

# The University of Winnipeg Campus Sustainability Report

April 1, 2006 – March 31, 2007  
Fiscal Year 2006

Campus Sustainability Office

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### **Members of Campus Sustainability Council:**

Vivian Belik – SUNSET Student Representative  
Danny Blair – Department of Geography, PARC, Global College  
Michael Boyd – Director, Information Technology DCE  
Bill Buhay – Department of Geography, C-FIR  
Mark Burch – Campus Sustainability Coordinator (Chair)  
Len Cann – Assistant Director, Engineering and Maintenance  
Maura Champagne – Manager, Beyond Words  
Amanda Davis – UWSA Student Representative  
Alan Diduck – Director, Environmental Studies  
Jino Distasio – Director, Institute of Urban Studies  
Michael Dudley – Research Associate, Institute of Urban Studies  
Kate Dykman – SUNSET Coordinator  
Arne Elias – Director, Centre for Sustainable Transportation  
Kenneth Friesen – Acting Dean of Science  
Janet Johnson – Library  
Gabor Kunstatter – Department of Physics  
Alana Lajoie-O'Malley – Special Research Assistant  
David Merredew – Campus Sustainability Research Assistant  
Gerald Munt – Director, Institutional Analysis  
Jennifer Rattray – Director, Strategic Initiatives (President's Office)  
Laurel Repski – VP, Human Resources, Audit and Sustainability  
Matt Russell – Eco-MAFIA Student Representative  
Dini Silveira – UWSA Special Representative  
Mike West – UW Collegiate

### **Members of the Academic Initiatives Working Group:**

Vivian Belik – SUNSET Student Representative  
Danny Blair – Department of Geography, PARC, Global College  
Bill Buhay – Department of Geography.  
Mark Burch – Campus Sustainability Coordinator (Chair)  
Alan Diduck – Director, Environmental Studies Program  
David Merredew – Campus Sustainability Research Assistant  
Don Metz – Education Department  
Amanda Tetrault – Instructor, Education  
Mike West – UW Collegiate

### **Members of Policy and Procedure Writing Working Group:**

Michael Boyd – Director, Information Technology, DCE  
Mark Burch – Campus Sustainability Coordinator (Chair)  
Steve Coppinger – Special Projects Officer (President's Office)  
David Merredew – Campus Sustainability Research Assistant  
Gerald Munt – Strategic and Budgetary Priorities

### **Members of the Sustainable Transportation Working Group:**

Mark Burch – Campus Sustainability Coordinator (Chair)  
Amanda Davis – UWSA Student Representative

Jino Distasio – Director, Institute of Urban Studies  
Michael Dudley – Research Associate, Institute of Urban Studies  
Arne Elias – Director, Centre for Sustainable Transportation  
David Merredew – Campus Sustainability Research Assistant  
Leslie Uryriniuk – Printing and Parking Services  
Marc Vachon – Department of Geography  
Terry Zdan – Climate and Green Initiatives Branch, Science, Technology and Energy  
Manitoba

### **Members of the Waste Reduction Working Group:**

Bill Buhay – Department of Geography.  
Mark Burch – Campus Sustainability Coordinator (Chair).  
Len Cann – Assistant Director, Engineering and Maintenance.  
Lynn Jones – Director, Student Life Services.  
David Merredew – Campus Sustainability Research Assistant.  
Matthew Russell – Student Representative, EcoMAFIA.  
Claudius Soodeen – Centre for Distributed/Distance Learning  
John Webb – Student consultant on video production.

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Soham Baksi - Economics  
Melanie Barton – Bookstore  
Joanne Boucher – Politics  
Michael Boyd – Director IT Service, Continuing Education  
Deb Bradley – Education  
Geri Breddam-Taylor – Collegiate  
Enid Brown – Kinesiology and Applied Health Studies  
Bill Buhay – Geography  
Jessica Burleson – Continuing Education  
Len Cann – Physical Plant  
Jim Christie – Theology  
Alan Diduck – Environmental Studies  
Linda Dietrick – French and German Studies  
Michael Dudley – Institute of Urban Studies  
Ann Friesen – Continuing Education  
David Hewlett – Theatre and Drama  
Gary Hollingshead– Technology Solutions Centre  
Louise Humeniuk – UW Foundation  
Jennifer Janzen – Collegiate  
Karen Jones – Biology  
Randy Kobes – Physics  
Doris Kuzma – Financial Services  
Mark Leggott– Library  
Colleen Little – Continuing Education  
Shauna MacKinnon – Student Services  
Suzanne Martin - Education  
Kim Monson – Geography  
Joel Novek – Sociology and Criminal Justice Studies  
Dr. Earnest Prokopchuk – Chemistry  
Rita Prokopetz – Continuing Education  
Jennifer Rattray – Presidents Office  
Martin Robson – Human Resources  
Anna Snyder – Menno Simons College  
Erin Stewart – Continuing Education  
Ross Stokke – Mathematics and Statistics

## Executive Summary

This document represents The University of Winnipeg's first campus sustainability report. While it contains incomplete data and falls considerably short of the sort of reporting which can be expected in the future when the Sustainability Management System is fully developed, it is nevertheless an attempt to begin establishing a regular cycle of reporting which follows the fiscal year and can provide substance for strategic planning going forward. This report confines itself to 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 has been submitted to Senior Administration under separate cover. Moreover, while the University is in some respects showing decrements in sustainability performance year over year, some of these differences are the result of much more accurate measurement and more complete reporting than was available in the past. Key highlights from FY2006 include:

- **Air Quality Management** – 2.9% increase in GHG emissions since last year, at least partly due to a colder winter. Reduction in GHGs required to meet Kyoto Protocol commitment: 19.7% below 2006 levels.
- **Energy Conservation** – 9.5% increase in total energy used since last year, mostly attributable to a colder winter and increased use of natural gas. The University's use of renewable energy remains relatively high at almost 43% from hydroelectric sources.
- **Green Procurement** – A comprehensive procurement audit has been proposed, guidelines developed to be included with RFPs, pre-qualification requirements established for replacement of The University's fleet of imaging equipment and some modest gains achieved in procurement of cleaning supplies and floor coverings.
- **Land Use Planning and Property Management** – Renovations to Wesley Hall and T-21 and the Portage Commons development all represent potential conservation savings. The Duckworth Centre expansion and Richardson College For the Environment, while being constructed to Green Building standards, will nevertheless increase The University's ecological footprint.
- **Social Sustainability** – Policy development and consultation processes are moving forward and a gap analysis can soon be performed for the social dimension of the campus sustainability initiative. A set of proposals should be available in May, 2008.
- **Sustainable Transportation** – An ambitious plan has been developed for a suite of transportation initiatives which promise to help reduce The University's transportation footprint including a proposed Eco-Pass for employees, a U-Pass program for students, and development of an Active Transportation Hub on campus.
- **Waste Reduction (Materials Conservation)** – 3.5% increase in materials going to landfill, but this was the first year for which real time actual weight data have been gathered. It is likely that waste volumes were considerably under-estimated in the past. Encouraging initiatives are under way to reduce waste volumes by 50% through composting of organics, and programs are being launched to recycle batteries, e-waste and toner cartridges in addition to the materials already captured (office paper, corrugated cardboard, drink containers).
- **Water Use Management** – Water use decreased 15.9% from last year which is thought to be attributable to higher average relative humidity which affects the performance of chiller evaporators since no specific water conservation initiatives have been undertaken during FY2006.

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

## Highlights of Sustainability Development Activities

While no wind generators or photovoltaic panels are yet visible on campus, there has been very significant progress on a number of more substantial measures that promise major future contributions to campus sustainability. Since the beginning of the campus sustainability initiative in 2005, many people have cooperated in laying the foundations for a truly comprehensive, strategic, and effective management system to promote the environmental and social sustainability of The University of Winnipeg. Their contributions are especially noteworthy in light of the fact that over the last fiscal year, an estimated 3,000 hours of partly paid and partly volunteer staff, faculty, student and administrative time has been invested in campus sustainability work, only 0.27% of all paid work performed by faculty, staff and administration during the same period. A synopsis of these activities for FY2006-07 includes:

- Appointment of a senior administrative officer responsible for campus sustainability at the Vice-Presidential level: Vice-President, Human Resources, Audit and Sustainability. To our knowledge, this is the first such appointment at any university in Canada and vividly signals the seriousness with which the university engages the sustainability challenge.
- Adoption by unanimous vote of the Board of Regents on October 3, 2006, of a comprehensive Sustainability Policy for the university.
- Adoption by Senior Management Council in November, 2006, of a comprehensive slate of seven administrative policies designed to address various aspects of environmental sustainability performance.
- Transformation of the Campus Sustainability Task Force to become a standing Campus Sustainability Council with revised terms of reference and expanded membership, charged with continuing development of the sustainability management system. The Council meets monthly and is chaired by the Director, Campus Sustainability.
- On-going operation of special Working Groups of the Campus Sustainability Council mandated to develop specific aspects of the management system, including: Academic Initiatives Working Group, Policy and Procedure Writing Working Group, Green Procurement Working Group, Sustainable Transportation Working Group, and a Waste Reduction Working Group. More of the activities of these groups will be reported in the relevant sections below. All working groups meet biweekly, except for the Academic Working Group which meets monthly, and all are chaired by the Director, Campus Sustainability.
- Completion of a set of 135 sustainability indicators to measure progress toward the performance goals specified in each environmental policy. These indicators will allow derivation of high level aggregated measures to inform strategic management decision-making, as well as fine-grained measurements necessary to operational planning and procedure development.
- Establishment of a rudimentary data collection and reporting system for some indicators which will provide the foundation for data collection and reporting on all indicators in the future. "Real time" data are now being compiled on energy and water use, GHG emissions, some parameters related to transportation, and some procurement activities as well as recycling, waste reduction, and composting.
- Inclusion of a line in the Academic Enhancements "envelope" of the general capital campaign to endow a Campus Sustainability Research Grant to provide long-term funding to campus sustainability research projects involving teams of faculty, students and community members on applied research projects.
- Identification of 36 Sustainability Champions representing most University departments to assist with implementation of the procedures and practices that promote a more sustainable approach to campus operations.

- On-going efforts to articulate the activities of the Campus Sustainability Office with student-led initiatives so that both can be maximally effective.
- On-going meetings between the Director, Campus Sustainability and counterpart sustainability coordinators from other post-secondary institutions in the region to explore ways of cooperating and sharing information in promoting campus sustainability. This collaboration now includes Sustainability Coordinators from the University of Manitoba, Red River College, the Manitoba Lotteries Corporation, the University College of St. Boniface, and Brandon University.
- Periodic meetings between the Director, Campus Sustainability and senior management at Green Manitoba, Manitoba Hydro, Climate & Green Initiatives Directorate, Science, Technology and Energy Manitoba, Transportation and Government Services Manitoba, Conservation Manitoba and the City of Winnipeg as required to promote University of Winnipeg campus sustainability projects.
- Establishment and recent expansion of a 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.
- Providing expert input to design charettes for the Portage Commons development being managed by Hilderman, Thomas, Frank, Cram, co-coordinating UW input to sustainability features development of the Richardson College For the Environment being managed by number10 Architectural Group, and providing sustainability review input to the remodeling of the T-21 Theatre Building.

### **Student initiatives:**

In addition to these initiatives, there have been a number of other sustainability developments that involve student-led projects or projects which grow from student / faculty / administration partnerships, including:

- Establishment of an Innovative Learning Centre pilot project to help retrain First Nations students by engaging them in science and environmental science education in the inner city (Eco-Kids Program and Eco-Tech Program). The Centre has now hired a coordinator and is proceeding with program development.
- Successful funding acquisition by SUNSET (Sustainable University Now, Sustainable Environment Tomorrow), for a campus-based, student-led sustainability group, to hire a full-time Coordinator for one year to develop a “participatory learning” program that engages university students in community-based action-research projects with a sustainability focus.
- Preparation and submission of project proposals to the Erica and Arnold Rogers Teaching Fund and the President’s Innovation Fund to produce sustainability education videos and PSAs for use during student orientation and on campus message screens throughout the year.
- UWSA has established a carpool registry offered by the Canadian Federation of Students that allows students, staff and faculty to share rides to and from school. The current project is being used by 50 people from the university.
- UWSA has established a parking registry working with the neighborhood to use residence parking spaces that are available for students during the day.
- The UWSA is also undertaking its own sustainability audit, collecting data that will contribute to the analysis of the UWSA’s environmental and social sustainability practices. This will give UWSA a benchmark from which to make changes in line with their beliefs and responsibilities as a progressive organization.
- UWSA has also purchased reusable plates for all UWSA events where food is served.

Finally, it should be noted that nearly all student activities and contributions have been made on a purely volunteer basis. Many students have made significant contributions to the Campus Sustainability Council and its Working Groups without financial compensation or course credit.

## Environmental Sustainability Performance

The data reported below reflect the as yet incomplete development of the university's sustainability reporting system. It is anticipated that a much more complete assessment of sustainability performance will be available by FY2008-09. 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 FY2006.



## Academic Initiatives for 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 FY2006, the Academic Initiatives Working Group has:

- Generated a number of proposals for initiatives that can be implemented by the Sustainability Champions group;
- Finalized a proposal for a Campus Sustainability Research Grant that would partially or fully fund short-term research projects that advance knowledge of issues, practices, or activities relevant to the practical implementation of campus sustainability projects. A request for an endowment to support this fund is currently included in the Academic Enhancements envelope of the general capital campaign as well as a request to the UW Foundation office to secure short-term project funding until an endowment can be secured;
- Partnered with SUNSET (Sustainable University Now, Sustainable Environment Tomorrow) to develop proposals for campus-focused sustainability research projects and posted these to the campus sustainability website;
- Is developing a major research proposal to investigate the ecological impacts of classroom delivery of instruction and identify ways of reducing these impacts and publishing a best-practices compendium for use by University of Winnipeg faculty;
- Developed various proposals for reducing paper consumption by setting “paperless exams”, recommending “e-books” as course texts, and recommending shifting to on-line course and instructor evaluation processes rather than using paper forms.

## Air Quality Management

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

**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.

### **GHG Emissions:**

The university’s GHG emission performance for FY2006 is summarized in the table below and compared to a GHG emission baseline estimated for FY1990 as well as measured performance for FY2005. Since last year, the university achieved a 1.7% *decrease* in emissions from electricity use, logged an 8% *increase* in emissions from natural gas consumption, nearly a 30% *reduction* in fleet vehicle emissions, a 25% *reduction* from staff travel and a 3% *reduction* in emissions from municipal solid waste. Despite obvious signs of progress, 80.5% of emissions arise from use of natural gas and for this reason, the university posted a *net overall increase of 2.9% in total GHG emissions for 2006* over 2005. It should be noted, however, that part of this increase can be attributed to a colder winter with 6% more Heating Degree Days in FY2006 than in FY2005. Moreover, while some reductions appear to be dramatic, they are also partly attributable to incomplete reporting of data, and factors beyond the university’s control such as Manitoba Hydro’s GHG “emission factor” per kWh of electricity. **To achieve the university’s Kyoto Protocol commitment by the 2012 deadline, total GHG emissions must decrease by 835 tonnes CO<sub>2</sub>e, or 19.7% from FY2006 levels.**

Factor	"Base Year" FY1990	FY2005	FY2006	% change FY2006 over FY1990	% change FY2006 over FY2005
Area Managed (m <sup>2</sup> )	74,903	91,750	91,750	+ 22.5	0.0
Total FCEs	24,675	30,921	30,179	+ 22.3	- 2.4
Heating DD (°C)	5,708	5,119	5,443	+ 4.6	+ 6.3
T. CO <sub>2</sub> e from Electricity	310.1	200.2	196.8	- 33.6	- 1.7
T. CO <sub>2</sub> e from Natural Gas	2,676.6	3,158.3	3,410.0	+ 27.4	+ 8.0
T. CO <sub>2</sub> e from Fleet Vehicles	10.0	14.2	10.1	0.0	- 29.9
T. CO <sub>2</sub> e from Business Travel	393.3	450.6	336.6	- 14.4	- 25.3
T. CO <sub>2</sub> e from MSW	231.3	294.4	285.2	+ 23.3	- 3.0
<b>Total T. CO<sub>2</sub>e All Sources</b>	<b>3,621.3</b>	<b>4,117.7</b>	<b>4,238.7</b>	<b>+ 17.0</b>	<b>+ 2.9</b>
<b>Reduction in total CO<sub>2</sub>e from 2006 to meet Kyoto by 2012:</b>			<b>835</b>	<b>- 19.7</b>	<b>n/a</b>

#### Air Quality Performance:

No systems are currently in place that return regular or comprehensive air quality assessments. Air quality complaints are registered with either Physical Plant staff or the university Safety and Health Officer. Such complaints continue to be received and dealt with individually depending on circumstances. No quantitative data are yet available on the number of complaints involved. Most seem to arise from unsatisfactory laboratory exhaust systems which will be corrected once the Richardson College for the Environment is completed. Other factors include occasional intake of bus exhaust fumes from Balmoral Street or the university loading docks in Centennial Hall. These are addressed by adjusting ventilation intakes.

#### Air Quality Management Initiatives:

- A new provincial by-law now prohibits smoking in public places in Manitoba, thus rendering the entire university campus a "smoke free" zone.
- A budget submission has been prepared for a comprehensive Electrical, Mechanical, Air Quality and Water Audit of all "core" campus facilities which, if approved, will substantially assist the university in planning strategic capital investments that improve IAQ.
- The Campus Sustainability Council will take up the challenge of developing the university as a scent free campus in the year ahead.
- New construction and renovations to university facilities are now required to meet or at least "shadow" LEED-NC 1.0 or LEED-CI standards which mandate low VOC (volatile organic compound) materials and finishes which will further reduce emissions that negatively affect IAQ.

## Energy Use Management

Energy consumption by the university includes electricity, natural gas, fleet vehicle and stationary fuels. Consumption values have been reported for FY2005 and FY2006 for comparison purposes. Regardless of fuel type, energy use has been converted to KwHe (kilowatt hours equivalent) to make year-over-year comparisons easier. Kilowatt hour equivalents are conversions made for different fuel types to express their energy content in a common unit of kilowatt hours rather than gigajoules for natural gas or stationary fuel and kilowatts for electricity. Both *absolute* energy values (KwHe) and *intensity* values (KwHe/FCE and KwHe/m<sup>2</sup>) are included. In general, absolute values are considered a more valid measure of sustainability performance, while intensity measures reflect improvements in efficiency but may still involve overall growth in the consumption of energy year-over-year. Finally, the proportion of energy used by the university which is derived from “renewable” sources is reported with hydro electricity being considered a renewable energy source, though not as low-impact as would be wind energy or electricity produced from photovoltaic (PV) arrays.

During FY2006, overall energy consumption increased 9.5% over FY2005. Part of this increase is attributable to a colder winter (6.3% more Heating Degree Days were incurred in FY2006 than in FY2005), but the university has logged at least a 3% increase in total energy consumed.

**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	FY2005	FY2006	% Change FY2006 over FY2005
Electricity (KwH)	12,749,501	14,259,663	+ 11.8
Natural Gas (KwHe) 10.58	17,670,028	19,077,781	+ 8.0
Fleet Vehicle Fuel (KwHe) 9.72	58,514	41,563	- 29.0
Stationary Fuel (KwHe)	-	-	-
<b>Total Energy (KwHe)</b>	<b>30,478,043</b>	<b>33,379,007</b>	<b>+ 9.5</b>
% Renewable Energy	41.8	42.7	+ 2.0
Celsius Heating Degree Days	5,119	5,443	+ 6.3
Energy (KwHe) / FCE	985.7	1,106.0	+ 12.2
Energy (KwHe) / m <sup>2</sup>	332.2	363.8	+ 9.5

### Energy Conservation Initiatives:

- PowerSmart relamping of all University buildings has now been completed promising to save \$38,000 / yr. in hydro costs (about 2 million KwH) and avoids 360 tonnes of GHG emissions, about 8.5% of total emissions.
- A proposal has been submitted to the budget process for funding to undertake a comprehensive Electrical, Mechanical, Air Quality and Water Audit of all core university buildings. If approved, the results of this audit will enable a wide range of decisions regarding the areas of university physical plant operations most in need of sustainability investments, and which offer the greatest potential for financial payback as well as gains in sustainability performance.

- Electrical and Mechanical upgrades are slated for Wesley Hall which will improve the overall comfort of the building but may have a neutral influence on energy consumption as improvements in efficiency gained by installation of new chillers for air conditioning may be off-set by added energy losses due to increased ventilation rates to improve indoor air quality.

## Green Procurement

Procurement activities at the university hold much potential for both cost savings and sustainability improvements. Procurement is the “feeding” end of the university as an organism and also represents a significant fraction of the overall operating budget. “Greening” procurement entails several aspects:

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

Currently, the university has little data other than financial profiling on the full range of its procurement activities, and almost no 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.

**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 Initiatives:**

- A comprehensive procurement audit has been proposed that will both identify priority areas for “green procurement” but also profile *all* procurement activities at the university so that total flows of matter and energy can be assessed and initiatives proposed to reduce them.
- Procurement guidelines have now been developed and are being incorporated into all RFPs and service contracts for suppliers and vendors serving the university.
- A rigorous set of sustainability requirements have been developed for inclusion in both Pre-Qualification Submission requirements and RFPs for the purchase / replacement of the university’s entire stock of imaging technology equipment (fax machines, printers, scanners, photocopiers, etc.).
- A weigh scale has been procured by the Shipping and Receiving Department that will enable tracking of the masses of goods, materials and services entering and leaving the university.

## Land Use Planning and Property Management

The renovation and maintenance of the university's existing physical plant 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 almost no 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 recently announced Richardson College for the Environment and Science Complex has rightly become the "flag ship" of university sustainability initiatives, renovation projects promise real gains in sustainability performance:

### **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 on which the Board has already been extensively briefed.

### **Duckworth Centre Expansion**

- A 780 m<sup>2</sup> expansion to Duckworth Centre has been designed by Prairie Architects to "shadow" as closely as possible the LEED-NC 1.0 standard for new construction, but since it is an addition to a much larger pre-existing facility, not all LEED criteria can be satisfied for the highest available ranking. The contractor is working to attain as many LEED points as possible given the available budget and the design constraints presented by the site and the building to which it will form an extension.

### **Wesley Hall Renovation**

- Extensive mechanical and electrical renovations are under way to Wesley Hall in addition to the recently completed refitting of the building cladding, insulation, windows and other equipment. Sustainability improvements that might be achieved are impossible 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 lost to increased ventilation rates to improve IAQ. Separate metering is planned for steam and electrical services which should allow independent tracking of Wesley Hall performance in the future.

### **T-21 Renovation**

- The renovation to the Theatre Building (T-21) was planned with reference to LEED-NC 1.0 and is likely only to meet minimum requirements for "LEED certification", i.e., below LEED Silver ranking. T-21 is separately metered for utilities and it should therefore be possible to assess what gains, if any, this renovation achieves following recommissioning.

## **Portage Commons**

- Currently under construction by Hilderman, Thomas, Frank, Cram, the redevelopment of the Portage / Spence face of the university includes a number of notable sustainability features:
  - Pavers are limestone blocks recycled from Convention Centre renovation;
  - More pavers are being recycled from the former landscape configuration;
  - Indigenous tree species (Trembling Aspen, American Elm) are being used in addition to conserving as many original trees as possible;
  - There will be a net gain in both number of trees and total green space after this development;
  - “Permascaped” ornamental beds will be established west of Wesley Hall;
  - Spruce trees will be moved from Duckworth to Wesley during construction of the Duckworth expansion;
  - Development should secure a net reduction in storm water run-off;
  - Net increase in CO<sub>2</sub> sequestration;
  - Storm water collection and recycling will provide water supply for ornamentals;
  - Possible inclusion of solar-powered bus shelter on Portage and Spence.

## **Other Accomplishments**

- Both environmental health and human health and safety specifications have been incorporated into a renewed cleaning services contract with Bee-Clean for maintenance of university buildings. Environmentally friendly cleaning products will also be specified in any new product supply contracts or RFPs in the future.
- The University will now require that all of its flooring material suppliers achieve an IDCE (International Design Centre for the Environment) Sustainability Certification as one requirement in considering purchase / installation of their products in university facilities.



## Social Sustainability Performance

The Campus Sustainability Council commenced work in November of 2006 to respond to the provision of the Campus Sustainability Policy which calls for development of policies and initiatives which specifically address the social dimension of sustainability. Work is expected to continue well into 2007 on this objective, with the following accomplishments to date:

- Four special meetings of the Campus Sustainability Council have been convened, in addition to its regular meetings, specifically to develop the goals, scope, aspects and preliminary outline of a social sustainability policy for the university.
- Three white papers have been prepared as background documents summarizing models of social sustainability, indicators and aspects, and consultation processes representing best practice in other regions.
- The University of Winnipeg has hosted a presentation by Marlene Roy, International Institute for Sustainable Development, a specialist in research on social sustainability and on facilitating development processes in institutions such as the university.

It is anticipated that with this work as a foundation, the Campus Sustainability Council and its working groups will be well positioned to move forward with this initiative in the fall of 2007.

## Sustainable Transportation

The university has made significant progress toward promoting adoption of more sustainable approaches to transportation among students, faculty and administration. The establishment of a Transportation Working Group of the Campus Sustainability Council mandated to develop a sustainable transportation policy, strategy and work plan has laid the foundation for future progress. All data currently available regarding transportation is derived either from parking statistics or a survey conducted by Winnipeg Transit in 2005. With the adoption by Senior Administration of the proposed set of indicators submitted by the Council, it is the plan of the Campus Sustainability Office to develop independent data gathering capability in the year ahead. Activities during the past year have included:

- Successfully assembling a Sustainable Transportation Working Group of the Campus Sustainability Council mandated to develop a comprehensive sustainable transportation strategy for the university. This working group has been meeting twice monthly since October, 2006.
- Successfully drafting a Sustainable Transportation Policy, performance goals, and transportation indicators for Senior Administration review and adoption.
- Successfully completing a comprehensive Sustainable Transportation Strategy for the University and have tabled a work plan with Senior Administration to effect implementation.
- Developing a concept paper for an Active Transportation Hub (Bike Station) for the university campus to provide bike parking, rental, service, equipment, training and amenities for cyclists and walkers to campus. This concept is now being developed toward an architectural program and feasibility study by a special working group being assembled for the purpose.
- Members of both the Centre for Sustainable Transportation and the Institute for Urban Studies are offering periodic presentations on sustainable transportation issues both to classes in the university and to community organizations, government audiences and citizens' groups across the country.
- A Ride-Sharing Registry has been successfully launched providing an on-line carpooling service that connects people who want to carpool to campus. There are currently 50 registrants from UW with an additional 800 in the community at large. Work is moving forward to expand the interconnectivity of UW-based and community-based ride-share systems.

## Waste Reduction and Materials Conservation

Considerable progress has been made in the last year in efforts to conserve material resources through the minimization of waste. This progress is not visible in the year over year comparison data from FY2005 to FY2006 as the effects of these initiatives will not be evident until FY2007 data are collected. Nevertheless, the implementation of a real-time waste measurement regime is returning accurate data on waste generation for the first time in the university's history—rather than estimates based on bi-annual audits. An agreement has also been finalized with Rockwood Agribusiness Ltd., to compost all organic material from the university which itself promises to reduce the MSW (Municipal Solid Waste) going to landfill by 50% with a corresponding saving in tipping fees and GHG emission reduction of around 4%. Additional research will be launched in the coming year to explore ways of further reducing the 30% or so of MSW which is still being sent to landfill.

**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.

Waste Reduction Summary	FY2005	FY2006	% change FY2006 over FY2005
Total Municipal Solid Waste Generated (tonnes)	225.7 <sup>1</sup>	233.7 <sup>2</sup>	+ 3.5
Total Materials Captured by Recycling (tonnes)	80.0 <sup>2</sup>	83.1 <sup>2</sup>	+ 3.9
Total Materials to Landfill (tonnes)	145.7	150.6	+ 3.4
MSW / FCE (kgs)	7.3	7.7	+ 5.5

<sup>1</sup> Values estimated based on actual weights measured for 2006, but backcasted to 2005 based on FCEs.

<sup>2</sup> Actual values based on measurement.

### **Materials Conservation (Waste Reduction) Initiatives:**

- Successfully negotiated compost processing services from Rockwood Agribusiness at the Rockwood Institution north of Winnipeg, thus potentially diverting as much as half of its current waste stream going to landfill and avoiding approximately 4% of our total GHG emissions;
- Successfully renegotiated terms of service with Chartwells Inc., the campus food services provider, to adopt compostable food service ware, thus easing the onus on university staff to perform source-separation of organic materials before shipping for composting;
- Successfully renegotiated its municipal solid waste removal contract in such a way that reducing the volume of resources going to landfill will now be reflected in reduced waste handling costs to the university;

- Establishment of organic waste collection and composting capacity for all organic wastes produced on campus. This program will reduce waste going to landfill by approximately 50%, GHG emissions by approximately 4%, and waste handling costs by 75% per tonne diverted.
- Successfully partnered with our sister post-secondary education institutions to renegotiate the terms and reporting protocols required to secure continued funding for campus recycling programs from Advanced Education and Training Manitoba;
- Successfully hosted a city-wide “Composting Summit” of public and private sector stakeholders and NGOs to search for a collective solution to Winnipeg’s organic waste management needs;
- The Bookstore has successfully installed an EDI paperless ordering system which replaces paper-based book ordering forms and fax machine with an on-line ordering system, thus reducing paper consumption and waste from the Bookstore operation.
- “E-waste” (spent electronic equipment) is currently collected for recycling in cooperation with PowerLand Computers, Inc. 100% of this equipment is currently being recycled in local facilities in Winnipeg. A quality control assessment is being planned to monitor this service 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.
- Establish capacity to capture and recycle toner cartridges from printers and other imaging equipment. Cartridges may now be repackaged and returned to Gold for recycling.
- 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 reducing wastes even further;
- Provided employment to students to perform the waste audit as well as numerous learning opportunities by way of participation in the Waste Reduction Working Group and the Campus Sustainability Council.

## 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. No initiatives have been launched during the last fiscal year to reduce water consumption, although a number of features of the design program for the Richardson College For the Environment and Science Complex, the T-21 renovation, and the Portage Commons development include water conservation objectives. Water consumption dropped by nearly 16% in FY2006 over FY2005, a highly desirable performance figure, but not attributable to any particular intervention. The decrement is being investigated and may be attributable to differences in average annual humidity which can affect evaporator performance in chiller towers.

**Goals:** The University of Winnipeg Water Use Management Policy aims to reduce waste of potable water to a minimum, encourage water conservation, recycling of grey water and storm water, and eliminate discharges of toxic substances to its waste water streams.

Water Consumption	FY2005	FY2006	% change FY2006 over FY2005
Water consumption (liters)	54,427,194	45,804,555	- 15.9
Cost	\$ 102,500.00	\$ 96,700.00	- 5.7
Liters / FCE	1,760	1,518	- 13.8
Liters / m <sup>2</sup>	593	499	- 15.9

### Water Conservation Initiatives:

- The Province of Manitoba now mandates that all new publicly funded buildings will comply with a minimum of LEED Silver rating in building performance, which includes standards for water conservation performance. This will apply to all new construction of university facilities that are provincially funded.
- The university's own Land Use Planning and Property Management Policy mandates LEED-EB and LEED-CI standard compliance for buildings undergoing renovation which also include water conservation objectives.
- A proposal has been submitted to the budget process for funding to undertake a comprehensive Electrical, Mechanical, Air Quality and Water Audit of all core university buildings. If approved, the results of this audit will enable decisions regarding the appropriate areas for capital investments to conserve water.