FY2011

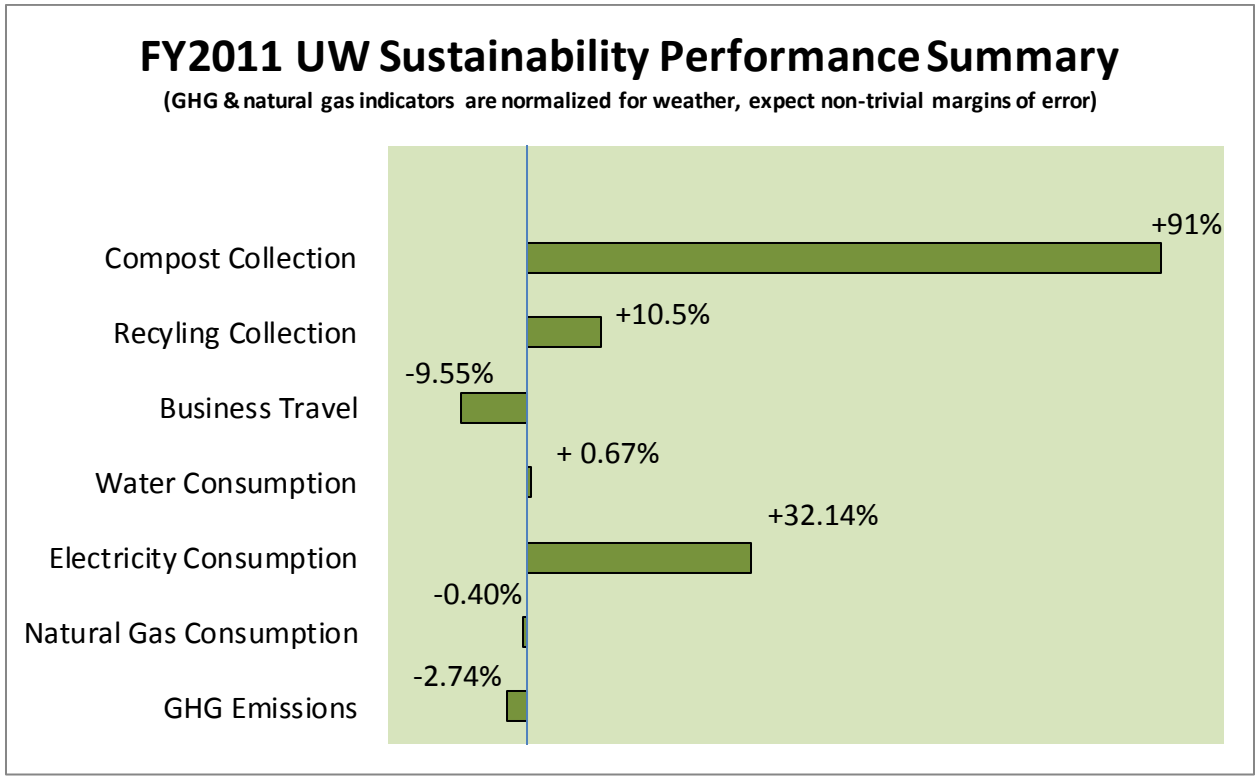
Sustainability Performance Report

THE UNIVERSITY OF WINNIPEG

Contents

1 Summary

1.1 Sustainability Performance



1.2 Key Achievements

UWinnipeg Sustainability Strategy: The University's Board of Regents passed the *UWinnipeg Sustainability Strategy* in January 2012. Initial Action Plans (IAPs) relative to each strategy target were created by those with key operational responsibilities over specific target areas.

Registration with The Climate Registry: Through the support of the Province of Manitoba's Climate Investment Pilot Capacity Building Grant, UWinnipeg registered to report its greenhouse gas emissions through The Climate Registry, a nonprofit collaboration among North American states, provinces, territories and Native Sovereign Nations that sets consistent and transparent standards to calculate, verify and publicly report

greenhouse gas emissions into a single registry. The University will report on emissions for calendar year 2012, and the report will be submitted in June 2013.

Hybrid Heating System: The University's hybrid heating system passed its final safety inspection in the spring of 2011. The smaller of the two electric boilers (in Centennial Hall) has been operational for approximately one year, while the larger of the two boilers will be turned on in the fall of 2012. Annual greenhouse gas emission savings associated with the use of the smaller of the two boilers are estimated at approximately 100 T CO2e, while the full system is projected to save approximately 1000 T CO2e.

Main Campus Renovations: The completion of the new Science Complex has allowed for the decommissioning of several old laboratories and of the vivarium in main campus buildings. These rooms required significant ventilation and heating. Their conversion to simple office and classroom space has resulted in reduced electricity and natural gas demands for core campus buildings.

Energy Retrofit: Along with Len Can, Director of Physical Plant, Kyle MacDonald was the co-recipient of this year's Campus Sustainability Recognition Award for his work in developing an energy retrofit plan for core buildings. The retrofit plan consists of control, ventilation, and heating system changes to existing buildings. Once complete, these changes will provide annual savings of up to 1,200 T CO2e, 650,000 m^3 of natural gas and 700,000 KwH of hydroelectricity. The measure package is projected to cost approximately $2M with a simple payback of 7-9 years. In 2011, the University was granted a Climate Mitigation Action Grant through the Manitoba Climate Investment Pilot Program to support the first phase of retrofit measures. In February, the Board of Regents approved a motion that would have UWinnipeg seek a loan to finance the remainder of the work. Some measures have already been completed, and the full retrofit package will take approximately 2 years to carry out.

Green Building Standards: UWinnipeg-specific 'Green Building Standards' are under development. They will apply to all new building projects. Final documents are on track to be complete by the end of July 2012, and are likely to consist of energy/GHG and other specifications to be included in owner's requirements for development projects; sustainability-related responsibilities assigned to project managers; sustainability-specific requirements included in project charters; and CSO participation in building operations readiness committees. Minutes of meetings and final documents will be on file in the CSO.

Composting Partnership with the Forks: In the summer of 2011, UWinnipeg and the Forks launched a pilot project through which the Forks began collecting the University's pre- and post-consumer compost. A formal MOU (memorandum of understanding) was signed in the fall of 2011 and UWinnipeg formally switched from its previous compost service provider to this new arrangement, reducing the distance between the University and the site handling its compost.

Bike Lab: The highly anticipated UWSA Bike Lab celebrated its grand opening on October 21, 2011. This new Lab is a cycling education and advocacy facility that provides the space, tools and support to allow students, faculty, staff, and community members to keep their bicycles running smoothly all year long. This bicycle repair facility and cyclist friendly courtyard is a meeting place brought to life with a partnership with

the University of Winnipeg Students' Association (UWSA) and The University of Winnipeg and designed by Peter Sampson Architectural Studio (PSA Studio). Programming in the Lab continues to thrive, and partnerships are also growing between the Lab, EcoKids on Campus and the Model School.

Richardson College For the Environment: On the 3rd floor of our new Science Complex are the first occupants of the College - the Institute of Urban Studies and its library; the Department of Indigenous Studies; the CN Indigenous Resource Centre; the Master's in Development Practice program; the UWinnipeg Sustainability Initiative; the Cisco Innovation Centre and its first Director, Herbert Enns; and two Canada Research Chairs—Dawn Sutherland and Evelyn Peters. The aim of the College is for members to work with each other, with others within the university, and with external partners to develop strategies that address some of our most pressing environmental issues, especially those related to climate change, urban environments, water resources, indigenous development, and the North. Since these issues have many points of intersection, the inter-disciplinary approach of the College is well suited to the development of the conversations and policies that are needed to address our environmental problems, locally and globally.

Green Office Project: Through the support of an Envirogrant from the Winnipeg Foundation, the CSO hired a summer student to develop a user friendly 'Greener Office' program at UWinnipeg to reduce the environmental impact of individual departments. Through FY2011, initial research for the project was undertaken and several faculty and staff members participated in focus group meetings to assist in the development of the program. The CSO aims to pilot the program with 2-5 offices during the 2012/2013 academic year.

1.3 Kyoto Compliance Forecast

In FY2011, UWinnipeg's weather adjusted greenhouse gas emissions were slightly lower (2.74%) than they were in FY2010 despite the addition of 147,315 square feet (13,686 square meters) of owned space. This can be viewed as an achievement. With the installation of the University's hybrid heating system complete and an energy retrofit to core campus buildings underway, UWinnipeg is positioned to achieve its goal of reducing emissions 6% below 1990 levels by the end of FY2012. Achieving, maintaining and building on these reductions will require careful attention to the impacts of new building developments and strong commitment to completing all energy retrofit projects.

With this first target in sight, UWinnipeg must now begin to set its sights beyond 2012, both with respect to its GHG reporting activities and to its GHG reduction plans. The University's current GHG reduction plan aims to achieve a 10% reduction below 1990 emissions by 2016. Achieving further reductions beyond this goal is likely to require the introduction of non-conventional sources of energy (i.e. not natural gas or hydro-electricity). Moving forward, reporting activities may begin to incorporate leased spaces and more sources of indirect emissions. These reports will also be made more public through registration with The Climate Registry.

2 Introduction

2.1 Reporting Period and Scope

This report applies to FY2011 – April 1 2011-March 31 2012, and applies to the full scope of the University of Winnipeg's Sustainability Management System. This 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 centres or other entities, to which University policies may generally apply.

2.2 Sustainability Governance & Strategic Plan

Implementation of the University of Winnipeg's Sustainability Policy, along with its eight accompanying administrative policies is coordinated through the Campus Sustainability Office, with the help of the Campus Sustainability Council and its various committees. With the support of the Manager of the Campus Sustainability Office, the VP HR, Audit & Sustainability champions sustainability-related issues at the University's senior level.

In January 2012, The University's Board of Regents adopted the *UWinnipeg Sustainability Strategy*. This document, aimed at advancing progress on the implementation of the University's Sustainability Policy and 8 related administrative policies, providing a roadmap for sustainability-related action and initiatives throughout the University.

2.3 Annual Demographic, Weather, and Space Variations

The number of people on campus, annual variations in weather, and changes in the campus footprint all have an impact on the University's sustainability performance. More people, cold winters, hot summers, and a larger footprint will all increase resource demand, while fewer people, warmer winters, cooler summers, and reductions in the University's footprint would have the opposite effect.

2.3.1 UWinnipeg Occupied Space

The University of Winnipeg's annual sustainability report reflects data on buildings that the University owns and/or that the University exercises some degree of control over utility consumption. With the exception of electricity consumption at 520 Portage Avenue, this report does not include data on leased space, as the University does not have any operational control over it and does not have access to utility consumption data. The table below summarizes campus area over the past several years.

UWinnipeg Space Inventory (square feet)							
	TOTAL AREA LEASED	TOTAL AREA OWNED	HOUSING OWNED	HOUSING LEASED	TOTAL AREA OCCUPPIED	TOTAL OWNED SPACE	TOTAL LEASED SPACE
1990	NA	943,423	0	0	NA	943,423	NA
2005	56,200	1,043,952	19,097	38,088	1,157,337	1,063,049	94,288
2006	63,601	1,043,952	19,097	38,088	1,164,738	1,063,049	101,689
2007	72,682	1,043,952	21,097	38,088	1,175,819	1,065,049	110,770
2008	81,595	1,041,052	23,097	38,088	1,183,832	1,064,149	119,683
2009	70,653	1,034,769	94,703	38,088	1,238,213	1,129,472	108,741
2010	53,040	1,068,257	91,287	38,088	1,250,672	1,159,544	91,128
2011	76,243	1,217,572	89,287	38,088	1,421,190	1,306,859	114,331

UWinnipeg owned 147,315 more square feet and leased 23,133 more square feet on March 31 2012 than on March 31 2011. Changes to occupied space in FY2011 included the opening of the Science Complex & Richardson College for the Environment (+149,315 sq. ft., owned), acquisition of the AnX (+26,785 sq. ft., leased), sale of a student residence house on Spence Street (-2000 sq. ft. owned), and the relocation of the Institute of Urban Studies from leased space at 520 Portage Avenue to the new Science Complex (-3672 sq. ft. leased).

2.3.2 Campus Population & Operational Changes

There were modest increases both in the number of staff and students on campus in FY2011. This might cause a very slight increase in the amount of energy and water consumed on campus, and on the amount of waste generated. There have not been significant changes to campus hours of operation or other building use patterns that may impact the resource use of the University.

UWinnipeg Student & Staff Population		
	FCE #	Staff #
FY2006	30180	639.73
FY2007	30626	663.33
FY2008	30160	697.81
FY2009	34670	697.08
FY2010	33920	723.69
FY2011	34980	755.63

FCE=full course equivalent

2.3.3 FY 2011 Weather

The winter of 2011/12 (Dec-Feb) in Winnipeg, was the 4th warmest on record (out of 140 winters) for mean temperatures, almost 6 degrees above normal. For maximum temperatures, it was the 2nd warmest. At 8.3 degrees above normal mean temperatures, the month of March was the warmest on record (1872-2012). It was also the driest winter on record for the prairies.

This caused a substantial decrease in the University's natural gas consumption for heating. Natural gas consumption for FY2010 and FY2011 was therefore normalized against 30 year averages to enable a reasonable comparison between these two years. Further work is required to extend this weather normalization procedure to all previous reporting years. FY2011 was also a dry year (430 mm vs. 761 in FY2010and 1028 mm 30 year average). We can expect this to have increased demand for potable water use for the purpose of landscaping.

Winnipeg Weather Data*			
	HDD**	CDD***	Precipitation
FY2006	5443	NA	NA
FY2007	5897	NA	NA
FY2008	6002	NA	NA
FY2009	5464	119	460 mm
FY2010	5600	173	761 mm
FY2011	5117	250	430 mm

*Richardson International Airport weather data

**Heating degree-days (HDD) for a given day are the number of Celsius degrees that the mean temperature is below 18°C.

*** Cooling degree-days (CDD) for a given day are the number of Celsius degrees that the mean temperature is above 18°C.

3 Governance

3.1 Key Activities & Report on *UWinnipeg Sustainability Strategy* Commitments

UWinnipeg Sustainability Strategy: The University's Board of Regents passed the *UWinnipeg Sustainability Strategy* in January 2012. The document is available on the Campus Sustainability Office's website. Initial Action Plans (IAPs) relative to each target set in the strategy were created by those with key operational responsibilities over specific target areas. These IAPs represent commitments to undertake specific initiatives to support progress relative to targets, and will be reported on annually.

UWinnipeg Strategic Review Submission: The Campus Sustainability Council prepared a written submission to the University's Strategic Review consultation process. The University's Strategic Review is meant to be complete in fall 2012.

UWinnipeg Strategy Review Student Submission: With the support of the first GESA/EcoPIA Eco-Grant, UWinnipeg students Robin Bryan and Elizabeth Shearer coordinated the preparation of a student submission to the Strategic Review process highlighting student priorities relative to campus sustainability.

Registration with The Climate Registry: Through the support of the Province of Manitoba's Climate Investment Pilot Capacity Building Grant, UWinnipeg registered to report its greenhouse gas emissions through The Climate Registry, a nonprofit collaboration among North American states, provinces, territories and Native Sovereign Nations that sets consistent and transparent standards to calculate, verify and publicly report greenhouse gas emissions into a single registry. The University will report on emissions for calendar year 2012, and the report will be submitted in June 2013.

Climate Action Plan: In compliance with College & University Presidents' Statement on Climate Change Action, UWinnipeg was meant to publish its Climate Action Plan by April 1st 2012. While the University has developed its plan, the preparation of the CAP document has been delayed due to temporary staffing shortages in the Campus Sustainability Office. The document is being drafted over the summer of 2012 and will be presented to the Campus Sustainability Council for discussion and approval in the fall.

3.2 FY2012 Activities: Strengthening Public Reporting

Key governance activities in FY2012 will include filing the University's greenhouse gas emission inventory with The Climate Registry, completing the University's Climate Action Plan, and preparing to register and report through STARS. STARS – the Sustainability Tracking, Assessment & Rating System - is a transparent, self-reporting framework for colleges and universities to measure their sustainability performance. It is quickly becoming the standard North American campus sustainability benchmarking tool. The completion of the *UWinnipeg Sustainability Strategy*, registration with The Climate Registry, and introduction of STARS in North America all present the need for significant changes to the ways in

which UWinnipeg monitors, tracks, and reports on it sustainability performance. Over the next 2-3 years, the University will work to harmonize its internal indicators and reporting schedule with those used by STARS and The Climate Registry. Through this process, UWin nipeg will remain committed to emphasising absolute, rather than intensity-based, natural resource use and greenhouse gas emission indicators. This commitment may require UWinnipeg to continue to prepare its own sustainability report alongside those reports required by STA RS.

4 Air, Energy, Land & Water

4.1 Key Activities & Report on *UWinnipeg Sustainability Strategy* Commitments

Hybrid Heating System: The University's hybrid heating system passed its final safety inspection in the spring of 2011. The smaller of the two electric boilers (in Centennial Hall) has been operational for approximately one year, while the larger of the two boilers will be turned on in the fall of 2012. Annual greenhouse gas emission savings associated with the use of the smaller of the two boilers are estimated at approximately 100 T CO2e, while the full system is projected to save approximately 1000 T CO2e.

Washroom Retrofit: Progress on a campus-wide washroom retrofit project continued through FY2011 – an estimated 75% of all water fixtures on campus are now low-flow. While the *Strategy* goal is to complete this retrofit by the end of FY2012, the project may be delayed due to other priorities such as Duckworth renovation part of the Field House and Wellness Centre.

Main Campus Renovations: The completion of the new Science Complex has allowed for the decommissioning of several old laboratories and of the vivarium in main campus buildings. These rooms required significant ventilation and heating. Their conversion to simple office and classroom space has resulted in reduced electricity and natural gas demands for core campus buildings.

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Utility Data Collection: Utility data for owned and leased space was collected directly from utility providers in FY2011. This process has allowed the University to address minor gaps in data collection and to verify the accuracy of data collected throughout the year. It has also facilitated progress in achieving a better understanding of the water metering/reporting challenges discussed in last year's report.

Energy Dashboard & Smart Metering: Late in FY2011, the University began exploring the possibility of acquiring energy dashboard software to allow easy, real-time access to utility data. Such software would be of most use if the University were to install smart meters for all natural gas, electricity, and water metered areas on campus. Smart water meters are being provided by the City of Winnipeg. The University is still looking for a means of acquiring smart meters for natural gas and electricity.[1]

Building Acquisition Processes: The *Strategy* included a commitment to ensuring that all new building acquisitions at UWinnipeg undergo an evaluation of their impact on the energy and GHG profile of campus. The University has indeed met the commitment to evaluate the energy and GHG impacts of any building acquisitions in FY2011; however, it will be important to document and clarify procedure and policy with respect to this commitment in the years ahead.

UWSA Greenspace Coordinator: The UWSA approved an expanded community gardening program for the summer of 2012, supported by a greenspace coordinator position at 20 hour per week. This expanded programming is slated to include more garden plots and increased partnerships with neighbourhood groups.

Richardson College for the Environment & Science Complex: The grand opening of the RCFE & Science Complex took place on June 27, 2011. The building is The University of Winnipeg's new home for science, sustainability initiatives, indigenous studies, and community learning programs. The building has been built to LEED Gold standards and features recycled materials, a tree-filled atrium, labs with state-of-the-art energy efficiency, and a heat recovery system.

LEED Certification: The LEED certification process for the Buhler building is underway. Once complete, it will be the third UWinnipeg building to achieve LEED Silver (McFeetors Hall was certified January 6, 2011 and the Daycare was certified on November 9, 2010).

[1] In provinces already making extensive use of smart meters, some concerns have been raised about the potential health effects of this technology. As with any wireless device, such as cell phones and Wi-Fi tools, some of the energy emitted by smart meters will be absorbed by anyone who is nearby. Health Canada has concluded that exposure to energy from smart meters does not pose a public health risk. For more information, see: http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/meters-compteurs-eng.php

4.2 Performance

*****Due to the exceptionally warm winter in FY2011, natural gas consumption and associate GHG emissions were significantly lower in FY2011 as compared to FY2010. Natural gas data for FY2010 and FY2011 were therefore normalized for weather based on 30 year averages in Winnipeg using regression analysis. While the methodology used to achieve this normalized data should provide a representative comparison between these two years, it will benefit from further development before being applied to all utility data (i.e. energy intensity indicators, electricity indicators) and being back cast to earlier reporting years. In particular, the method used here will benefit from more precise calculations of baseload energy loads throughout campus. Through FY2012, the CSO will work to improve its normalization methodology and will also consider the benefits of switching from normalization based on 30 year averages to normalization against a given base year.*****

4.2.1 Greenhouse Gas Emissions & Kyoto Compliance Forecast

In FY2011, UWinnipeg's weather adjusted greenhouse gas emissions were slightly lower (2.74%) than they were in FY2010 despite the addition of 147,315 square feet (13,686 square meters) of owned space. Efforts at improving energy efficiency in core buildings and the operation of the first of two electric boilers in Centennial Hall appear to be having a measurable effect – an achievement for which the many individuals who have championed these projects can be proud.

With the installation of the University's hybrid heating system complete and an energy retrofit to core campus buildings underway, UWinnipeg is positioned to achieve its goal of reducing emissions 6% below 1990 levels by the end of FY2012. Achieving, maintaining and building on these reductions will require careful attention to the impacts of new building developments and strong commitment to completing all energy retrofit projects.

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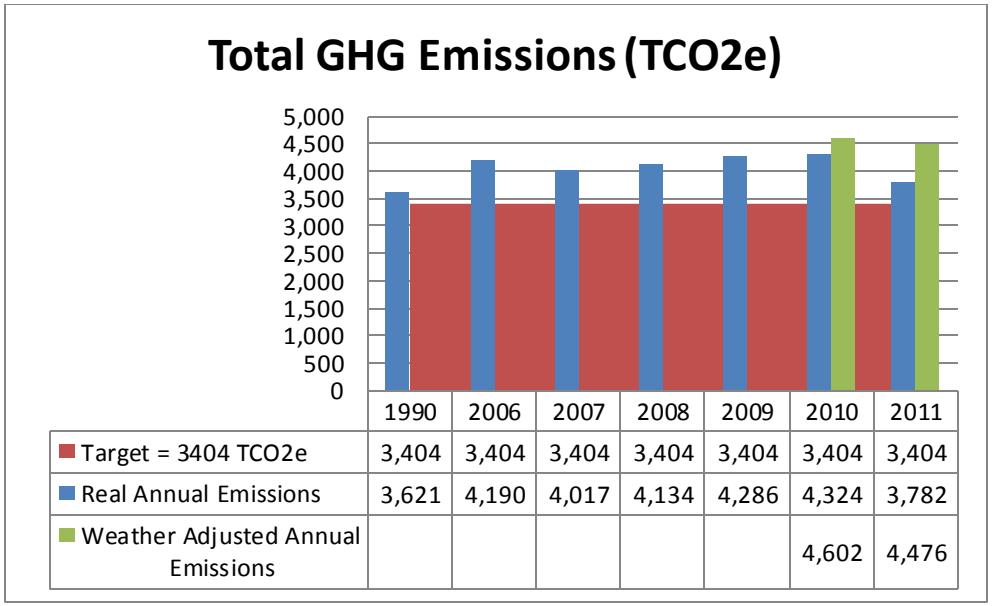
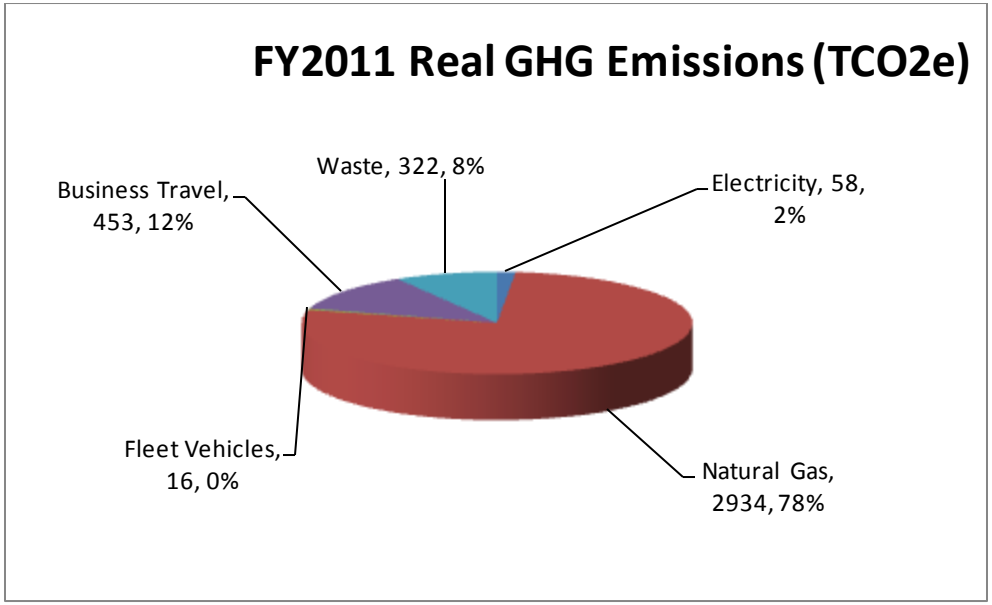
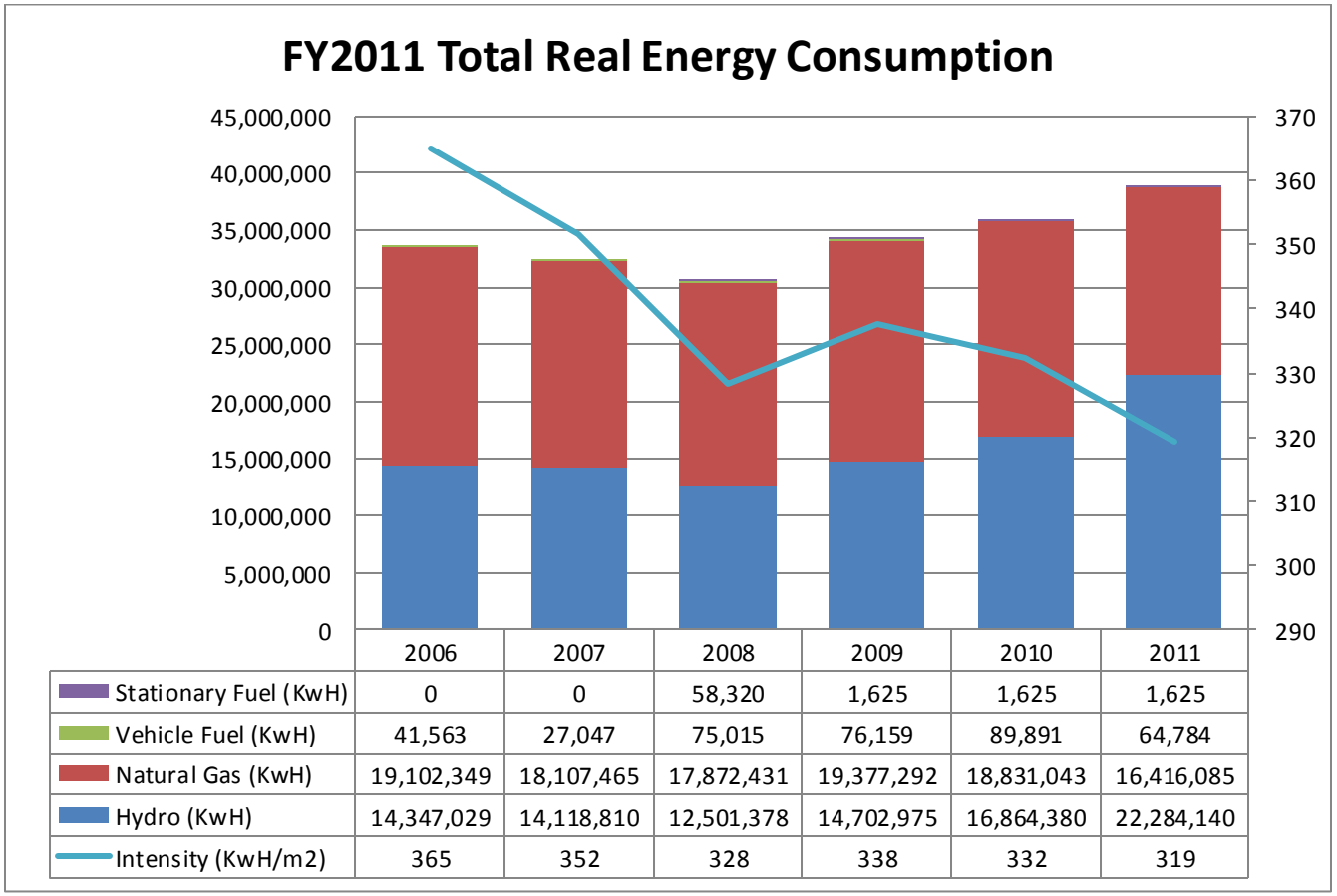


	1990	2006	2007	2008	2009	2010	2011
Target = 3404 TCO2e	3,404	3,404	3,404	3,404	3,404	3,404	3,404
Real Annual Emissions	3,621	4,190	4,017	4,134	4,286	4,324	3,782
Weather Adjusted Annual Emissions						4,602	4,476



4.2.2 Total Energy

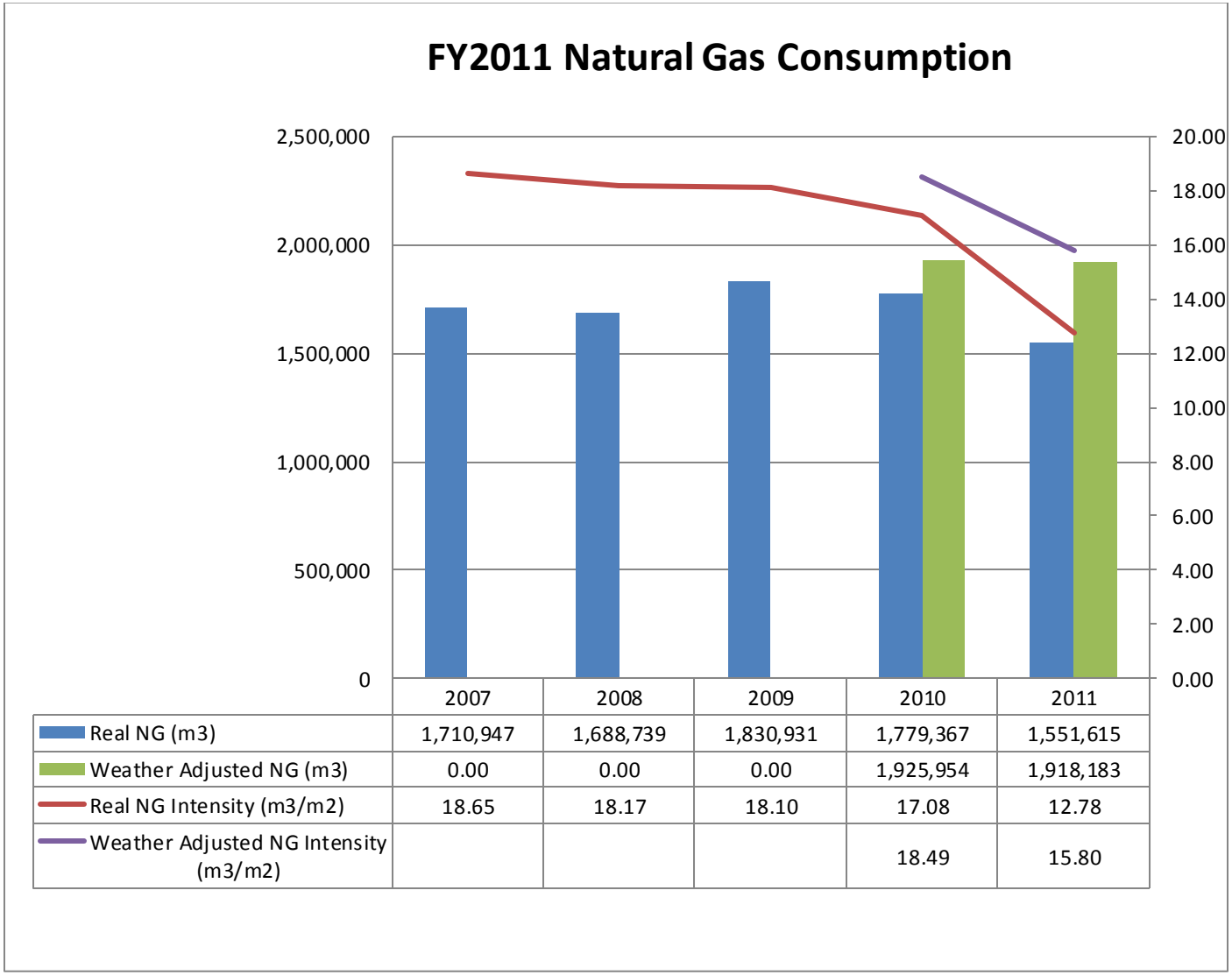
Total energy consumption includes the use of natural gas for heating, hydro-electricity, gasoline in fleet vehicles, and a small amount of stationary fuel for the University's back-up diesel generator. Total energy consumption increased by 8.3%, from 35,786,939 KwH in FY2010 to 38,766,633 KwH in FY2011. Energy intensity of operations decreased 3.9%, from 332 KwH/m^2 in FY2010to 319 KwH/m^2 in FY2011. The proportion of energy use from renewable sources (hydroelectricity) increased from 47.12% in FY2010 to 57.48% in FY2011. This reflects mechanical design decisions aimed at minimizing the use of fossil fuels in new buildings as well as the operation of one off-peak electric boiler on main campus to offset natural gas consumption. The proportion of electricity use is projected to increase again in FY2012 as the second, and larger, electric boiler on main campus comes online.



	2006	2007	2008	2009	2010	2011
Stationary Fuel (KwH)	0	0	58,320	1,625	1,625	1,625
Vehicle Fuel (KwH)	41,563	27,047	75,015	76,159	89,891	64,784
Natural Gas (KwH)	19,102,349	18,107,465	17,872,431	19,377,292	18,831,043	16,416,085
Hydro (KwH)	14,347,029	14,118,810	12,501,378	14,702,975	16,864,380	22,284,140
Intensity (KwH/m2)	365	352	328	338	332	319

4.2.3 Natural Gas Consumption

Total natural gas consumption decreased by 12.8% and intensity of natural gas consumption (cubic meters used per square meter of occupied space) decreased by 25.2%. The warm winter was certainly a very significant contributing factor to this decrease; however, the various energy efficiency measures outlined above have also clearly begun to produce results.



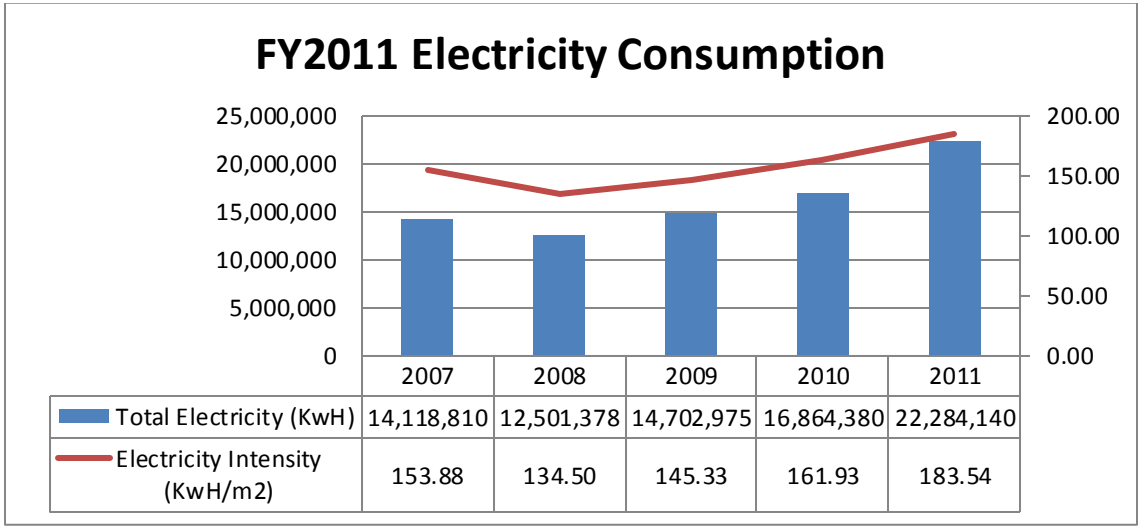
	2007	2008	2009	2010	2011
Real NG (m3)	1,710,947	1,688,739	1,830,931	1,779,367	1,551,615
Weather Adjusted NG (m3)	0.00	0.00	0.00	1,925,954	1,918,183
Real NG Intensity (m3/m2)	18.65	18.17	18.10	17.08	12.78
Weather Adjusted NG Intensity (m3/m2)				18.49	15.80

Year over Year Real Natural Gas Consumption by Building*				
Building	2011 Total (m3)	2010 Total (m3)	% Change	% of Total NG
Duckworth Centre	57,391	55,211	3.95%	3.72%
460 Portage (Buhler)	24,543	14,059	74.57%	1.59%
511 Ellice (Helen Betty Osborne)	17,519	19,514	-10.22%	1.14%
Garage	1,663	1,964	-15.34%	0.11%
Lockhart Hall	190,535	315,855	-39.68%	12.36%
MacNamara Hall	7,793	11,165	-30.20%	0.51%
T21 (Theatre)	70,042	83,700	-16.32%	4.54%
Wesley Hall	2,016	2,004	0.59%	0.13%
Ashdown (F)	27,252	27,478	-0.82%	1.77%
Ashdown (I)	850,943	1,081,954	-21.35%	55.20%
548 Furby (UWSA Daycare)	16,636	17,174	-3.13%	1.08%
359 Young	8,209	10,205	-19.56%	0.53%
RCFE 599 Portage	179,174	NA	NA	11.62%
480 Portage	17,889	12,522	42.86%	1.16%
266 Balmoral	2,962	2,905	1.98%	0.19%
270 Balmoral	4,875	3,948	23.47%	0.32%
278 Balmoral	6,279	5,605	12.03%	0.41%
284 Balmoral	5,612	6,036	-7.02%	0.36%
449 Spence	3,816	5,083	-24.93%	0.25%
377 Langside	1,221	NA	NA	0.08%
370 Langside (McFeetors)	45,233	102,985	-56.08%	2.93%

*orange=owned teaching/research/office space blue=teaching/research/office leased space green=owned housing space

4.2.4 Electricity Consumption

Total electricity consumption increased 32.14% and electricity intensity increased 16.58% in FY2011. This increase can be mainly attributed to the operation of a new electric boiler in Centennial Hall to offset natural gas consumption and to the first full year of operation of the Buhler Building.



Year Over Year Electricity Consumption by Building				
Building	2011 Total (KwH)	2010 Total (KwH)	% Change	% of Total Electricity
Duckworth Centre	1,896,170	1,910,000	-0.72%	8.51%
Buhler - 460 Portage	1,209,600	656,160	84.35%	5.43%
511 Ellice	14,112	13,253	6.48%	0.06%
511 Ellice	202,920	205,320	-1.17%	0.91%
Garage (MacNamara Hall)	4,925	4,985	-1.20%	0.02%
Lockhart Hall	8,016,980	8,560,008	-6.34%	35.99%
MacNamara Hall	224,040	235,080	-4.70%	1.01%
Manitoba Hall	2,244,948	1,904,172	17.90%	10.08%
T21 Theatre	442,080	479,880	-7.88%	1.98%
Wesley Hall	669,240	652,320	2.59%	3.00%

359 Young	46,080	48,300	-4.60%	0.21%
346 Young St. - lightpost	2,365	NA	NA	0.01%
400 Young St.	2,966	NA	NA	0.01%
480 Portage	75,780	71,160	6.49%	0.34%
520 Portage Ave	14,709	148,344	-90.08%	0.07%
266 Balmoral	5,912	6,195	-4.57%	0.03%
270 Balmoral	9,730	9,990	-2.60%	0.04%
278 Balmoral	17,843	14,603	22.19%	0.08%
284 Balmoral	12,451	13,133	-5.19%	0.06%
449 Spence	4,662	6,823	-31.67%	0.02%
377 Langside	17,690	NA	NA	0.08%
RCFE/ Park Lot	7,138,800	1,924,654	270.91%	32.05%
Daycare				
McFeetors				

*orange=owned teaching/research/office space blue=teaching/research/office leased space green=owned housing space

4.2.5 Fleet Vehicles

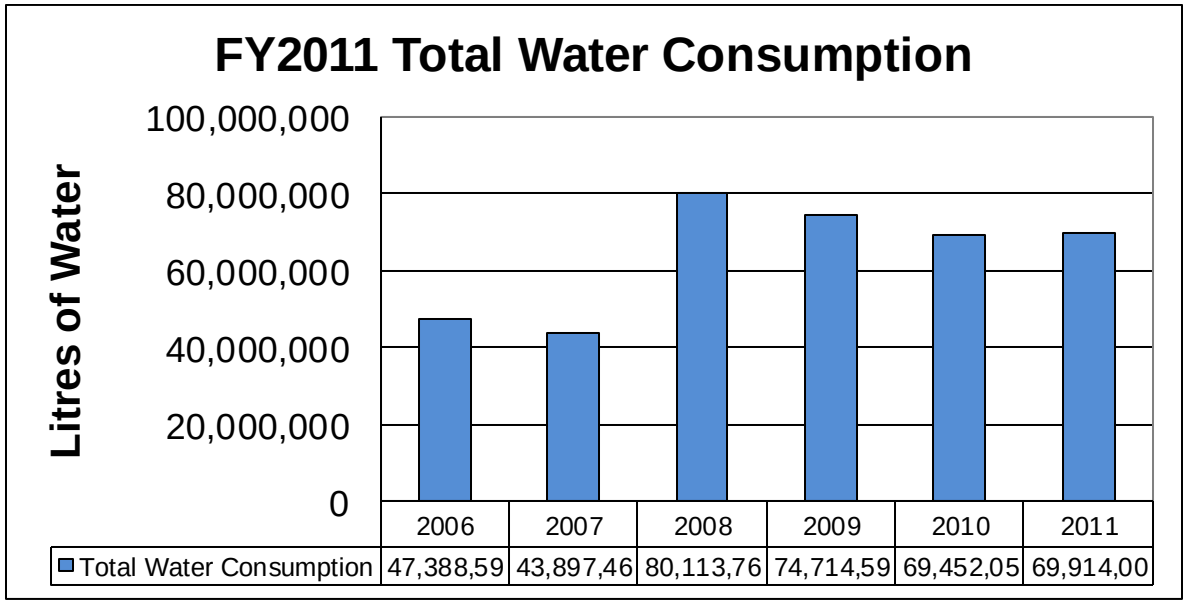
The total fuel consumed by fleet vehicles decreased 18% in FY2011. No specific initiatives contributed to this change. The number of vehicles remained unchanged; however, the Physical Plant replaced its Security Van with a newer van model.

Fleet Vehicle Fuel Consumption (L)	FY2007	FY2008	FY2009	FY2010	FY2011	% change 2010/2011
Bobcats (Diesel)	915	928	871	1,205	918	-24%
Enrollment Services	1,160	824	1,131	955	883	-8%
Physical Plant Van	748	974	724	764	668	-13%
Security Van**	3,288	4,992	5,109	5,200	4195	-19%
Total (Regular Fuel)	5,196	6,790	6,964	6,920	5746	-17%
Total (Diesel Fuel)	915	928	871	1,205	918	-24%
Total (All Fuel)	6,111	7,718	7,835	8,125	6665	-18%

** FY2010 is estimated

4.2.6 Water Consumption

With a 0.67% increase in water consumption in FY2011, total water use remained relatively stable. Given the addition of the new Science Complex and a full operational year for the Buhler Building, this relative stability suggests that the washroom retrofit that is currently underway on main campus is having the desired effect. The University can hope for continued improvements in water efficiency as the retrofit is completed.



Year Over Year Water Consumption by Building				
Building	2011 Total (l)	2010 Total (l)	%Change	%Total Water
Ashdown Hall	0	0	0.00%	0.00%
Bryce Hall	3,034,500	4,781,500	-36.54%	4.34%
Buhler Centre	1,757,800	276,000	536.88%	2.51%
Duckworth Centre	13,506,000	16,825,000	-19.73%	19.32%
511 Ellice-HBO	701,100	1,047,200	-33.05%	1.00%
Garage	115,600	85,200	35.68%	0.17%
Graham Hall	599,000	676,000	-11.39%	0.86%
Lockhart Hall	27,454,000	30,627,000	-10.36%	39.27%
McNamara North	102,800	67,800	51.62%	0.15%

MacNamara South	764,300	739,500	3.35%	1.09%
T21 (Theatre)	414,000	386,000	7.25%	0.59%
Wesley Hall	5,685,900	6,938,200	-18.05%	8.13%
359 Young	81,800	100,900	-18.93%	0.12%
548 Furby (Day Care)	643,500	644,800	-0.20%	0.92%
RCFE	6,000,000	NA	NA	8.58%
480 Portage	538,800	655,700	-17.83%	0.77%
266 Balmoral	28,400	296,800	-90.43%	0.04%
270 Balmoral	194,200	784,100	-75.23%	0.28%
276 Balmoral	1,513,300	944,200	60.27%	2.16%
284 Balmoral	412,500	585,300	-29.52%	0.59%
449 Spence	111,700	435,300	-74.34%	0.16%
370 Langside	6,234,000	2,661,000	134.27%	8.92%
377 Langside	20,800	15,600	33.33%	0.03%

*orange=owned teaching/research/office space blue=teaching/research/office leased space green=owned housing space

4.2.7 Other Air, Energy, Land & Water Performance Issues

The University maintains its commitment to xeriscaping (landscaping and gardening in ways that reduce or eliminate the need for supplemental water from irrigation) and green cleaning throughout campus. Challenges relative to maintaining these practices are regularly addressed by the Campus Sustainability Office and ongoing compliance monitoring systems are under development. Other air, energy, land, and water performance indicators can be found in Appendix A.

4.3 FY2012 Activities: retrofits, greener building, greenspace & developing innovative energy solutions

Through FY2012, UWinnipeg will focus on implementing its energy and water retrofit projects and on ensuring that its new green building guidelines are properly implemented as the Field House development begins to take shape. With the energy retrofit underway, it is now time to start looking seriously for alternatives to natural gas and electricity. Many of the barriers UWinnipeg faces with respect to reducing our dependence on natural gas are shared by many institutions in Manitoba. The University may therefore consider what role it can play in facilitating dialogue and strategies aimed at reducing these barriers throughout the province. Finally, several initiatives relative to outdoor space on campus are beginning to emerge. These include a renewed appetite for an integrated pest management plan, the development of an ethnobotanical garden, a re-imagined B-Lot, and the potential for interactive interpretive signage and art throughout campus to create more opportunities from campus/community dialogue and engagement.

5 Waste Diversion

5.1 Key Activities & Report of *UWinnipeg Sustainability Strategy* Commitments

Composting Partnership with the Forks: In the summer of 2011, UWinnipeg and the Forks launched a pilot project through which the Forks began collecting the University's pre- and post-consumer compost. A formal MOU (memorandum of understanding) was signed in the fall of 2011 and UWinnipeg formally switched from its previous compost service provider to this new arrangement, reducing the distance between the University and the site handling its compost.

Renovation Waste Management: Throughout the renovations that took place on the University's main campus in FY2011, significant efforts were made to recycle and reuse construction waste. While a quantitative account of diversion activities in this area is not available, contractors and UWinnipeg staff can be commended for their efforts in this area. Efforts to strengthen documentation practices relative to construction waste are underway.

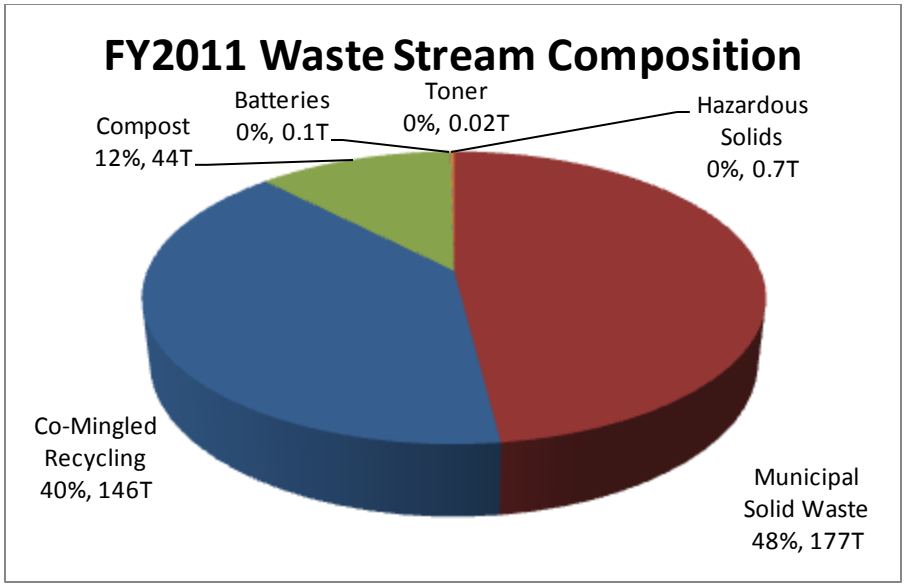
Battery Recycling: In January 2012, UWinnipeg launched an expanded battery and cell phone recycling program. All students, faculty, staff and members of the community can now bring any cell phones and batteries weighing less than 5 kg to The University of Winnipeg to be recycled. Battery and cell phone recycling boxes can be found in most photocopy/mail rooms as well as at the InfoBooth, the UWSA offices, and the front security desk in the Science Complex.

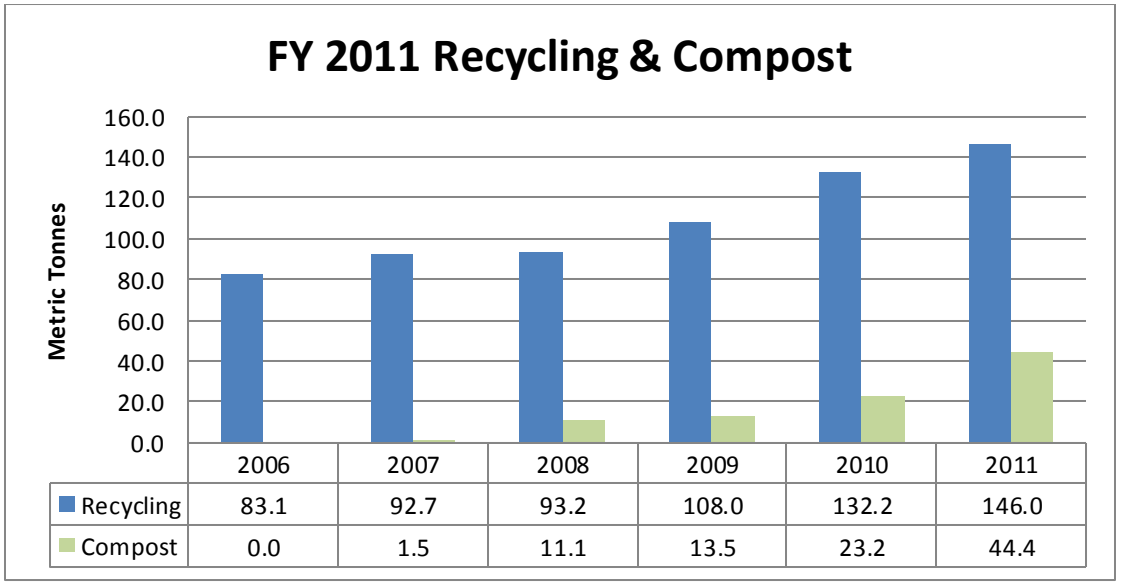
Waste/Recycling Bin Changes: Several changes related to recycling bins on campus were undertaken in 2011. Outdoor recycling bins were installed next to all outdoor waste bins on campus; all stand-alone garbage bins (i.e. bins that are not paired with recycling bins) were removed from hallways; Classrooms will soon be equipped with recycling bins to go alongside existing trash cans; and we are currently investigating options for improved bin styles and configurations in food service areas.

5.2 Performance

The accuracy of waste-related data continues to be a matter of significant concern. Municipal Solid Waste weights for FY2011 have been derived based on the size and number of waste bins (i.e. 'dumpsters') on campus and the total number of waste pick-ups carried out by the University's waste hauler. A portion of co-mingled recycling weights have also been derived in this way. These numbers have been provided by our waste contractor. Compost weights are less accurate than in previous years, as the Forks, being unable to provide the University with monthly collection weights, provides a bin count that must then be translated into weight on the basis of the average weight of a full compost bin.

Data suggests that compost collection increased dramatically again in FY2011 (91%). This reflects the opening of two new restaurants on campus. Recycling rates also increased by 10.5%. Given the year over year uncertainty in Municipal Solid Waste weights, meaningful representation of total waste to landfill performance is not possible; however current data suggests a diversion rate of 52%.





	2006	2007	2008	2009	2010	2011
Recycling	83.1	92.7	93.2	108.0	132.2	146.0
Compost	0.0	1.5	11.1	13.5	23.2	44.4

5.3 FY2012 Activities: Bin Improvements, Community e-waste & Tracking

In the coming year, the CSO and Physical Plant will complete the deployment of classroom and office recycling bins, will work to improve bin provisions in food service areas and main-campus hallways, will seek to install compost collection site in main thoroughfares of main campus buildings; will work to establish UWinnipeg as a community electronic-waste drop-off location; will endeavour to re-establish solid-waste tracking capabilities; and will seek external partners to enable the completion of a campus-wide waste-audit.

6 Waste Reduction & Procurement

6.1 Key Activities & Report of *UWinnipeg Sustainability Strategy* Commitments

Tracking: In the spring of 2012, a summer student was to be hired to begin investigating options for Mass/Volume/Composition based procurement tracking system. Budget pressures and staff turnover in Procurement Services resulted in funds not being identified for this project.

Staff Turnovers in Procurement Services: In FY2011, one of the University's Purchasing Agents left the department, which has been operating at a reduced staffing level since then. The department was also without a Director for some time – a situation that was remedied in the summer of 2012. These staffing issues present particular challenges for the implementation of waste reduction and procurement-related initiatives as there are already significant pressures on staff to continue supporting existing procurement services for the University.

Paper Purchases: Near the end of FY2011, the University began printing all its business cards on 100% recycled cardstock. Further changes to paper purchasing practices are planned for FY2012.

6.2 Performance

The University's purchasing agents continue to put forward their best efforts under limited resources to support UWinnipeg's green procurement goals. These include the inclusion of sustainability requirements in Requests for Proposals, prioritizing suppliers with environmental certifications, and emphasizing the purchase of products made from recycled materials. See indicators in appendix for further detail.

6.3 FY2012 Activities: Tracking, Policy Review, and More

Several commitments have been made with respect to procurement/waste reduction for FY2012 in the *Sustainability Strategy*. These include: (1) Revise administrative policies relative to procurement reflect better practices in sustainable procurement practices (2) Investigate opportunities to replicate Diversity Foods model for other areas of campus operations (3) Ensure that 60% of University computer purchases are EPEAT Gold Certified by end of FY2012 (4) Increase post-consumer content of office paper from 30% to 50% (5) Develop a vendor code of conduct outlining UWinnipeg expectations for environmental and social responsibility (6) Maintain commitment to purchase 100% EcoLogo certified cleaning products. Given the significant staffing changes that have taken place in Procurement Services, these plans are likely to be revised in August.

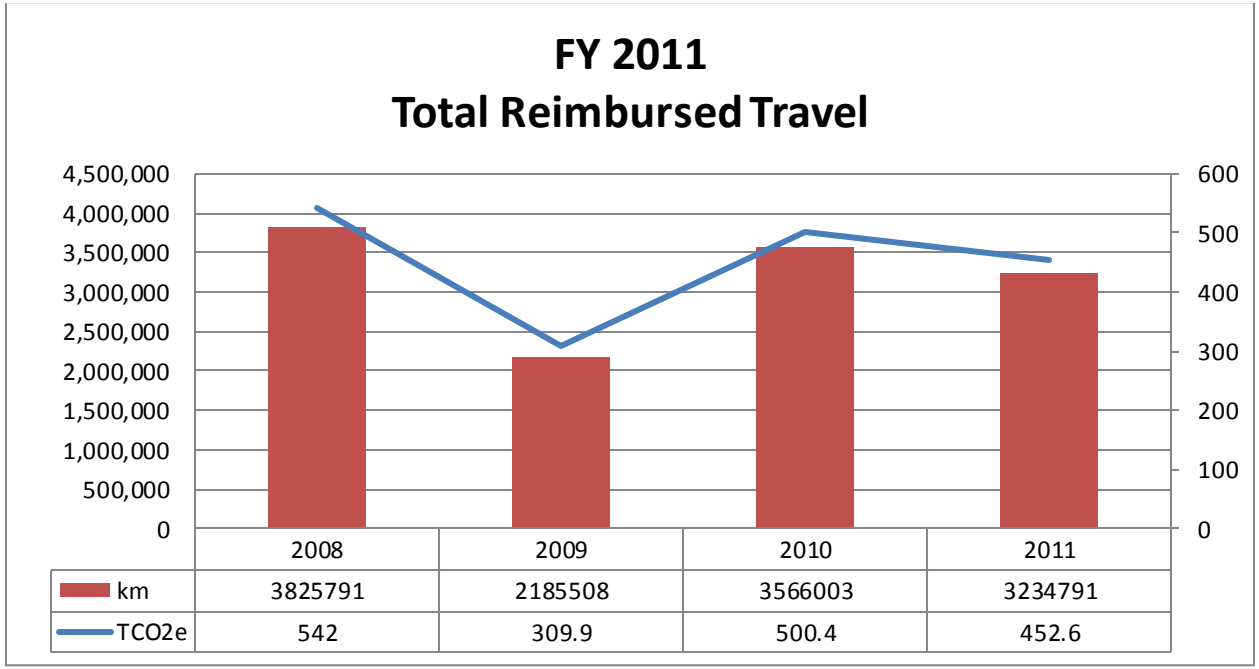
7 Transportation

7.1 Key Activities & Report of *UWinnipeg Sustainability Strategy* Commitments

Bike Lab: The highly anticipated UWSA Bike Lab celebrated its grand opening on October 21, 2011. This new Lab is a cycling education and advocacy facility that provides the space, tools and support to allow students, faculty, staff, and community members to keep their bicycles running smoothly all year long. This bicycle repair facility and cyclist friendly courtyard is a meeting place brought to life with a partnership with the University of Winnipeg Students' Association (UWSA) and The University of Winnipeg and designed by Peter Sampson Architectural Studio (PSA Studio). Programming in the Lab continues to thrive, and partnerships are also growing between the Lab, EcoKids on Campus and the Model School.

7.2 Performance

In the absence of specific initiatives aimed at reducing the impact of reimbursed business travel, travel statistics continue to vary from year to year based on natural variations in faculty and staff travel patterns.



Transportation Impacts	Units	FY2008	FY2009	FY2010	FY2011	% Change (FY2011 vs FY2010)
Reimbursed Air Travel	km	3,599,160	2,054,975	3,393,691	3,088,687	-8.99%
	# of trips/claims	462	340	486	508	4.53%
	TCO2e	489.13	279.27	461.20	419.75	-8.99%
Reimbursed Automobile Travel	km	220,590	128,790	158,314	128,782	-18.65%
	# of trips/claims	601	393	522	576	10.34%
	TCO2e	52.07	30.40	37.37	30.40	-18.65%
Reimbursed Intra-City Bus Travel	km	5,851	632	8,956	15,974	78.36%
	# of trips/claims	35	20	23	43	86.96%
	TCO2e	0.85	0.09	1.31	2.33	78.36%
Other Reimbursed Travel (esp. rail, km)	km	190	1,112	5,042	1,348	-73.26%
	# of trips/claims	30	24	10	24	140.00%
	TCO2e	0.00	0.11	0.52	0.14	-73.27%
Campus Fleet Vehicles	fuel L	7,717	7,835	9,248	6,665	-27.93%
	TCO2e	18.22	18.49	21.83	15.73	-27.93%
Totals	**km**	**3,825,791**	**2,185,508**	**3,566,003**	**3,234,791**	**-9.29%**
	# of trips/claims	**1,128**	**777**	**1,041**	**1,151**	**10.57%**
	TCO2e	**542.0**	**309.9**	**500.4**	**452.6**	**-9.55%**

7.3 FY2012 Activities: Tracking, Car Co-op & Bike Lab

Through FY2012, UWinnipeg will investigate the possibility of establishing itself as car co-op site and will develop a tracking system for commuting impacts. Bike Lab programming will also continue to evolve.

8 Academics

8.1 Key Activities & Report of *UWinnipeg Sustainability Strategy* Commitments

STARS Consultations: Throughout the academic year, the Manager of the CSO attended several Senate and Academic Council meetings to gather feedback about UWinnipeg participation in STARS (Sustainability Tracking, Assessment, and Rating System). The aim of these consultations was to ensure that there were no major objections among faculty members to participating in STARS, as 1/3 of the indicators in the rating system are related to curriculum and research. Through these consultations, it was determined that there were no strong objections on the part of Faculty Councils to UWinnipeg participation in STARS. Faculty emphasised that it will be very important that they be engaged in the process of establishing the criteria and definition of sustainability to apply as we work to identify sustainability content in courses and research. Preferably, UWinnipeg will not formally sign on to STARS until this criteria and definition have been fully developed. It will also be important to develop data gathering methods that minimize work for faculty members.

Grass Routes Solutions 2012: Through the support of a grant from the President's Innovation Fund, the Campus Sustainability office partnered with the Richardson College for the Environment to hold *Solutions 2012*. *Solutions* was held during the Grass Routes Sustainability Festival and provided a platform for faculty, students and community members involved in research or projects contributing to sustainability solutions in Manitoba to share their work. The event, held in Convocation Hall on March 16th from 12:30-4:30 featured 15 speakers. All presentations were video recorded and have been uploaded online. While not all attendees stayed for the whole afternoon, approximately 100 students, faculty, and community members joined the audience during the day. Overall the event was a success and the intent is to make it an annual part of Grass Routes.

Richardson College For the Environment: On the 3rd floor of our new Science Complex are the first occupants of the College: the Institute of Urban Studies and its library; the Department of Indigenous Studies; the CN Indigenous Resource Centre; the Master's in Development Practice program; the UWinnipeg Sustainability Initiative; the Cisco Innovation Centre and its first Director, Herbert Enns; and two Canada Research Chairs—Dawn Sutherland and Evelyn Peters. The aim of the College is that its members will work together, and with others within the university and beyond, to develop strategies to assess some of our most pressing environmental issues, especially those related to climate change, urban environments, water resources, indigenous development, and the North. Since these issues have many points of intersection, the inter-disciplinary approach of the College is well suited to the development of the conversations and policies that are needed to address our environmental problems, locally and globally.

Academic Research: UWinnipeg faculty throughout university departments continue to conduct significant sustainability-related research. A list of research projects can be found in Appendix B of this report.

Student Experiential Learning: The Campus Sustainability Office hosted three practicum students and two Canada World Youth volunteers in FY2011. Students also had opportunities to engage in sustainability-related experiential learning in organizations throughout Winnipeg in

practicum courses offered through the departments of English, Rhetoric, Writing & Communications, and Education. In April, students participating in these courses gave presentations at the Symposium on Experiential Learning in the Humanities.

Eco-U Summer Day Camp: The University of Winnipeg Eco-U Summer Day Camp program is one of the Community Learning initiatives offered at The University of Winnipeg. In the last five years, approximately 4,000 children have attended U Winnipeg's Eco-U Summer Camp. Children come from up to 30 inner-city schools, making it the largest day camp for children in inner-city Winnipeg. The children participate in engaging science and environmental activities with a focus on Indigenous science. The camp aims to address summer learning loss and th e barriers to participation commonly faced inner-city children and youth: participants attend Eco-U Kid's Camp free-of-charge, transportation is provided to get the participants to the camp site, and a nutrition program provides two healthy snacks and a lunch to every participant. Each year since its inception, the number of children that have registered and participated in the Eco-U Summer Camp has grown: there were 385 participants in 2007; 630 participants in 2008; 781 participants in 2009; and 1120 participants in 2010, and 1198 in 2011.

Eco-Kids on Campus: The Eco-Kids on Campus program began in the 2007-2008 school year. Students from Strathcona Elementary and Wellington Elementary Schools attend the University of Winnipeg one afternoon per week for a 10 week period. The Innovative Learning Centre runs this program three sessions per year for a total of over 30 weeks per year. While students are on campus, professors and teachers from UWinnipeg's Faculty of Science, The Collegiate, and guest speakers deliver the grade six science curriculum. Students have the opportunity to participate in a wide range of hands-on scientific and environmental experiments and activities. The Eco-Kids on Campus program is part of the Shine-On Initiative (a partnership between the Manitoba government, University of Winnipeg and Winnipeg School Division).

8.2 Performance

UWinnipeg does not currently track sustainability indicators relative to its academic life; however, a list of sustainability related research projects is included here in Appendix B. Registration with STARS will provide an opportunity to develop more robust tracking of sustainability content in teaching, learning, and research.

8.3 FY2012 Activities: Tracking & Academic Engagement in GrassRoutes

Through 2012, the University will continue to support sustainability teaching, learning and research. The CSO will endeavour to establish means of tracking STARS academic indicators, will organize *Solutions* again, and aims to engage academic faculties more broadly during Grass Routes.

9 Administrative Systems

9.1 Key Activities & Report of *UWinnipeg Sustainability Strategy* Commitments

Green Office Project: Through the support of an Envirogrant from the Winnipeg Foundation, the CSO hired a summer student to develop a user friendly 'Greener Office' program at UWinnipeg to reduce the environmental impact of individual departments. Through FY2011, initial research for the project was undertaken and several faculty and staff members have participated in focus group meetings to assist in the development of the project. The CSO aims to pilot the program with 2-5 offices during the 2012/2013 academic year.

9.2 Performance

There are no specific indicators that reflect performance relative to the University's administrative systems. Rather, progress in this area will be reflected in decreased energy consumption, improved waste diversion, and more sustainable procurement practices throughout the University.

9.3 FY2012 Activities: Green Office Project & Admin Systems Needs Assessment

The Campus Sustainability Office aims to pilot its Green Office program in 2-5 departments through the 2012/2013 academic year. It will also begin developing a roadmap for sustainability-related administrative system changes by conducting needs assessments for admin systems and for professional development opportunities.

10 Key Challenges

Procurement: The changes in the University's Procurement Services department present significant challenges as UWinnipeg seeks to improve its sustainable procurement practices. Similarly, current data tracking and monitoring goals are difficult to achieve within the context of the University's current finance software. The opportunity exists for UWinnipeg to establish itself as an example of best practice in Canada with respect to sustainable procurement; however, this will require that current efforts be augmented. Pre-requisites to this process include the revision of administrative-level procurement policies to reflect sustainability goals and a concerted effort to improve sustainability-related procurement tracking and monitoring.

Renewable Energy & Fuel Switching: The University of Winnipeg benefits from being located in a province with some of the lowest energy costs in North America. While there are clearly economic advantages to this situation, it also presents particular challenges as we seek out alternatives to the resource that accounts for 80% of our GHG emissions - natural gas. To date, the University has been pursuing a combination of energy efficiency measures and strategies that emphasize switching from natural gas to hydro-electricity use to reduce its emissions. Once major energy retrofits are complete, though, there will be fewer efficiency measures to pursue. There are also several reasons for which the exclusive reliance on switching from natural gas to hydro-electricity is not advisable. It remains difficult to identify options for economically feasible renewable energy projects that offer significant impact to the University's energy profile.

Funding for Sustainability: Accessing funds aimed at measures that will reduce resource consumption on campus remains a challenge. Current cultures of giving tend to prioritize the execution of capital projects. Dedicated funds to support energy efficiency retrofits, to top up capital requirements to enable alternative energy projects in new and old buildings, or to support ongoing programming relative to sustainability related outreach and social marketing would serve to significantly advance UWinnipeg's sustainability performance. While the University can certainly be proud of its successes in securing the funds needed to complete LEED certified buildings and in securing funds to undertake the first phase of its planned energy retrofit project, there is much progress to be made in the area of funding sustainability change management, project implementation, and renewable energy projects.

Tracking Issues: Several areas of sustainability tracking and monitoring suffer from weak data collection systems and capabilities. Transportation and procurement tracking present particular challenges as they both require that very large amounts of data be distilled and expressed in metrics that current finance software and parking policies do not easily accommodate. Strong transportation tracking would also require the University to be able to gather statistically relevant data about campus commuting habits – a very challenging task. The CSO is seeking to address these challenges through a combination of tracking methodology development and proposed revisions to indicators that are at once rigorous but also more feasible to track.

Streamlining Reporting Systems: UWinnipeg developed its own internal indicators and sustainability reporting structure in 2005 and has used this framework to prepare its annual sustainability performance reports since 2006. Since then, the campus sustainability movement has gained

traction in North America and greenhouse gas emission reporting bodies have become more established. UWinnipeg is interested in participating in larger reporting systems that allow us to measure our performance against similar institutions. We have already registered with The Climate Registry and are considering registration with STARS, a sustainability assessment and rating system administered by the Association for the Advancement of Sustainability in Higher Education. These opportunities for greater transparency also present challenges, as these new reporting systems require that data be provided and presented in forms somewhat different from the forms currently tracked and presented through the University's internal reporting systems. Establishing means of streamlining these various reporting commitments will be a key focus of the work of the CSO over the next two years.

Waste Diversion Costs: Cost pressures related to the University's recycling and composting programs continue to increase. As collection rates continue to rise, ongoing supply expenses for equipment such as bins and bags are increasing significantly. Costs for compost and recycling collection also tend to increase as quantities of material increase. These increases in cost are not met with a corresponding reduction in solid waste hauling fees, nor are they supported by any increase in external funding support. The annual grant received by MMSM (Multi-Materials Stewardship Manitoba) remains the same as it has been for several years. The Canadian Beverage Container Recycling Association, for its part, has generously provided support for more bins on campus; however, all costs associated with increased labour to maintain these bins and collection fees are being absorbed by the University. The University's composting program receives no external funding, as the transition of waste diversion funding from Green Manitoba to Extended Producer Responsibility (EPR) Boards such as MMSM has left a funding gap for composting programs – no EPR board has been established to support composting. This challenge is surely not unique to the University. It reflects a larger inconsistency with the waste hauling and diversion industries and funding programs in the province.

Experiential Learning: Significant potential exists for the creation of valuable campus sustainability-based experiential learning opportunities at UWinnipeg. Several members of the University's faculty are actively engaged in experiential learning; several potential campus-based projects exist that promise to re-vitalize campus life, enhance the University's sustainability performance, and offer rich learning experience for UWinnipeg students. The challenge ahead is to establish the proper administrative supports and mechanisms to support the growth of this significant potential.

11 Conclusion

While there is still much to be done to fully implement UWinnipeg's sustainability policies, FY2011 can be remembered as a year in which significant progress was made in campus sustainability.

Substantial progress was made in reducing the energy intensity and greenhouse gas emissions of University operations; efforts are underway to better integrate sustainability into the overall operation and governance of our institution. The impacts of this continued integration will be noted most strongly with respect to the growth in physical scale of University facilities and related growth in campus population. Initiatives such as the development of Green Building Guidelines for capital projects aim to develop a whole campus-approach to resource consumption management in order to balance demands for more space with the real ecological impacts of capital development. Integrating these considerations into decision making and project management processes remains the most important task ahead for the University and will require active participation of individuals throughout our campus community. Equally important will be the integration of sustainability considerations in all campus advancement strategies. How are UWinnipeg's sustainability commitments being represented to potential donors? Can special efforts be made to secure the capital necessary to strengthen the sustainability performance of new development projects and to further the sustainability performance of existing buildings and operations? How can funding for sustainability become an attractive option for potential donors and partners?

At the same time, as UWinnipeg continues to develop its sustainability program, an increasing number of challenges are emerging that have triggers beyond the University's direct control. Energy economics in the province, the structure of the waste industry, and existing sources of private and government support for sustainability-related efforts all have a significant impact on our ability to achieve our sustainability goals.

This reality points to a larger opportunity for the University – as a public institution engaged in significant teaching and research, and with an increasingly multi-disciplinary network of scholars working in sustainability-related fields, what role might we play in facilitating dialogue within and among academics, business and government to advance sustainability throughout the province? What structures might be established through the Richardson College for the Environment or elsewhere on campus in support of such a role for our University? How might our students be included in such structures so that their abilities as critical thinkers, engaged scholars, advocates, and activists is cultivated and strengthened?

These questions pertaining to the University's academic engagement with sustainability management, policy, science, theory, and philosophy underline the immense potential inherent in creating an arena for scholarly dialogue about sustainability that is both grounded in UWinnipeg's liberal arts tradition and accessible to a broader audience. Ideally, this broader audience would include those individuals and institutions which create the policies, programs, and practices that enable or restrict the sustainability performance not only of the University, but of institutions throughout our province and our country.

Developing arenas and support for these kinds of dialogues is especially important given recent changes to federal environmental legislation. The federal government's 'Responsible Resource Development' plan and Budget Implementation Bill include significant changes to the Species at Risk Act, to the Fisheries Act and the Navigable Waters Act. The Kyoto Protocol Implementation Act has been repealed, the National Round Table on Environment and the Economy has been eliminated, and several changes to federal support for academic research promise to shift the focus of research programs throughout the country. In addition to this, the Province of Manitoba released its draft *Tomorrow Now, Manitoba's Green Plan* and invited comments on it through to October 31, 2012.

With both federal and provincial efforts to shift the sustainability landscape, the time is ripe to strengthen UWinnipeg's capacity to support evidence-based policy decisions and foster healthy networks and collaboration between Universities, business, and the public sector. Such efforts could ultimately catalyze improvements to UWinnipeg's quantitative sustainability performance while also making notable contributions to those being made elsewhere in the province and the country.

12 Appendix A – Performance Indicators

GHG & Air Indicators	Unit	Target	FY2007	FY2008	FY2009	FY2010	FY 2011
GHG emissions from electricity	T of CO2e	Diminishing annually to zero.	203.67	167.09	80.87	33.73	57.94
GHG emissions from Natural Gas	T of CO2e	Diminishing annually to zero.	3223.88	3187.78	3462.42	3364.91	2934.21
GHG emissions from Fleet Vehicles	T of CO2e	Diminishing annually to zero.	14.42	18.22	18.49	21.83	15.73
GHG emissions from Business Travel	T of CO2e	Diminishing annually to zero.	435.93	542.05	309.88	500.40	452.62

GHG emissions from Waste	T of CO2e	Diminishing annually to zero.	139.29	218.54	414.68	403.61	321.94
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	T of CO2e	Diminishing annually to zero.	4017	4134	4286	4324	3782
Total square meters of indoor space contaminated with asbestos which has potential to negatively impact human health	m^2	Diminishing annually to zero.	0	0	See report	See report	See report
Total square meters of indoor space contaminated with mold which has potential to negatively impact human health	m^2	Diminishing annually to zero.	0	0	0	0	0
Number of air pollution incident reports or complaints received per fiscal year and documented evidence of the action taken to address them	number/ text	Zero air pollution incident reports or complaints per FY and/or document	Complaints – 15	Complaints – 9	Complaints - 5	NA	Complaints - 5
			Complaints requiring testing – 7	Complaints requiring testing – 7	Complaints requiring testing - 4	NA	NA

		ation of steps taken to address them.	Complaints still ongoing – 4	Complaints still ongoing - 3	Complaints still ongoing - 1	NA	NA
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	g/m^2	0 g/1000 m2	45.61	45.19	36.66	37.56	14.87
Total amount of pesticides in grams used indoors	g	0 g	4185	4200	3709	3912	1805
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	0	0	0
Total percentage of indoor space in square meters designated smoke-free	%	100	100	100	100	100	100

Total percentage of indoor space in square meters designated scent-free	%	100	0	0	0	0	0
Minutes or reports documenting decisions taken to rehabilitate economic, environmental or human health impacts arising from air pollution if such have occurred	text	Minutes or reports of full rehabilitation if damaging impacts have been incurred.	No occurrences.	No occurrences.	No occurrences	No occurrences	No occurrences
Number and short description of research projects or innovations implemented with the intent of improving air quality in University facilities or programs offered on or off-campus	number; text on file/in report	Non-zero positive number with short description of each.	Included in CSO Annual Report	Included in CSO Annual Report	Included in CSO Annual Report	Included in CSO Annual Report	Included in CSO Annual Report

Energy Indicators	**Unit**	**Target**	**FY2007**	**FY2008**	**FY2009**	**FY2010**	**FY 2011**
Total energy use	KwH	Annual reductions to theoretical minimum.	32,253,322	30,507,144	34,158,051	35,786,939	38,766,633
Total energy cost	$		$1,428,889.16	$1,388,785.52	$1,469,416.42	$1,495,579.55	$1,519,194.79
Total energy intensity of operations of facilities	KwH/m2		352	328	338	344	319

Total energy intensity of operations	KwH/m2/CDD		0.060	0.055	0.060	0.060	0.064
Total energy intensity of operations	KwH/FCE/CDD		0.179	0.169	0.180	0.183	0.223
Total annual electrical consumption in	KwH		14,118,810	12,501,378	14,702,975	16,864,380	22,284,140
Total annual electrical cost	$		$770,608.66	$718,719.33	$839,021.19	$1,008,052.14	$1,152,969.26
Energy intensity of electricity for facilities under management	KwH/m2	Derived	154	134	145	162	184
Energy intensity of electricity of facilities under management	KwH/m2/CDD	Derived	0.026	0.022	0.0260	0.0280	0.0370
Energy intensity of electricity	KwH/ FCE /CDD	Derived	0.078	0.069	0.0760	0.0861	0.1285
Total annual natural gas (KwH equivalent)	KwH equivalent	Annual reductions to theoretical minimum.	18,107,465	17,872,431	19,377,292	18,831,043	16,416,085
Total annual natural gas cost	$		$651,473.71	$662,233.43	$622,004.03	$487,527.41	$358,608.76
Energy intensity of natural gas of facilities under management	KwH/m2	Derived	197	192	192	181	135
Energy intensity of operations for natural gas of facilities under management	KwH/m2 / CDD	Derived	0.033	0.032	0.035	0.0313	0.0273
Energy intensity for natural gas of operations	KwH/FCE/CDD	Derived	0.100	0.099	0.102	0.0962	0.0946

Total annual fleet vehicle fuel consumption	KwH equivalent	Replacement of fleet vehicles with zero emission models operated on renewable energy sources.	27,047	75,015	76,159	89,891	64,784
Total annual fleet vehicle fuel consumption cost	$		$6,806.79	$7,832.76	$8,391.20	$8214.67	$7,616.77
Total estimated annual energy consumption incurred for intra-city transportation of students, staff, administration and faculty	KwH	Annual reductions to theoretical minimum.	no data	no data	no data	no data	no data
Total annual energy consumption incurred for extra-regional transportation of students, staff, faculty and administration which was reimbursed travel by the university	KwH	Annual reductions to theoretical minimum.	no data	no data	no data	no data	no data
Percent of annual energy obtained from renewable energy sources (hydro-electric, wind, solar thermal, solar PV, biomass, tidal, geothermal)	%	Increasing annually to 100%.	43.77%	40.98%	43.04%	47.12%	57.48%
Total annual stationary fuel consumption	KwH equivalent	Annual reductions to theoretical	no data	58320	1625	1625	1625

		minimum.					
Total annual stationary fuel consumption cost			no data	no data	no data	no data	no data

Water Indicators	Unit	Target	FY2007	FY2008	FY2009	FY2010	FY 2011
Percentage of all water fixtures operating on campus which are water conserving models	%	Increasing annually to 100%.		5% (est.)	10%-15% (est.)	45%	75%
Evidence of conformance with neutralization of toxic, chemically active, or biohazard substances before discharge to waste water stream	text	Periodic verification reports.		On file in Chem / Bio Depts.	On file	On File	On File
Annual Total Cost of Water	$			$152,511.44	$176,042.70	$198,374.53	$198,411.81
Total annual volume of potable water in liters consumed by the University	L	Report.		80,113,761	74,714,597	64,515,600	69,914,000
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%.		0%	0%	0%	0%
Total storm water recovered and treated / recycled (in liters)	%	Increasing annually to 100%.		0%	0%	0%	0%

Summary of educational, professional development, and general awareness activities designed to encourage research and increase participation in water conservation activities, practices, and product choices	text	Anecdotal reports.		No data	No data	On File in CSO - Communications re: Campus Sustainability Recognition Award granted to UW plumber, Lake Friendly initiative	On File in CSO - Green Campus Users' Manual; Green Office program development.
Participation in educational, professional development, and general awareness activities that encourage research and increase participation in water conservation activities, practices and product choices	text	Increasing year over year to practical maximum.		No data	No data	No data	No data
Annual report of water use management performance	text	Tabled annually.		Done	Done	Done	Done
Post Water Use Management Policy and performance reports to website	text	Policy and reports posted.		Done	Done	Done	Done

Waste Indicators	**Unit**	**Target**	**FY2007**	**FY2008**	**FY2009**	**FY2010**	**FY2011**
Waste to landfill	T	Decreasing annually to theoretical minimum.	77.8	125.1	221.5	no data	176.56
Annual total weight of materials diverted from		Increasing	94.4	104.4	121.9		190.48

landfill and recycled (broken down below)	T	annually to theoretical maximum.				155.81	
Organic Materials	T		1.5	11.1	13.5	23.2	44.42
Toner Cartridges	T		0.1	0.04	0.12	0.311	0.02
Batteries	T		0.1	0.04	0.04	0.096	0.10
Cardboard & Boxboard	T		35.1	33.1	45.6	59.1	49.05
Paper (2010 =confidential paper only)	T		51.4	49.4	43.2	15.2	96.90
PET drink containers/comingled	T		6.2	10.8	6.9	57.9	
Percent change over previous year's waste production	%	derived	-26.32%	60.50%	49.63%	no data	no data
Total Waste Generated (trash, recycling, compost, Hazardous Waste & E-Waste)	T	Decreasing annually to theoretical minimum.	172.2	229.5	343.4	no data	367.04
Percentage change over previous year's waste to landfill	%		-48.34%	60.80%	77.06%	no data	no data
Percentage of the total weight (in kilograms) of waste destined for landfill or incineration comprised of recyclables (including organic wastes)	%	derived	15.80%	14.30%	14% recycling; 32% compost	25% recycling; 41% compost	25% recycling; 41% compost (estimate based on FY2010)
Annual total weight (in kilograms) of solid and	T of solids	Decreasing	0.65 T Solids	0.24T Solids	0.3T Solids	0.240	0.705 T Solids

liquid hazardous waste produced by or discharged from University facilities and operations	L of liquids	annually to theoretical minimum.	1,000L Liquids	1,241L Liquids	1363 L liquids	650	3313 L liquids
Change in hazardous wastes produced by the University over previous year	%	derived	Not calculable.	- 65.6% for solids	+24.5% Solids	-20.0% Solids	+193.4% Solids
	%			+ 24.1% for liquids	+9.9% Liquids	-52.3% Liquids	+409.7% Liquids (*note:science departments moved to the new science building this year, and several old laboratories were cleared of old hazardous substances)
Annual total weight (in kilograms) of solid and liquid hazardous wastes recycled (either on- or off-campus)	Kg	Increasing annually to theoretical maximum.	0T On campus.	0T On campus.	0T On campus	0T on campus	0T on campus
	Kg		Unknown off campus.	Unknown off campus.	Unknown off campus	Unknown off campus	Unknown off campus
Percentage of total annual weight (in kilograms) of solid and liquid hazardous waste recycled	%	derived	No data	No data	No data	no data	no data
Waste to landfill disposal cost	$		$33,323.93	$34,613.87	$49,273.49	$91,687.72	$72,725.81
Recycling collection fees	$		$5,100.00	$5,000.00	$5,250.00	$5,245.99	$7,576.55
Confidential paper shredding service	$		$7,176.72	$7,445.81	$9,280.60	$11,191.13	$7,715.04

Hazardous waste removal fees	$		$15,000.00	$7,743.26	$4,775.19	$5,627.49	$28,388.00
Compost collection fees	$		$0.00	$0.00	$1,889.84	$4,842.06	$6,190.28
Total waste management costs	$	derived	$60,600.65	$54,802.94	$70,469.12	$118,594.39	$122,590.64
Summary of educational, professional development, and general awareness activities designed to encourage research and increase participation in waste reduction activities, practices, and product choices	text	Anecdotal reports.	On file in CSO.	On file in CSO.	On file in CSO	On file in CSO	On file in CSO
Participation in educational, professional development, and general awareness activities that encourage research and increase participation in waste reeducation activities, practices and product choices	text	Increasing year over year to practical maximum.	No data	No data	No data	On file in CSO (Takeout Without)	On file in CSO (promotional slides, videos, guest lectures)

Transportation Indicators	**Unit**	**Target**	**FY2007**	**FY2008**	**FY2009**	**FY2010**	**FY 2011**
Total annual fossil fuel consumption for University fleet vehicles.	L	Reducing annually to theoretical minimum.	6,111	7,717	7,835	9,248	6,665

Total estimated annual fossil fuel consumption incurred from reimbursed air travel by University faculty, students or support staff	km	Reducing annually to theoretical minimum.	2,988,800	3,599,160	2,054,975	3,393,691	3,088,687
	L		104,608	125,971	71,924	118,785	108,109
Total estimated annual fossil fuel consumption incurred from reimbursed automobile travel by University faculty, students or support staff	L	Reducing annually to theoretical minimum.	12,589	22,059	12,879	15,831	12,878
Total estimated annual fossil fuel consumption incurred from reimbursed intra-city bus travel by University faculty, students or support staff	km	Reducing annually to theoretical minimum.	No data	5,851 175	631.54	8,956	15,974
	L				19	270	481
Total estimated annual fossil fuel consumption incurred from reimbursed inter-city bus travel by University faculty, students or support staff	L	Reducing annually to theoretical minimum.	22.1	0	0	0	0
Total estimated annual fossil fuel consumption incurred from reimbursed rail travel by University faculty, students or support staff	km	Reducing annually to theoretical minimum.	0	190	1111.5	5,042	1,348
Total estimated annual fossil fuel consumption incurred from intra-city bus travel from residence to campus and back by students, faculty and support staff		Reducing annually to theoretical minimum.	No data	No data	No data	No data	No data

Total estimated annual fossil fuel consumption incurred automobile travel from residence to campus and back by students, faculty and support staff		Reducing annually to theoretical minimum.	No data	No data	No data	No data	No data
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		Reducing annually to theoretical minimum.	No data	No data	No data	No data	No data
Percentage of total area of campus property devoted to parking lots, streets and lanes		Constant or reducing overtime.	No data	No data	No data	No data	No data
Total annual emission of GHGs incurred from use of fleet vehicles	T CO_2e	derived	14.4	18.2	18.5	21.8	15.7
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	No data	No data	No data
Total annual emission of GHGs incurred from reimbursed travel by all modes by students, faculty and support staff	T CO_2e	derived	435.9	542.1	309.88	500.4	452.6
Percentage of Transit buses with special access features to accommodate the needs of seniors, children, and the disabled		100%	No data	No data	No data	No data	No data

Percentage of transportation-related facilities on campus with access features for seniors, children and disabled		100%	No data	100%	100%	100%	100%
Cost of Transit fares as a percentage of annual income for students, faculty, and staff		derived	No data	No data	No data	No data	No data
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	No data	No data	No data
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.	Campus Commuter Chalenge - Unknown	Campus Commuter Challenge - Unknown	Campus Commuter Challenge - Unknown
					Workplace Commuter Challenge - 57, or 7.5%	Workplace Commuter Challenge - 108, or 13.3%	Workplace Commuter Challenge - 114 or 14.6%
Pre-training-post-training change scores measuring knowledge about and use of sustainable transportation modalities and services by students, faculty and		Positive change values.	No data	No data	No data	No data	No data

support staff							
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.	On file in CSO	On file in CSO	On file in CSO
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	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study - CSO Office
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	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office
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	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study - CSO Office
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	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study – CSO Office	2005 Wpg Transit Study - CSO Office
Percentage of students, faculty and support staff who regularly drive single occupant vehicles to campus		Decreasing annually to practical minimum.	No data	No data	No data	No data	No data

Participation rates for students, faculty and support staff in Resource Conservation Manitoba's Commuter Challenge		Increasing annually to practical maximum.	48	67	57	108	114
Avoided trips represented by distance-education course delivery, teleconferences, telecourse enrollments, etc.		Increasing annually to practical maximum.	No data	No data	No data	1953 registrants in distance/tele courses, 696 of whom attended class in person and 1257 of whom attended class remotely	2450 registrants in distance/tele courses, 554 of whom attended class in person and 1896 of whom attended class remotely
Evidence that such measurement and monitoring system is in place		Documented system.	Not in place.	Not in place.	Not in place	Not it place	Not it place
Annual report of transportation activities		Tabled annually.	Done	Done	Done	Done	Done
Post Sustainable Transportation Policy and performance reports to website		Policy and reports posted.	Done	Done	Done	Done	Done

Land Use & Facilities Indicators	**Unit**	**Target**	**FY2006**	**FY2007**	**FY2008**	**FY2009**	**FY 2010**
Annual amount of chemical herbicide applied to University landscapes in liters	L	0 kgs. or 0 liters.	0 L.	0 L.	14 L (Par 3; Roundup)	6.5 L Par 3; 2.5 L Roundup	4L Par 3; 2 L Roundup
Annual amount of artificial pesticide used on University landscapes in liters	Kg	0 kgs. or 0 liters.	3.4 kgs.	3.4 kgs. (est.)	0	0	Konk 400 -554g (Insects); Konk 418 - 500g (Flying Insects); Final Blox - 180g (Mice); Contrac Blox - 420g (Mice);

							Endbac II - 150g (disinfectant); Ficam D - 1g (Wasps)
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.)	Kg	Annual reductions to practical minimum.	3,080 kg (Mtn. Organic Ice Melt)	3,600 kg (est.) (Mtn. Organic Ice Melt)	3.600 (est.) (Mtn. Organic Ice Melt)	17,500 Kg Summit safety salt; 175 lb urea; 90 lb potassium; 8 oz ferrous sulphate	11,340 Kg. IceMelt; 74.8 Kg phosphate free fertilizer (20-0-10 (urea (nitrogen), potassium chloride (potassium), iron sulfate (iron,sulfur))
Percentage of landscaping using xeriscaping techniques and materials	%	Increasing annually to 100%.	70%	70%	100%	100%	100%
Annual quantity in liters of fossil fuels consumed by grounds maintenance machinery and vehicles (mowers, snow blowers, sidewalk plows, etc.)	L	Decreasing year over year to practical minimum.	915 L	928 L	225 L	332 L regular fuel, 791 L diesel	No data
Percentage of yard wastes composted	%	Increasing annually to 100%.	100%	100%	100%	100%	90% (challenges with overflowing compost bins)
Percentage of grounds watering supplied from grey water / storm water recycling compared to use of city treated water	%	Increasing annually to 100%.	0%	0%	0%	0%	0%

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%	100%	100%	100%
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%	90%	90% (some products used in kitchens have no Environmental Choice alternatives)	Unknown: UWinnipeg remains committed to using cleaning products that are 3rd party verified to be ecologically responsible. In gathering documentation for this report, the University learned that its cleaning provider switched to non-certified products at some time during the year. The situation is being investigated and will be rectified as quickly as possible.
Percentage of cleaning products defined as graffiti remover, drain cleaner and floor stripper for which the following information is disclosed to Property	%	100%	100%	100%	100%	100%	

and Plant: -Hazardous ingredients present - Biodegradability of total product - Percent VOC in product - pH - Fragrance - Type of dye - Oral toxicity of product - Presence of optical brightener - Third party certification (if available)							See above.
Percentage of cleaning products used annually that contain: - Any known or suspected carcinogens/teratogens/mutagens as per IARC, ACGIH	%	0%	0%	0%	0%	0%	See above

- Endocrine disrupters - Phosphates - Substances listed on CEPA toxic substance lists							
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%	0%	0%	See above
If landscape design and construction has occurred since the last reporting period, documented evidence that xeriscaping / permaculture and organic maintenance regimes have been employed	text	Document as required.	Report on file in CSO.	No projects in FY2008.	No projects in FY2009	No projects in FY2010	Landscaping work around RCFE was completed. Plant material was selected to work with the existing soil/water/solar conditions such that no irrigation would be required other than nominally through the blishment phase. Locally sourced plant material, and primarily material native to the local area has been planted including local grasses, shrubs and trees. There has been no use of

							chemicals or fertilizers.
Documented evidence from RFPs that LEED standards or better have been specified for bidders	%	Document as required.	100% (Provincial Policy)	100% (Provincial Policy.)	100% (Provincial Policy)	100% (Provincial Policy)	100% (Provincial Policy)
Measurement and record systems established and maintained	text	Record system in place.	Done	Done	Done	Done	Done
Annual report of land use and property management performance	text	Tabled annually.	CSO annual report	CSO annual report	CSO annual report	CSO annual report	CSO annual report
Post Land Use and Property Management Policy and performance reports to website	text	Policy and reports posted.	Done	Done	Done	Done	Done

Procurement Indicators	**Unit**	**Target**	**FY2007**	**FY2008**	**FY2009**	**FY2010**	**FY 2011**
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	text	All procurement decisions include a needs analysis and demand reduction plan.			No data - Procurement decisions are normally made by individual departments. Gently-used alternatives are regularly offered as an option to reduce demand, but most demand reduction is driven by budgetary	No data - Procurement decisions are normally made by individual departments. Gently-used alternatives are regularly offered as an option to reduce demand, but most demand reduction is driven by budgetary	No data - Procurement decisions are normally made by individual departments. Gently-used alternatives are regularly offered as an option to reduce demand, but most demand reduction is driven by budgetary

					considerations. Needs assessments are performed as required, on an office-by-office basis.	considerations. Needs assessments are performed as required, on an office-by-office basis.	considerations. Needs assessments are performed as required, on an office-by-office basis.
Percentage of total annual dollar value of equipment purchases for which life-cycle cost analysis was applied	text	Increasing annually to 100%.			No data - Applying formal life cycle costs analysis would require more procedures than the purchasing department currently has time, resources, and training to implement and develop. Purchasing agents do take into consideration long-term costs, both environmental and financial, when making purchasing decisions – buying things that have specific certifications, production location and shipping distances, extensive warranties so that items can b repaired and	No data - Applying formal life cycle costs analysis would require more procedures than the purchasing department currently has time, resources, and training to implement and develop. Purchasing agents do take into consideration long-term costs, both environmental and financial, when making purchasing decisions – buying things that have specific certifications, production location and shipping distances, extensive warranties so that items can b repaired and	No data - Applying formal life cycle costs analysis would require more procedures than the purchasing department currently has time, resources, and training to implement and develop. Purchasing agents do take into consideration long-term costs, both environmental and financial, when making purchasing decisions – buying things that have specific certifications, production location and shipping distances, extensive warranties so that items can be repaired and

					reused rather than rebought.	reused rather than rebought.	reused rather than rebought.
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	text	Decreasing annually to zero.			No data - All purchase orders are kept on file for three years along with all associated documentation, including data sheets and email/snail mail conversations. The end user is informed of any issues relating to toxicity or possible health or environmental risks due to the purchase and use of the product.	No data - All purchase orders are kept on file for three years along with all associated documentation, including data sheets and email/snail mail conversations. The end user is informed of any issues relating to toxicity or possible health or environmental risks due to the purchase and use of the product.	No data - All purchase orders are kept on file for three years along with all associated documentation, including data sheets and email/snail mail conversations. The end user is informed of any issues relating to toxicity or possible health or environmental risks due to the purchase and use of the product.
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	text	All toxic product procurement is accompanied by alternative search / review			The University does not buy products that use toxic compounds unless there are no reasonably priced alternatives available. The definition of	The University does not buy products that use toxic compounds unless there are no reasonably priced alternatives available. The definition of	The University does not buy products that use toxic compounds unless there are no reasonably priced alternatives available. The definition of

		reports.			reasonably priced is somewhat fluid, but generally hovers around 150% of the less desireable product. In the case of specific equipment required by researchers, there are instances in which no alternatives are available.	reasonably priced is somewhat fluid, but generally hovers around 150% of the less desireable product. In the case of specific equipment required by researchers, there are instances in which no alternatives are available.	reasonably priced is somewhat fluid, but generally hovers around 150% of the less desireable product. In the case of specific equipment required by researchers, there are instances in which no alternatives are available.
Percentage of total annual dollar value of all goods, materials and services procured from local and neighbourhood suppliers	text	Increasing annually to theoretical maximum.			No data - The University does not track how many purchases are locally sourced – again, this sort of tracking would require more resources than currently available. Every effort is made to buy within 100 miles of the City of Winnipeg, then nationally, then internationally. Efforts are also made not to buy products produced overseas.	No data - The University does not track how many purchases are locally sourced – again, this sort of tracking would require more resources than currently available. Every effort is made to buy within 100 miles of the City of Winnipeg, then nationally, then internationally. Efforts are also made not to buy products produced overseas.	No data - The University does not track how many purchases are locally sourced – again, this sort of tracking would require more resources than currently available. Every effort is made to buy within 100 miles of the City of Winnipeg, then nationally, then internationally. Efforts are also made not to buy products produced overseas.

Percentage of goods, services and materials procured annually that are approved / certified as environmentally friendly / sustainable	text	Year over year increase in %age to practical maximum.			No data - Purchasing agents ensure that they pick the "greenest" products they can and attempt to steer end-users towards the most sustainable choice possible.	No data - Purchasing agents ensure that they pick the "greenest" products they can and attempt to steer end-users towards the most sustainable choice possible.	No data - Purchasing agents ensure that they pick the "greenest" products they can and attempt to steer end-users towards the most sustainable choice possible.
Percentage of goods, services and materials procured annually that are sourced from certified / approved environmentally friendly suppliers	text	Year over year increase in %age to practical maximum.			No data - Almost all furniture purchases are made from certified environmentally friendly suppliers. All paper is 30% post-consumer recycled and is FSC certified. All services have environmental protection clauses in them that state the work has to be done in the most "green" manner possible. The purchase of recycled or used equipment is encouraged.	No data - Almost all furniture purchases are made from certified environmentally friendly suppliers. All paper is 30% post-consumer recycled and is FSC certified. All services have environmental protection clauses in them that state the work has to be done in the most "green" manner possible. The purchase of recycled or used equipment is encouraged.	No data - Almost all furniture purchases are made from certified environmentally friendly suppliers. All paper is 30% post-consumer recycled and is FSC certified. All services have environmental protection clauses in them that state the work has to be done in the most "green" manner possible. The purchase of recycled or used equipment is encouraged.

Total annual weight (in kilograms) of metals and / or metal products procured by the University	text	Decreasing annually to theoretical minimum.			No data	No data	No data
Total annual weight (in kilograms) of metals and / or metal products procured by the University from recycled sources	text	Increasing annually to 100% of consumption.			No data	No data	No data
Total annual weight (in kilograms) of wood and paper products procured by the University	text	Decreasing annually to theoretical minimum.			No data	No data	No data
Total annual weight (in kilograms) of wood and paper products procured by the University from recycled sources	text	Increasing annually to 100% of consumption.			No data	No data	No data
Percentage of total number of goods, materials and products that contain recycled material content	text	Positive year over year increase as products become available, approaching 100%.			No data - see above	No data - see above	No data - see above
Total annual embodied energy of the products, materials, goods, and services procured by the University	text	Year over year decrease.			No data	No data	No data

Summary of educational, professional development, and general awareness activities designed to encourage research and increase participation in green procurement activities, practices, and product choices	text	Anecdotal reports & number (increase to some opti-mum?)			No data	No data	Purchasing Services participates in the Manitoba public sector "Going Green" Working Group. Resources limit the amount of workshops and seminars attended, but Purchasing Services makes all efforts to attend any possible sessions.
Percentage of RFPs, tenders and supplier contracts that included the University's green procurement policy	%	100%			100%	100%	100%
Evidence that mass / volume-based measurements are being made of all materials and products procured by the University	text	Mass measurement system in place.			Under development.	Under development.	Under development.
Annual report of green procurement performance	text	Tabled annually.			Done	Done	Done
Post Green Procurement Policy and performance reports to website	text	Policy and reports posted.			Done	Done	Done

13 Appendix B – Sustainability Research

Biology

German Avila Sakar - Restoration of quarry lands through compost amendment of soil.

Scott Forbes - Development of Sustainable Inland Fisheries; Developing Organic Fertilizers from Fishery Waste.

Paul Holloway – Natural Products as a Biocontrol Method for Freshwater Fouling

Judith Huebner - Effects of UV Radiation

Andy Park – Comparing cumulative growth, stand biomass, and carbon storage among fire-origin and planted stands of Red and Jack pine in Sandilands Provincial Forest, Manitoba; A framework for managed relocation of forest trees in southeast Manitoba.

Eva Pip - Nutrient status and chlorophyll a in relations to microcystins and anatoxins in Lake Winnipeg, MB

Jacques Tardif – Gap Dynamics in Trembling Aspen Stands, Dendroclimatology of Jack Pine and Tree-Ring Anomalies in Conifers from Manitoba.

Richard Westwood - Growth & diversity of Pine/Spruce plantations in Manitoba.

Craig Willis - Ecological Energetics of Small, Wild Animals: From Flexibility to Fitness; Artifical Thermal Refugia and White Nose Syndrome.

Chemistry

Athar Ata - Phytochemical Studies on Medicinally Important Plants (creating natural pharmaceuticals).

Charles Wong – Limiting phosphorous and contaminant loading to Lake Winnipeg from the Grindstone Park cottage development by optimizing nutrient sequestration and recycling in a lagoon - wetland wastewater treatment system.

Enviromental Studies

Alan Diduck – Learning, environmental governance and sustainability: Lessons from Manitoba Hydro's Bipole III project

Darshani Kumaragamage – Investigating phosphorus release from waterlogged soils in Manitoba to facilitate design standards and operational protocols for drainage systems.

Geography

Jacqueline Binyamin - Modelling the energy balance fluxes for Lake Winnipeg

Danny Blair – Infrastructure for Wide Market Adoption of PHEV (Plug-in Hybrid Electric Vehicles); Assessment of climate change and variability in Manitoba/Western Interior; Impacts of climate change on transportation in the Western Interior.

Bill Buhay – Methane and Nitrous Oxide cycling in the Red River, Manitoba: Implications for a pollution instigated greenhouse gas emissions from an anthropogencially impacted river; Morden's Community Lead Environmental Action on Nutrient Elimination and Removal (CLEANER) in Dead Horse Creek.

Jino Distasio – Churchill Sustainability Planning Framework (through the Institute of Urban Studies).

Patricia Fitzpatrick - Government and Voluntary Policies for Mining Sustainability: Development, Implementation and Learning in Canada and Brazil; Silos and Systems, Development and Sustainability: Catalytic Forces in Mineral Policy?

Joni Storie – Applied Remote Sensing and Water Resource Management

Other
Samantha Arnold (Politics) – Climate Change and Commercial Shipping Developments in the Arctic.

Soham Baksi (Economics) - Multiple pollutants and the benefits of cleaner technology adoption

Amrita Ray Chaudhuri (Economics) - International cooperation to reduce climate change and the impact of clean technologies

Maggie Liu (Business Admin) – Accounting for sustainable development

Shailesh Shukla (IG) - Social Learning for Sustainability: Building on Knowledge and Perspectives of Traditional Medicinal Healers from India and Canada

Satyendra Singh - How sustainability orientation makes market-oriented firms more market-oriented

Government of Canada Northern Scientific Training Program – two senior undergraduates participated in this program, working with adjunct faculty member LeeAnn Fishback at the Churchill Northern Studies Centre during the summer on projects that are related to the tundra and boreal forest near Churchill.

14 Appendix C – Campus Sustainability Council Members

Jodene Baccus, Senior Analyst, Office of Institutional Analysis
Len Cann, Director, Physical Plant
Michael Dudley, Research Associate, Institute of Urban Studies Library
Michael Emslie, Associate Vice-President Finance & Comptroller
Laurel Repski, Vice-President Human Resources, Audit & Sustainability
Lydia Warkentin, Manager of Campus Living (Food Services), University of Winnipeg Community Renewal Corporation
Mark Burch, Retired Director, Campus Sustainability Office
Alana Lajoie-O'Malley, Manager, Campus Sustainability Office
Debbie Schnitzer, Faculty, English
Kaeleigh Ayre & Christian Enright, Coordinators, EcoPIA (Ecological People in Action)
Andrée Forest, Environmental Ethics Director, University of Winnipeg Students' Association
Katie Haig-Anderson, Vice-President Internal, University of Winnipeg Students' Association