kgs.) of equipment has been re-manufactured for sale as used equipment by PowerLand Computers. The 20% of material not considered e-waste consisted of metals which were completely recovered for recycling.

Library:[5]

- 2.5 T. of culled journals and books were deleted from the University collections and processed for recycling in FY2008 through a partnership of Library staff and members of EcoPIA, the student sustainability and waste reduction group.
- 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.

Bookstore:[6]

- **Approximately 90% 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 has introduced **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.
- Bookstore is continually exploring opportunities for increasing on-line sales capabilities which may have a sustainability benefit in reducing transportation for shipping.
- Expanded adoption and availability of e-books may reduce the use of paper and incursion of shipping impacts.

Materials Conservation (Waste Reduction) Initiatives for FY2009-10:

Physical Plant:

- 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.

Food Services:

- Re-introduction of china and reusable cutlery in Chartwells Food Services and continued use of fully compostable food service ware for take-out orders should reduce food-service related wastes to a minimum.

Materials Conservation (Waste Reduction) Challenges:

- 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.
- The University's waste handling vendor, Johnson Waste Management, chronically returns untimely and unreliable weight data for MSW going to landfill. Evidently, providing accurate weight data is beyond the technical ability of the vendor and "estimates" vary by as much as 50% month over month. This situation makes planning, budgeting, cost-benefit analysis and even assessment of the fairness and accuracy of invoices nearly impossible.

Social Sustainability - Campus Life and Community Outreach

"Social Sustainability" refers to a somewhat vaguely defined cluster of concerns that 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 that strengthens the capacity of systems of public administration are also necessary conditions for the development of economic 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), Ecological People In Action (EcoPIA) 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

- **Campus Commuter Challenge** – UWSA worked in collaboration with Resource Conservation Manitoba to promote UW student participation in the national Campus Commuter Challenge—a program encouraging participants to adopt alternative and more sustainable approaches to transportation.
- **Bottled Water Ban Mandated** – Commercial sale of water bottled in disposable plastic bottles was banned on campus, an administrative directive which will take effect in Fall 2009. The UWSA, in partnership with Canadian Federation of Students and EcoPIA played major roles in proposing and encouraging implementation of this ban. During FY2008, 38,400 bottles of water were sold from vending machines and food service outlets on campus. Eliminating these sales will avoid approximately 1.15 T. of plastics currently diverted to recycling (approximately 1% of the recycling stream, or 0.5% of the University's total waste stream).
- **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/fair 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]

- The UWSA partnered with the Canadian Federation of Students to host a **"Students for Sustainability Day"** in Fall, 2008, which included guest speakers.
- **Bike Lab Development** – A student-initiated $2/student/year special levy has been added to student fees to raise operating funds ($18,000 per year) for a Bike Lab facility to be integrated within the planned system of Bike Stations on campus. The Bike Lab will provide the central focus for students to learn cycle maintenance skills, safe cycling practices, and serve as a centre for cycling advocacy and awareness-building on campus.
- The UWSA partnered with the Materials Conservation Coordinator to organize a **"Sustainability Festival"** during a week in September, 2008 including workshops, films, discussions, and outdoor fairs. Events scheduled included:
    - "Backyard Composting" with Sylvie Hebert of Resource Conservation Manitoba.
    - "Voluntary Simplicity" with Mark Burch of *SPARC (Simplicity Practice and Resource Centre).*
    - "The Activist's Toolkit: Car Culture and Media Literacy" with Stephanie Fulford of the *Manitoba Student Transportation Network.*
    - Compost bin building workshop with West Broadway Development Corporation.
    - "Veggie Oil Vehicles" with Steve Kirk of *Organic Planet Worker's Cooperative.*
    - "Homemade Cleaning/Beauty Products" with Nancy Hall, of *Hollow Reed Holistic.*
    - "Used Clothing: Art and Alteration" with *Spin Star Studio.*
    - "Thirst: The Movie", film and discussion with Water Caucus Coordinator, Sacha Kopelow of the *Manitoba EcoNetwork.*
    - "Sprouts!" with Jen Neufeld of the *West Broadway Development Corporation.*
    - Clayton Thomas Muller, Indigenous Environmental Network.
    - "Escape from Suburbia", co-sponsored by the Manitoba EcoNetwork.
    - "Bike Tune-up and Safe Winter Riding" with *Bike to the Future and The Bike Dump.*
    - "Green Housing Renovations" with Anna Weier.
    - "What Will We Eat?" film and discussion with Paul Chorney of the *Manitoba Food Charter.*
    - "Canning and Preserving" with Mary Jane Eason of *Mary Jane's Cooking School* and CKUW's *Wooden Spoons.*

Ecological People In Action (EcoMAFIA)[10]

- Membership in EcoPIA increased substantially in FY2008 with over 50 people on the group members email list and 25 regularly attending meetings and involved with action projects.
- EcoPIA members played lead roles in establishing a ban on the sale of bottled water on campus as well as launching a new student fee to support the construction and operation of a Bike Lab facility for cyclists.
- EcoPIA members also organized:
    - Sustainability Festival/Week 15th-19th (Promotion of Events, Stuff Swap)
    - Campus Commuter Challenge (Table with Info, Registration; U of W tripled participation from last year.)
    - Waste Reduction Week, October 20th-24th (Workshops, Speakers, Bulman Movie and Lunch – Resource Conservation MB; Caught in the Act – Finding students recycling and reusing materials to win prizes; Stuff Swap; David Suzuki 22nd at U of M, well attended by U of W, over 30 attendees.)

- Buy Nothing Week, November 24th-27th ('Green Holidays', Laptops for Kajiji, re-gifting, Stuff Swap, Knitting Workshops, Free Cocoa (bring a reusable mug).
- Buddha Walk, November 28th (Buy Nothing Day -Action at Polo Park Mall, with many other groups including EcoNetwork and High School Groups.)
- Volunteered with UWinnipeg Library, ripping outdated journals for recycling,
- Local/Organic/Vegetarian Holiday Potluck
- Started Working with UWSA Outreach Coordinator on UWSA Bike Lab concept.
- Commenced planning for EcoEclectica on February 12th.
- Recorded public service announcements for CKUW- EcoFacts - to play regularly.
- EcoEclectica, February 12th, at The Pyramid, $1,286 raised for the Western Canadian Wilderness Committee, Ecotourism Project.
- Sierra Youth Coalition - Sustainable Campuses Conference, March 2009, attended by EcoPIA members.
- Participation in Vegan Challenge Week – a week of education activities and a challenge for students to adopt veganism.
- Hosted a film screening in Bulman Centre – *The 11th Hour.*
- Successfully garnered over 1,000 signatures supporting two referendums for UWSA general elections: (a) Phase out of Bottled Water Sales; and (b) Introduction of a levy to support Bike Lab operation.
- EcoPIA members provided student workers for the University's annual Waste Audit.

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 build environmental awareness. The program also employs inner-city high school and University students to work in community development.

- **Enviro-Tech Program** - A program designed to give high school students the opportunity to develop an understanding of the critical issues facing the 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.

Wii Chiiwaakanak 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 Initiatives

- Ramps are bring installed to facilitate wheelchair access to Bryce Hall Chapel.[2]
- Modifications have been done to 5th floor Centennial Hall washroom facilities to better accommodate special needs users.[2]

Sustainable Transportation

The University strives to promote adoption of more sustainable approaches to transportation among students, faculty and administration. The Transportation Working Group of the Campus Sustainability Council met on four occasions during FY2008, dealt with the principal issues on its agenda, and resolved to meet again on a consultative basis at the call of the chair as and when needed. The most current data regarding transportation use patterns at the University continues to be based on parking statistics and a survey conducted by Winnipeg Transit in 2005. The Campus Sustainability Office has designed an independent transportation research initiative which is currently under review by Academic Council and the Research Ethics Review Committee. The CSO anticipates that the research will be completed by October 2009 and provide a more current and complete overview of transportation issues.

For a detailed overview of University performance on all policy-mandated sustainable transportation indicators, see Appendix F.

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.

Transportation Performance for FY2008

Fossil fuel consumption and associated GHG emissions are presented for FY2007 and FY2008 in the table below. Some data are missing for FY2007, and at time of writing, no conversion factor was available for fuel consumed per passenger kilometer for rail travel.

Transportation Element	FY2007 (% of total)	FY2008 (% of total)	% Change FY2008 over FY2007
Fleet vehicle fossil fuel	6,111 L. (5.0%)	7,718 L. (4.9%)	+ 26.3
Business air travel fossil fuel	104,608 L. (84.8%)	125,971 L. (80.8%)	+ 20.4
Business auto / taxi fossil fuel	12,590 L. (10.2%)	22,059 L.[1] (14.2%)	+ 75.2
Business bus fossil fuel	No data.	175 L. (0.1%)	n/a
Business rail	No data.	(190 kms.)	n/a
Total Fossil Fuels	**123,309 L.**	**155,923 L.**	**+ 26.5**

Fleet Vehicle GHG emissions	14.4 T. CO_2e	18.2 T. CO_2e	+ 26.4
Total reimbursed travel GHG	435.9 T. CO_2e	542.0 T. CO_2e	+ 24.3

[1] Some fraction of this increase is probably attributable to much more efficient accounting for business travel incurred fossil fuel consumption.

Sustainable Transportation Achievements for FY2008:

- **Bike Station Development** – Successful conclusion of a MOU with Peter Sampson Architectural Studio to develop a design concept, class C estimate, and preliminary planning process for a series of Bike Stations to serve the University.
- **Record Participating in Workplace Commuter Challenge** – 91% increase in participation in the 2008 Commuter Challenge where 66 staff and faculty registered compared to 35 registrations in 2007. This represented 3.3% of the University population and avoided 4,989 kms. of single occupant vehicle (SOV) travel, saving 500 liters of gasoline and 1.13 T. CO_2e.
- **Walk For Wellness Challenge** – 89 faculty and staff register for the Walk for Wellness Challenge in FY2008—the first time this program has been offered on the UW campus.
- **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 provides 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 possibility of allocating parking services profits to sustainable transportation initiatives on campus is being discussed.

Sustainable Transportation Initiatives for FY2009:

- **Construction of the first Bike Station and Bike Lab** – A partnership of the UWSA Bike Lab and the Campus Sustainability Office will secure capital and operating funding for the University's first Bike Station slated to open in time for cyclists to use the facility in the Fall of 2009.
- **Purchase of Carbon Off-sets for All Staff, Faculty and other University Business Travel –** An initiative is planned to fully implement a revised travel distance reporting procedure for faculty and staff reimbursed travel, and also launching the consultation process with faculty leading to the implementation of a carbon off-set purchase regime for University business travel.

Sustainable Transportation Challenges:

- **U-Pass Adoption** – Implementing a U-Pass program continues to be a challenge and is "parked" for the time being. Support for U-Pass has been marginal at all three of Winnipeg's major post-secondary institutions. Since implementing the program requires successfully passing a referendum to establish a substantial new student fee, given the economic climate at this writing, adoption appears unlikely.
- **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.

The Centre for Sustainable Transportation

The Centre for Sustainable Transportation is a membership-based, non-profit organization that facilitates best practices for the movement of people and goods over the long-term. The CST bridges academic, business, and public interest to identify and help craft sustainable transportation solutions that benefit society and the environment while enhancing mobility.

While the CST is not an academic department of the University of Winnipeg, the University is fortunate to have the CST located on campus. The President and Vice-Chancellor of the Univerisity is an honorary Co-Chair of the Board of Directors, and CST staff have in the past, and presently continue to make significant contributions to sustainable transportation initiatives at the University.

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 decreased by 31.7% in FY2008 over FY2007. 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	FY2007	FY2008	% change FY2008 over FY2007
Water consumption (liters)	45,235,516[1]	30,883,599	- 31.7
Cost ($000)	110.9[1]	106.6	- 3.9
Liters / FCE	1,477.0	1,024.0	- 30.7
Liters / m^2	493.0	332.3	- 32.6

[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 FY2007 for the same time period.

Water Use Management Performance for FY2008:

- **Water use decreased overall by 31.7%** over FY2007 levels. However, a number of estimates were made to compensate for missing data at time of reporting.
- **Water Conservation Specifications** were included in the design programs for renovations to the CanWest Centre for Theatre and Film (T21), the expansion of the Duckworth Centre, and Wesley Hall renovations. These specifications may help explain an 33% drop in water consumption at T21, and a 71% drop for Wesley Hall FY2008 over FY2007. A more likely explanation, however,

is that both Wesley and the CanWest Centre underwent extensive renovations in FY2007 which would have limited occupancy, and hence water consumption.

- **Cost of Water Increasing** – It is noteworthy that the cost of water to University decreased only about 4% in FY2008 while consumption dropped by nearly a third. This reflects a general increase in the cost of utilities from the City, even though the volume of water consumed was considerably less.
- **Water Conserving Fixtures** – Approximately 5% of water fixtures are conserving models and are being changed out as washroom renovations move forward.[1]
- **Grey Water Recycling** – The University current recycles no grey water for uses for which it is appropriate. [1]
- **Storm Water Recovery / Recycling** – The University currently captures no storm water run-off for recycling. [1]

Water Use Management Initiatives for FY2009:

- An ongoing program is under way to replace automatic flushometers on urinals with water conserving fixtures. This is usually included in routine maintenance or renovation to existing facilities.[2]
- Upgrades are also being made to washroom facilities to better respond to special needs users.[2]
- **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 FY2009.

Water Use Management Challenges:

- A continuing challenge is achieving measurable improvements in water conservation performance as well as strategic and efficient allocation of limited resources in the absence of a comprehensive audit of University facilities and the prevailing piecemeal approach to funding sustainability upgrades and infrastructure maintenance.

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 remain many opportunities to advance campus sustainability performance. Going forward, the University might consider the following recommendations, opportunities, and emerging situations:

Reconceptualize "Development" of the University

In a general climate of rising costs and fixed or declining revenues, it is understandable that "sustaining" The University of Winnipeg might routinely be interpreted as a fiscal exercise. It is not within the scope of this report to offer proposals pertaining to fiscal management of the institution. It must be noted, however, that efforts to meet fiscal shortfalls by growing enrolments or expanding program offerings can be perverse to both social and environmental sustainability goals. Concisely, we cannot grow our way to sustainability any more than we can shop our way out of debt or eat our way out of obesity. If cities such as Portland, Oregon, can set a development perimeter for themselves and focus on qualitative improvement *within* fixed physical and economic limits, it should also be possible for a university to do so.

- **Devise a "Steady-State" Vision for University Development –** To reconcile the academic mission of the University with the more or less inflexible environmental limits imposed by the Earth implies devising a "steady-state" rather than growth-focused vision of development for the institution. Creative efforts can be re-directed from simply increasing enrolments, faculty positions and buildings to instead developing strategies for qualitative change that constitute continuous improvement *within* relatively fixed physical and budgetary parameters. Technological innovation can only go so far in easing the restrictions imposed by resources, energy fluxes and the waste assimilative capacities of nature. Universities could very usefully model to the broader society what can be done by creative people working within voluntarily established limits to evolve ever more elegant uses of the materials and energy available to create new knowledge and conserve it for future generations. To this end, the University might consider establishing for itself caps on enrolment, employee and faculty complements, and facilities, and then developing fiscal strategies to sustain these endowments in service of the University's evolving academic mission.

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. The 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 with each year it is deferred.

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.

- **Proceed with Construction of Bike Station / UWSA Bike Lab** – Design drawings, site studies, and initial business modeling have all been completed for a series of Bike Stations which represent innovative, playful, and visibly sustainable solutions to promoting cycling, walking and other forms of active transportation on campus. Such facilities will dramatically and publicly signal the University's commitment to environmental sustainability. Construction of Bike Stations subtract nothing from the University's GHG emissions footprint. The University is not responsible for reporting or reducing emissions from the intra-city transportation used by its faculty, staff and students. But as an education 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 common sustainability challenge.

  It is recommended that construction of the first of five planned Bike Stations be commenced as soon as the capital funding can be secured and the construction process can be integrated with the landscape development planned for the Quadrangle area of campus.

- **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 over 13% 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. A process has been developed for travel distance reporting. Consultations respecting a regime for purchase of carbon off-sets remains to be developed in collaboration with University faculty and researchers, and also conditional on securing the financial resources needed to fund the off-set purchases.

  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.

- **Strengthen Materials Conservation Activities –** Thanks to the unflagging efforts of many students, faculty and support staff, all of the elements of a thorough-going and effective materials conservation (waste minimization) program are in place. It remains now to continually improve what has been built, as well as begin work on demand side management of materials coming into the University through its procurement activities. A recent initiative by Chartwells to adopt china food service ware and metal cutlery will make a major further contribution to demand-side management of waste. But all areas of activity—effectiveness of blue box collection systems, collection of organic materials for composting, education and awareness, and identification of zero-waste approaches to meeting needs which are currently met through consumption of materials will remain a perennial challenge.

  It is recommended that adequate resources be made available to provide for continuous improvement of the University materials conservation program, and that

approaches be developed to extend this process to demand-side management in cooperation with University green procurement initiatives.

- **Performance Tracking and Reporting Systems –** Effectively managing the University toward sustainable outcomes requires timely, accurate and complete information about sustainability performance. The current performance report includes information from scores of indicators. 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 in a partnership with Emerge Environmental Information Solutions, Ltd., to make additional strides in the direction of more efficient, accurate, and easy to use reporting systems. There is also need of a simplified and user-friendly approach to presenting information so that it is accessible and appropriately formatted for all stakeholders.

  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 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.

Build 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 centralized in the Campus Sustainability Office. Some progress is already being made in this direction, but much remains to be done.

- **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 can more effectively exercise due diligence in the environmental performance management of the University.

  It is 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, .6 FTE (combined 1.2 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.

  It is recommended that staffing and resource levels assigned to the CSO be commensurate with the expectations that continue to surround the sustainability initiative.

- **Research and 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. 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 and has not yet manifested as a general shift in the cultural mainstream of University student life.

  It is recommended that focused work be undertaken through collaboration of the CSO, the UWSA, Working Groups of the Campus Sustainability Council, and EcoPIA and GESSA to "mainstream" concern for sustainability issues within the University's student body proportionate to the relevance that the sustainability challenge has to society generally.

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] Service Coordinator, Physical Plant, April 2009.

[2] Acting Director, Physical Plant, April 2009.

[3] Campus Safety Officer, March 2009.

[4] Penner, Lucas – PowerLand Computers (Private Correspondence) – April 2009.

[5] Michael Hoehner, Librarian – May 2009

[6] Scott Spearman, Bookstore Manager – Apr. 2009

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

[8] CSC meeting activity report.

[9] Amyot, Sarah (2007) (Private Correspondence)

[10] Morison, Matthew & Lahaie, Nicole (April 2009) EcoPIA Annual Report. (Private Correspondence)

Appendix A
Air Quality Performance Indicators

Indicator	Target	Performance	
		FY2007	FY2008
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.	Complaints – 15 Complaints requiring testing – 7 Complaints still ongoing – 4	Complaints – 9 Complaints requiring testing – 7 Complaints still ongoing - 3
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	0.045 g../ 1000 m^2 (4,185 g. / 92,950 m^2)	0.045 g../ 1000 m^2 (est. 4,200 g../ 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.	0	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.	3,935.9 T. CO_2e	4,122.8 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	Included in CSO	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	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	
			FY2007	FY2008
E1.1	Total annual electrical consumption in KwH.	Annual reductions to theoretical minimum.	14,143,509	12,469,447
E1.2	Energy intensity of operations: KwH / m^2 of facilities under management / Celsius Degree Day.	Derived	0.0258 KwH/m^2/DD DD = 5,897 Area = 92,950 m^2	0.022 KwH/m^2/DD DD = 6,002 Area = 92,950 m^2
E1.3	Energy intensity of operations: KwH / FCE / Celsius Degree Day.	Derived	0.0783 KwH/FCE/DD FCE = 30,626 DD = 5,897	0.069 KwH/FCE/DD FCE = 30,160 DD = 6,002
E1.4	Total annual natural gas (NG) consumption in m^3 (and KwHe).	Annual reductions to theoretical minimum.	1,704,790 m^3 18,053,726 KwHe	1,685,700 m^3 17,834,706 KwHe
E1.5	Energy intensity of operations: m^3 NG / m^2 of facilities under management / Celsius Degree Day.	Derived	0.0031 m^3/m^2/DD DD = 5,897 Area = 92,950	0.0030 m^3/m^2/DD DD = 6,002 Area = 92,950 m^2
E1.6	Energy intensity of operations: m^3 NG / FCE / Celsius Degree Day.	Derived	0.0094 m^3/FCE/DD FCE = 30,626 DD = 5,897	0.0093 m^3/FCE/DD FCE = 30,160 DD = 6,002
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.	6,111 L. (59,395 KwHe)	7,718 L. (75,015 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.	1,016,790 KwHe	1,224,434 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%.	43.9%	40.9%

E1.11	Total annual stationary fuel consumption in liters (and KwHe).	Annual reductions to theoretical minimum.	No data	est. 6,000 L. (58,320 KwHe)
E2.1	GHG emission reduction.	Documented evidence of GHG emission reductions.	+ 8.8% (Over 1990)	+ 13.8% (Over 1990)
E6.1	Measurement and record systems established and maintained.	Record system in place.	Done	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	
		FY2007	FY2008
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.	$ Threshold still to be established.	$ 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%	100%	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.	Under development.	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	
		FY2007	FY2008
L1(b).1 Annual amount of chemical herbicide applied to University landscapes in liters.	0 kgs. or 0 liters.	0 L.	0 L.
L1(b).2 Annual amount of artificial pesticide used on University landscapes in liters.	0 kgs. or 0 liters.	3.4 kgs.	3.4 kgs. (est.)
L1(b).3 Annual amounts (in kgs., liters, g., 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.	3,080 kgs. (Mtn. Organic Ice Melt)	3,600 kgs. (est.) (Mtn. Organic Ice Melt)
L1(c).1 Percentage of landscaping using xeriscaping techniques and materials.	Increasing annually to 100%.	70%	70%
L1(c).2 Annual quantity in liters of fossil fuels consumed by grounds maintenance machinery and vehicles (mowers, snow blowers, sidewalk plows, etc.).	Decreasing year over year to practical minimum.	915 L.	928 L.
L1(d).1 Percentage of yard wastes composted.	Increasing annually to 100%.	100%	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%.	0%	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%	100%	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%	90%	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 - Type of dye	100%	1%	100%

- 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%	0%	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%	0%	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.	Report on file in CSO.	No projects in FY2008.
L5.1 Documented evidence from RFPs that LEED standards or better have been specified for bidders.	Document as required.	100% (Provincial Policy)	100% (Provincial Policy.)
L7.1 Measurement and record systems established and maintained.	Record system in place.	Done	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	
		FY2007	FY2008
W1.1 Annual total weight (in kilograms) of municipal solid waste sent to landfill.	Decreasing annually to theoretical minimum. 5 year goal; interim targets.	77.8 T.	125.1 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.	94.4 T.	104.4 T.
W1.3 Percent of waste reduced over previous year's waste production.	derived	- 26.3%	+ 60.5%
W.1.4 Percentage of the total weight (in kilograms) of waste destined for landfill or incineration comprised of recyclables (including organic wastes):	derived	15.8%	14.3%
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.	1.5 T.	11.1 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.	0.65 T. Solids 1,000 L. Liquids	0.24 T. Solids 1,241 L. Liquids
W2.2 Reduction of hazardous wastes produced by the University over previous year.	derived	Not calculable.	- 65.6% for solids + 24.1% for liquids
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.	0 T. On campus. Unknown off campus.	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.	On file in CSO.	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	
		FY2007	FY2008
T1(a).1 Total annual fossil fuel consumption for University fleet vehicles.	Reducing annually to theoretical minimum.	6,111 L.	7,717 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.	2,988,800 kms. 104,608 L.	3,599,160 kms. 125,971 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.	12,589 L.	22,059 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	5,851 kms. 175 L.
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.	22.1 L.	0
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.	0	190 kms.
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	14.4 T. CO_2e	18.2 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	435.9 T. CO_2e	542.1 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	100%
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	Campus Commuter Challenge - Unknown; Workplace Commuter Challenge - 67; Walk for Wellness event - 89.
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.	On file in CSO.	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 mass transit to travel to campus.	Increasing annually to practical maximum.	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit 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.	48	67
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	
		FY2007	FY2008
WR1.1 Percentage of all water fixtures operating on campus which are water conserving models.	Increasing annually to 100%.	No data	5% (est.)
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	On file in Chem / Bio Depts.
WR2.1 Total annual volume of potable water in liters consumed by the University.	Report.	45,235,516 L.	30,883,599 L.
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	0%
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