UWinnipeg Sustainability Performance Report

April 1, 2015 - March 31, 2016 (FY 2015)

Contents

List of Tables

List of Images

List of Figures

List of Abbreviations

AVP – Associate Vice President CO2e
- Carbon Dioxide Equivalent CSC -
Campus Sustainability Council CSO -
Campus Sustainability Office EcoPIA -
Ecological People in Action FY - Fiscal
Year (April 1 - March 31)
GESA - Geography & Environmental Studies Students' Association
GHG - greenhouse gas
IAP - Initial Action Plan
ISO - International Standards Organization
LEED - Leadership in Energy & Environmental Design
MMSM - Multi Materials Stewardship Manitoba RCFE
- Richardson College for the Environment
ROI - Return on Investment
STARS - Sustainability Tracking, Assessment, & Rating System
TOR - Terms of Reference
UWCRC - University of Winnipeg Community Renewal Corporation
UWSA - University of Winnipeg Students' Association
VP Finance & Admin - Vice President Finance & Administration
VP HR, Audit & Sustainability - Vice President Human Resources, Audit & Sustainability

1.0 Executive Summary

1.1 Performance

Throughout FY2015, the action plans established by the Campus Sustainability Council provided the roadmap for activities related to campus sustainability at UWinnipeg. Details on the status of each action can be found in Appendix A, while the performance metrics in Figure 2 and those provided in more detail in relevant report sections speak to the results achieved through the University's efforts. Key successes, key challenges, and FY2016 priorities are highlighted below the Performance Summary graph. The University is also evaluating progress since 2009, the year it completed its comprehensive facilities audit and developed the core activities that were reflected in the 2012 *UWinnipeg Sustainability Strategy.* Change in key indicators from that year can be seen in Figure 1.

Figure 1 Sustainability Performance Summary for The University of Winnipeg from April 1st, 2009 – March 31st, 2016 showing percent change for waste collection, compost collection, recycling collection, water consumption, energy intensity, electricity consumption, natural gas consumption and greenhouse gas (GHG) emissions. GHG emissions and natural gas consumption are normalized for weather.

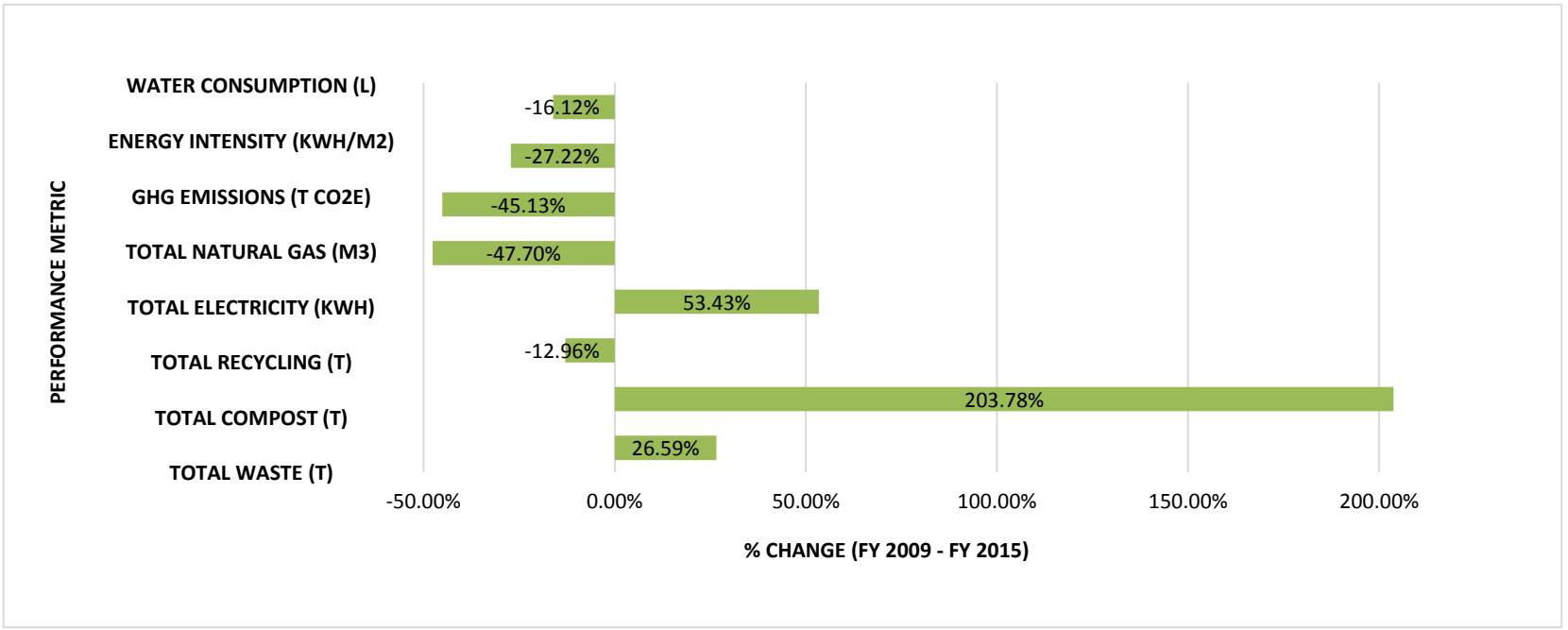


Table 1 Sustainability Performance Summary for The University of Winnipeg from April 1st, 2009 – March 31st, 2016

	Water Consumption (L)	Energy Intensity (kWh/m2)	GHG Emissions (T CO2e)	Total Natural Gas (m3)	Total Electricity (kWh)	Total Recycling (T)	Total Compost (T)	Total Waste (T)
% Change	-16.12%	-27.22%	-45.13%	-47.70%	53.43%	-12.96%	203.78%	26.59%
FY 2009	74,714,597	338	3,882	1,928,728	14,522,600	108	14	222
FY 2015	62,667,600	246	2,130	1,008,666	22,281,803	94	41	280
Total Difference	-12,046,997	-92	-1,752	-920,062	7,759,203	-14	28	59

Figure 2 Sustainability Performance Summary for The University of Winnipeg from April 1st, 2015 – March 31st, 2016 showing annual percent change for waste collection, compost collection, recycling collection, water consumption, energy intensity, electricity consumption, natural gas consumption and greenhouse gas (GHG) emissions. GHG emissions and natural gas consumption are normalized for weather.

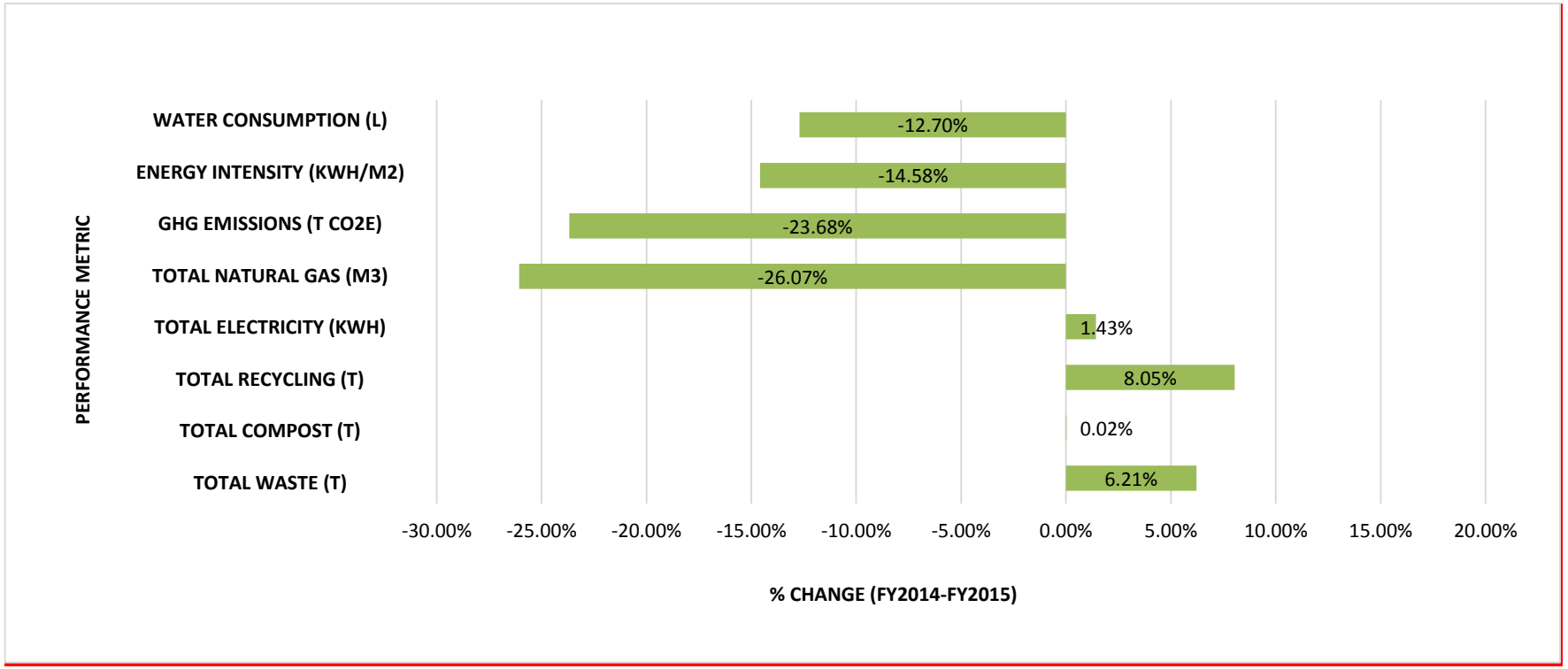


Table 2 Sustainability Performance Summary for The University of Winnipeg from April 1st, 2015 – March 31st, 2016

	Water Consumption (L)	Energy Intensity (kWh/m2)	GHG Emissions (T CO2e)	Total Natural Gas (m3)	Total Electricity (kWh)	Total Recycling (T)	Total Compost (T)	Total Waste (T)
% Change	-12.70%	-27.22%	-45.13%	-47.70%	53.43%	-12.96%	203.78%	26.59%
FY 2014	71,787,100	338	3,882	1,928,728	14,522,600	108	14	222
FY 2015	62,667,600	246	2,130	1,008,666	22,281,803	94	41	280
Total Difference	-9,119,500	-92	-1,752	-920,062	7,759,203	-14	28	59

1.2 Key Successes

Strategic Directions & IARP: The University adopted a new Strategic Directions document as well as a new Integrated Academic and Research Plan (IARP). Both documents confirm the University's ongoing commitment to sustainability while also highlighting possibilities for new directions in our sustainability efforts by creating stronger links with the University's academic core. These documents provide important and valuable foundations for the sustainability policy and strategy review that will take place in FY2016.

Energy & Emission Reductions: Through its ongoing energy and emission reduction efforts, greenhouse gas emissions in FY2015 decreased by approximately 24% over FY2014. This result means that between 1990 and 2015, campus wide emissions decreased by approximately 32% despite a 38% increase in owned space. The University has substantially exceeded its target of reducing absolute emissions 10% below 1990 levels. Energy intensity of campus operations decreased by just over 14% over last year, and by 27% compared to 2009. The University has surpassed its energy efficiency target of achieving an 18% reduction in energy use per square meter of owned space compared to 2009 energy intensity by FY2016.

Compost Program Expansion and Recycling Improvements: UWinnipeg moved into a larger portion of the Rice Tower over the course of FY2015. This move created an opportunity to implement a composting program and an improved recycling program in the building. UWinnipeg occupied areas of the tower are now outfitted with multi-stream bins similar to those on main campus. The results of a pilot project for office-level waste will inform decisions on further steps for improving waste diversion on campus.

WCUPPA conference: Physical Plant hosted the Western Canada University Physical Plant Administrators annual conference this year. Conference organizers chose the theme *Sustainability in Action* for the conference, which was attended by facilities managers from all the major Western Canadian Universities. The conference focused on what each University has achieved, future plans and even projects that weren't successful. Organizers attempted to make the conference itself of as sustainable as possible. For example participant stayed within walking distance of the campus, all conference events were held on campus with exception of two events, a City of Winnipeg/Manitoba Hydro electric bus was used to provide transportation to off campus events, and the conference was paper-free.

1.3 Key Challenges

Waste Data: Achieving reasonable understanding of waste generation and diversion rates remains elusive. Some steps were taken this year to attempt to achieve some improvements in data quality; however, the University does not anticipate receiving accurate waste data from its waste hauler for the foreseeable future. It is likely time to begin to explore ways that the University might weigh its own waste.

Strategic Plan & Policy Review: Various efforts related to reviewing sustainability governance have struggled to take hold over the past two years. These challenges have been driven by the reality of competing engagement processes and by the need to establish the University's strategic directions before moving on to reviewing sustainability issues more specifically. Overall, the delay will enable a much stronger approach to sustainability governance; however, there are lessons to be learned with respect to sequencing of different institutional policy and strategy review processes.

1.4 FY2016 Priorities

The core priority in 2016 will be to complete a review of current Sustainability policies and indicators while also renewing the University's sustainability strategy. Other key priorities related to procurement, waste, academics, and energy management will be reflected in this process.

Image 1 *Dr. Ian Mauro interviews David Suzuki for his 80th birthday in March 2016. (Photo Cory Aronec)*

2.0 Introduction

2.1 Reporting Period and Scope

This report applies to FY2015 – April 1st, 2015 - March 31st, 2016 and where possible 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. Utility data for leased spaces are not included in this report due to lack of access to data.

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 support of the Campus Sustainability Council and its various committees. With the assistance of the Director 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 eight related administrative policies, provides a roadmap for sustainability- related action and initiatives throughout the University. Performance relative to each target area forms the main substance of this report.

2.3 Annual Demographic 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.

Image 2 *Despite significant additions to the campus footprint like the RecPlex, The University has been able to reduce emissions.*

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. This report does not include data on leased space, as the University does not have any operational control over it. The table below summarizes campus area over the past several years.

Table 3 Space inventory at University of Winnipeg from 1990 – 2015 including buildings/housing leased and owned (m^2).

Year	*Buildings Leased*	*Buildings Owned*	*Housing Owned*	*Housing Leased*	*Total Area Occupied*	*Total Owned Space*	*Total Leased Space*
1990	NA	87,644	0	0	87,644	87,644	NA
2005	5,221	95,648	1,774	3,538	106,182	97,422	8,759
2006	5,909	95,648	1,774	3,538	106,869	97,422	9,447
2007	6,752	95,648	1,960	3,538	107,899	97,608	10,291
2008	7,580	95,379	2,146	3,538	108,643	97,524	11,119
2009	6,564	94,795	8,798	3,538	113,695	103,593	10,102
2010	4,927	98,887	8,481	3,538	115,834	107,368	8,466
2011	7,271	112,759	8,295	3,538	131,863	121,054	10,810
2012	7,409	110,515	8,413	3,538	129,876	118,929	10,947
2013	7,409	110,515	8,413	3,538	129,876	118,929	10,947
2014	7,409	134,537	8,413	3,538	153,897	142,950	10,947
2015	7,409	134,537	8,413	3,538	153,897	142,950	10,947

2.3.2 Campus Population & Operational Changes

The number of people on campus did not change significantly in FY2015, and is not expected to have a significant impact on resource consumption and waste generation. Student and staff numbers are represented in the table below.

Table 4 Student and staff population of University of Winnipeg from FY2010 – FY2014. The student population is measured in full course equivalents (FCE), and the staff measured in full time equivalents (FTE).

Fiscal Year	FCE #*	Staff #
FY2010	NA	724
FY2011	23,452	756
FY2012	24,074	824
FY2013	27,842	810
FY2014	26,961	854
FY2015	26,567	832

*FCE numbers revised to align with streamlined reporting processes.
New numbers reflect only undergraduate FCE

3.0 Performance

Each aspect of sustainability performance over FY2015 was guided by the Action Plans that were developed by the Campus Sustainability Council near the beginning of the fiscal year. A report on the status of each action plan is included in Appendix A. Action plans for the coming year are shorter than in previous years to accommodate the policy and strategy review process. Existing efforts and programs will be maintained while the main new effort for the coming year from all areas will be to develop a renewed strategy.

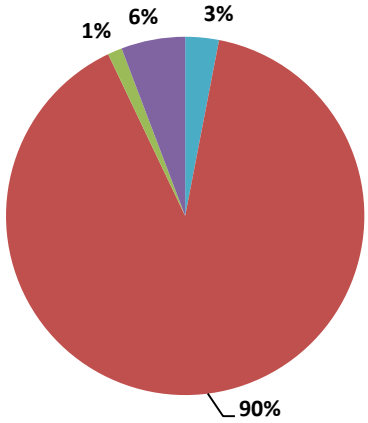
3.1 Air, Energy & Water

3.1.1 Greenhouse Gas Emissions & Energy Consumption

The University of Winnipeg currently reports Scope 1 and Scope 2 greenhouse gas emissions. These include emissions from electricity and natural gas, as well as fuel used in fleet vehicles and fugitive emissions from refrigerants. Not included in this inventory are Scope 3 emissions

such as business travel, waste, commuting, and paper purchases. These Scope 3 emissions may be included in the future. Emissions from natural gas used for heating make up the bulk of UWinnipeg's Scope 1 & 2 emissions. Emission reduction efforts to date have emphasized reducing that amount of natural gas consumed on campus.

Figure 3 Breakdown of greenhouse gas emissions (% TCO_2e) from UWinnipeg in FY2015 by source, including electricity, natural gas, fleet vehicles, and refrigerants.



ELECTRICITY
NATURAL GAS
FLEET VEHICLES
REFRIGERANTS

FY2015 GHG EMISSIONS (T CO2E)	
ELECTRICITY	64.6
NATURAL GAS	1914.5
FLEET VEHICLES	27.7
REFRIGERANTS	123

Greenhouse gas emissions in FY2015 decreased by approximately 24% over FY2014. This result means that between 1990 and 2015, campus wide emissions decreased by approximately 32% despite a 38% increase in owned space. The University has substantially exceeded its target of reducing absolute emissions 10% below 1990 levels.

Energy intensity of campus operations (Table 4, Figure 4) decreased by just over 14% over last year, and by 27% compared to 2009. The University has surpassed its energy efficiency target of achieving an 18% reduction in energy use per square meter of Owned space compared to 2009 energy intensity by FY2016. Weather adjusted natural gas consumption is 48% lower than it was in FY2009 and 26% lower since last year (Table 3, Figure 4). University electricity consumption continued to inch down, with a 5.3% reduction since FY2014. It remains 41% higher than it was in 2009. Efforts to reduce the University's use of hydro-electricity are ongoing.

There are three reasons for the large drop in emissions and natural gas over the past year. First, several mechanical challenges and other irregularities in 2014 caused emissions in 2014 to be higher than they would have been under normal operating conditions. It is instructive to note that FY2015 emissions are 9% lower than they were in FY2013, highlighting that FY2014 was an irregular year. Second, energy efficiency

work continued in FY2015. Third, the RecPlex used much less energy than predicted. Details of each are outlined below.

(1) FY2014 irregularities

a. Ashdown hybrid system was not functioning for about 5 weeks during the winter

b. Centennial hybrid system was not functioning for about 2 months during the winter

c. RCFE Heat Wheel was not working for about 2 months during the winter

d. RCFE electric boiler was not functioning for about 2 months during the winter

e. Windows in Manitoba Hall were replaced over the course of the fall and winter, leaving larger areas wide open during cold weather months

(2) FY2015 work

We have a process in place for ongoing commissioning and system optimization, emphasizing smart building energy management. Through this process, the following activities likely had the most substantial impact on energy consumption in FY2015.

a. Lockhart perimeter radiation heating valves were all replaced and put into operation. Prior to this change, Lockhart Hall often operated with simultaneous heating and cooling because it was not possible to regulate the heat output from the radiators. This retrofit has allowed for better heat regulation, reducing heating load on the Ashdown heating plant.

b. Centennial ventilation project wrapped up near the end of the FY2014 heating season, meaning that this was the first heating season that would reflect the full impacts.

c. In the Centennial Hall heating plant, a lower temperature hot water heating loop was restored to better regulate heat and reduce boiler cycling for all Centennial Hall heating systems. Controls were upgraded on the boilers to ensure that boilers only run at the intensity required to support required heating loads. This enhanced the operation of our hybrid heating system during the shoulder season.

d. Implemented R25 scheduling, connecting HVAC operation in rooms with the times they are scheduled for use, with motion and CO2 sensors to ensure that unscheduled occupants trigger the systems as well.

e. Installed LED lighting in the library, main corridors of Centennial, Ashdown, Bryce, Manitoba and Lockhart Halls, Riddell cafeteria, and several other common areas throughout campus.

f. Several control system upgrades for the Riddell ventilation systems, including the kitchen, Bryce Hall, several systems in Centennial that were not included in last year's round of control system upgrades.

g. The RecPlex energy model predicted 1,540,607 kWh of electricity use and 186,184 cubic meters of natural gas consumption annually. This energy model predicted annual emissions from the building to be 355 T CO2e. Instead, in FY2015 the RecPlex used 1,492,561 kWh of electricity (3% less than predicted by the energy model) and 41,500 cubic meters of natural gas (77% less than predicted by the energy model). This represents just under 82 T CO2e, or almost 77% lower than expected.

(3) Work completed since 2010

a. Deployment of a sophisticated energy management system campus wide with re-commissioning of existing mechanical systems.

b. The new energy management systems enables us to do things to turn the heat down at night and at times that buildings will not be occupied for longer periods of time and to only direct as much energy to areas as required.

c. A number of demand-based ventilation strategies have used CO2 sensors and motions sensors to improve air quality and deliver optimal amounts of fresh air. Significant infrastructure changes were implemented in Lockhart and Centennial Hall and other areas on campus to accommodate these changes.

d. Duckworth, T21 and Napanee boiler upgrades to high-efficiency natural gas.

Image 3 *The University's hybrid heating systems uses electricity for heating at off-peak times.*

Figure 4 Greenhouse Gas Emissions at UWinnipeg in tonnes of carbon dioxide equivalents (TCO_2e) from FY 1990 to FY 2015, and target emissions quantity (2,819 TCO_2e). Real annual emissions and weather adjusted annual emissions are shown.

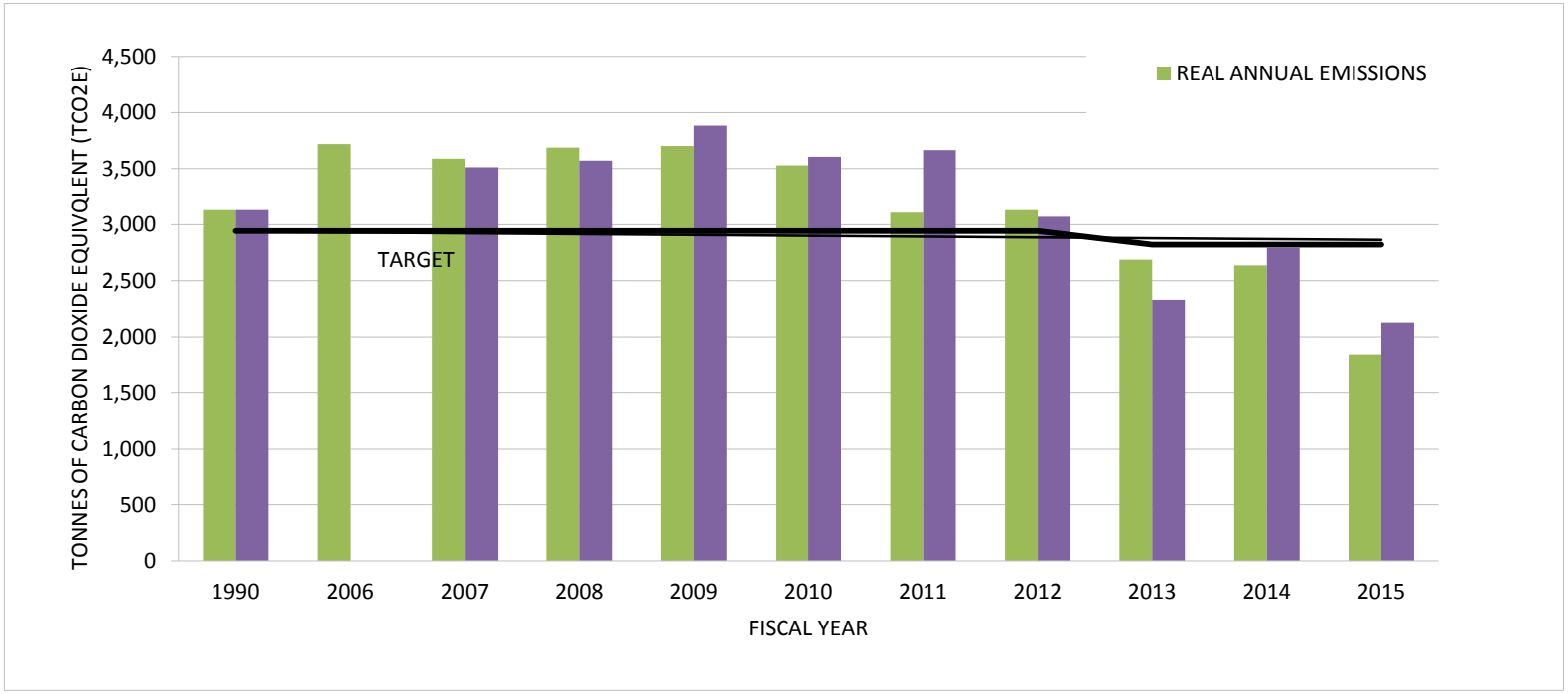


Table 5 Greenhouse gas emissions in tonnes of carbon dioxide equivalents (TCO_2e) from FY1990 to FY2014 for UWinnipeg. Real annual emissions and weather adjusted amounts are shown.

Year	1990	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Real Annual Emissions	3130	3719	3590	3688	3701	3529	3107	3130	2686	2636	1836
Weather Adjusted Annual Emissions	3130	NA	3511	3572	3882	3605	3664	3070	2330	2791	2130
Target	*2943*	*2943*	*2943*	*2943*	*2943*	*2943*	*2943*	*2943*	*2819*	*2819*	*2819*

Figure 5 Energy consumption breakdown for UWinnipeg from FY2006 to FY2015 including stationary fuel, vehicle fuel, natural gas (weather adjusted) and hydro (kWh). The intensity (kWh /m^2) is also reported.

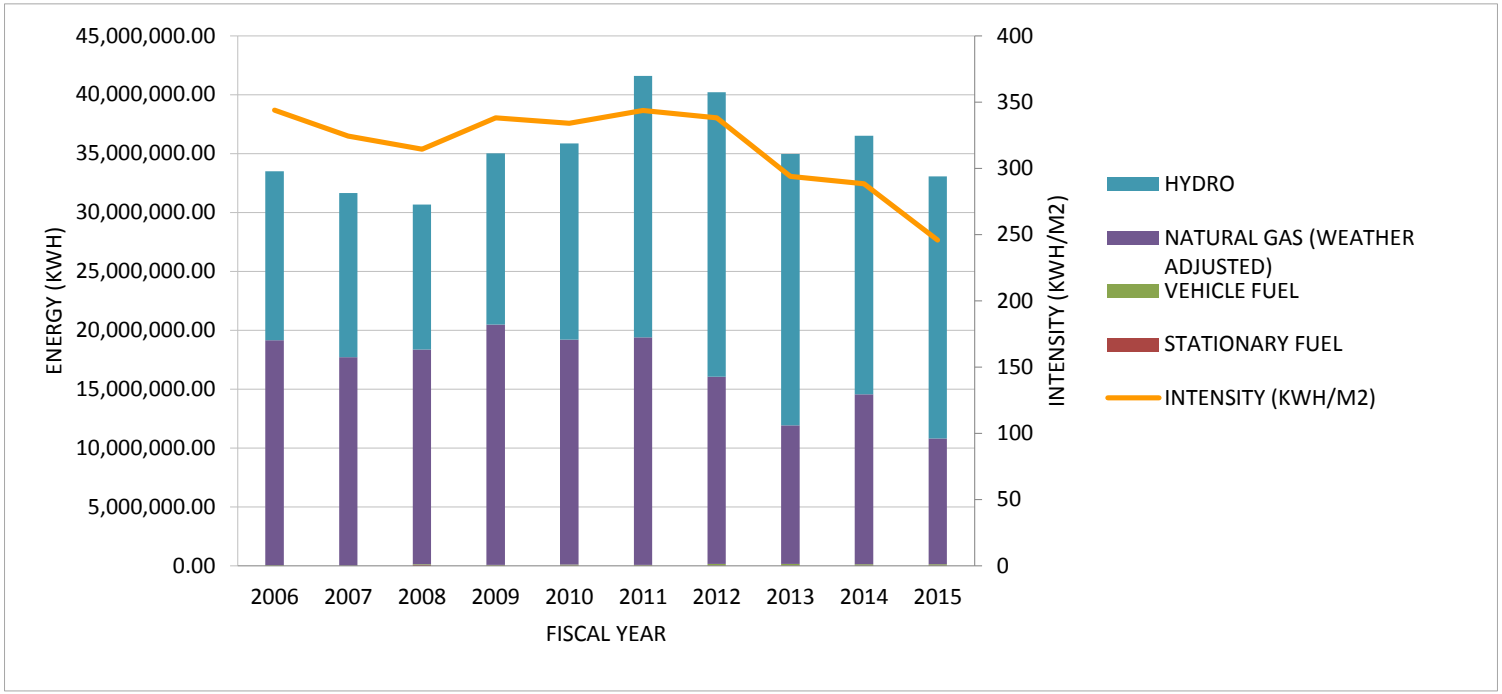


Table 6 Energy consumption breakdown for UWinnipeg from FY2006 to FY2014 including stationary fuel, vehicle fuel, natural gas (weather adjusted) and hydro (kWh or kWh equivalent). The intensity (kWh /m^2) is also reported.

Type (kWh)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Stationary Fuel	0	0	58,320	1,625	1,625	1,625	1,625	1,625	3,125	1,625
Vehicle Fuel	41,563	27,047	75,015	76,159	89,891	64,784	145,868	151,020	114,880	115,862
Natural Gas	19,102,349	17,692,420	18,212,494	20,412,307	19,122,245	19,337,721	15,901,281	11,772,471	14,440,035	10,675,015
Hydro	14,347,029	13,935,414	12,326,236	14,522,600	16,644,876	22,193,651	24,156,504	23,037,343	21,967,443	22,281,803
TOTAL	**33,490,941**	**31,654,881**	**30,672,065**	**35,012,691**	**35,858,637**	**41,597,781**	**40,205,278**	**34,962,459**	**36,525,483**	**33,074,305**
Intensity (kWh/m^2)	*344*	*324*	*315*	*338*	*334*	*344*	*338*	*294*	*288*	*246*

Figure 6 Natural gas consumption for UWinnipeg from FY1990 to FY2015 including real annual consumption and weather adjusted consumption (m^3). The intensity (m^3/m^2) is also shown.

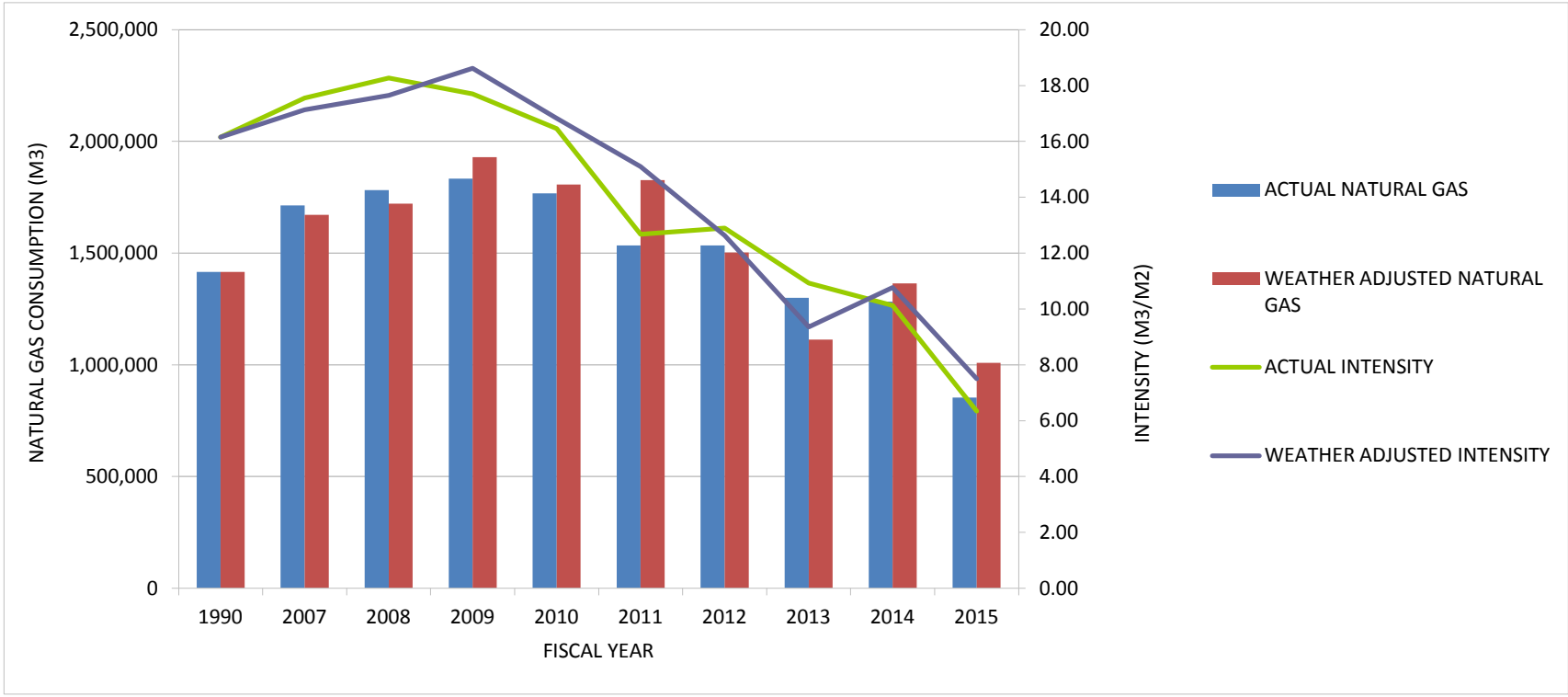


Table 7 Natural gas consumption for UWinnipeg from FY1990 to FY2015 including real annual consumption and weather adjusted consumption (m^3). The intensity (m^3/m^2) is also reported.

Natural Gas Consumption	1990	2007	2008	2009	2010	2011	2012	2013	2014	2015
Actual Natural Gas (m3)	1,415,408	1,710,947	1,688,739	1,830,931	1,779,367	1,551,615	1,534,067	1,299,843	1,283,007	853,861
Weather Adjusted Natural Gas	1,415,408	1,671,730	1,720,871	1,928,728	1,818,504	1,845,921	1,502,488	1,112,363	1,364,417	1,008,514
Actual Intensity (m3/m2)	16.15	17.53	17.32	17.67	16.57	12.82	12.90	10.93	10.12	6.35
Weather Adjusted Intensity	16.15	17.13	17.65	18.62	16.94	15.25	12.63	9.35	10.77	7.50

Figure 7 Electricity consumption (kWh) for UWinnipeg from FY2007 to FY2015. The intensity (kWh/m^2) is also shown.

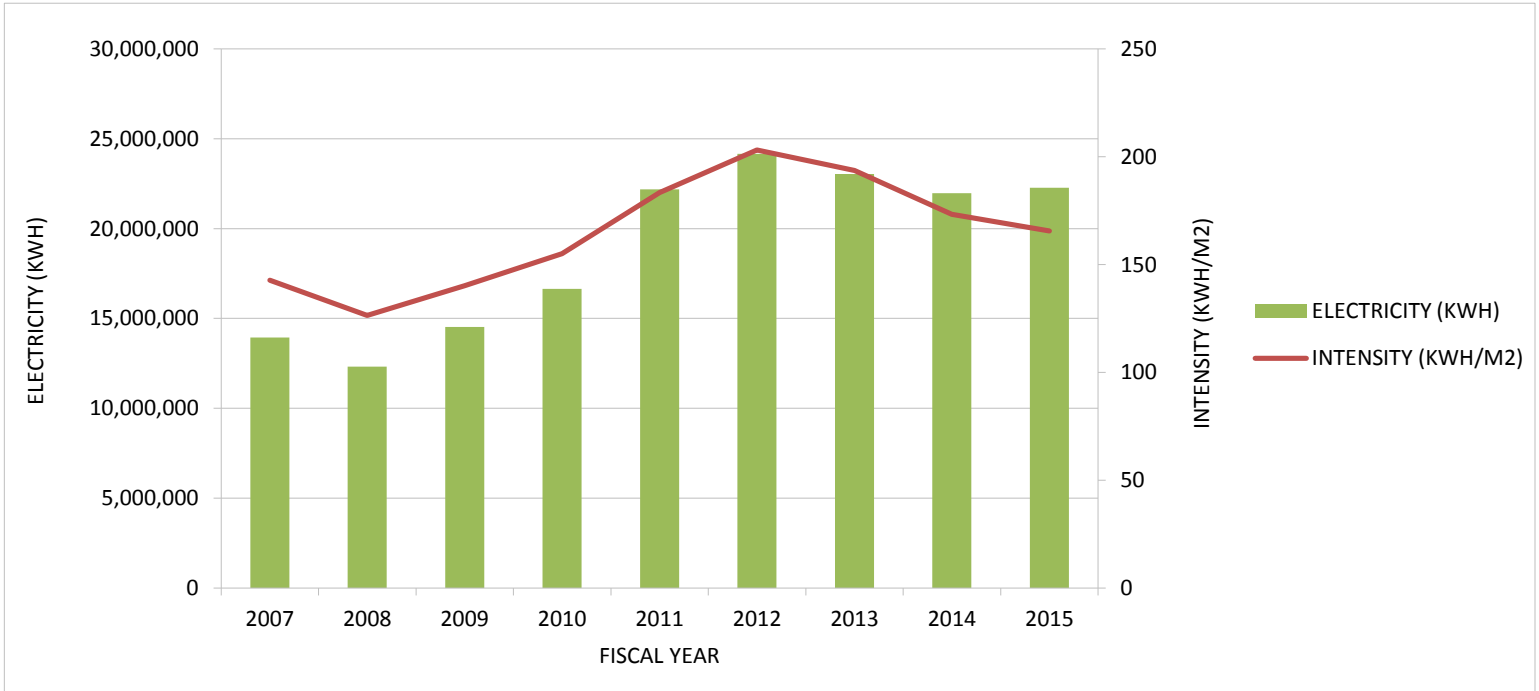


Table 8 Electricity consumption (kWh) for the UWinnipeg from FY2007 to FY2015. The intensity (m^3/m^2) is also reported.

Electricity	2007	2008	2009	2010	2011	2012	2013	2014	2015
Electricity (kWh)	14,118,810	12,501,378	14,702,975	16,864,380	22,284,140	24,287,065	23,037,343	21,967,443	20,789,242
Intensity (kWh/m^2)	*145*	*128*	*142*	*157*	*184*	*204*	*194*	*163*	*155*

3.1.2 Water

Water consumption in FY2015 decreased just under 13%% over the previous year. This result is likely due to the fact that an increase in water consumption was caused last year by a plumbing challenge in Wesley Hall. No major water conservation projects were undertaken this year. A small number of fixtures on campus have not yet been replaced with low-flow alternatives. These fixtures will be replaced as possible.

Figure 8 Water consumption (L) for UWinnipeg from FY2006 to FY2015.

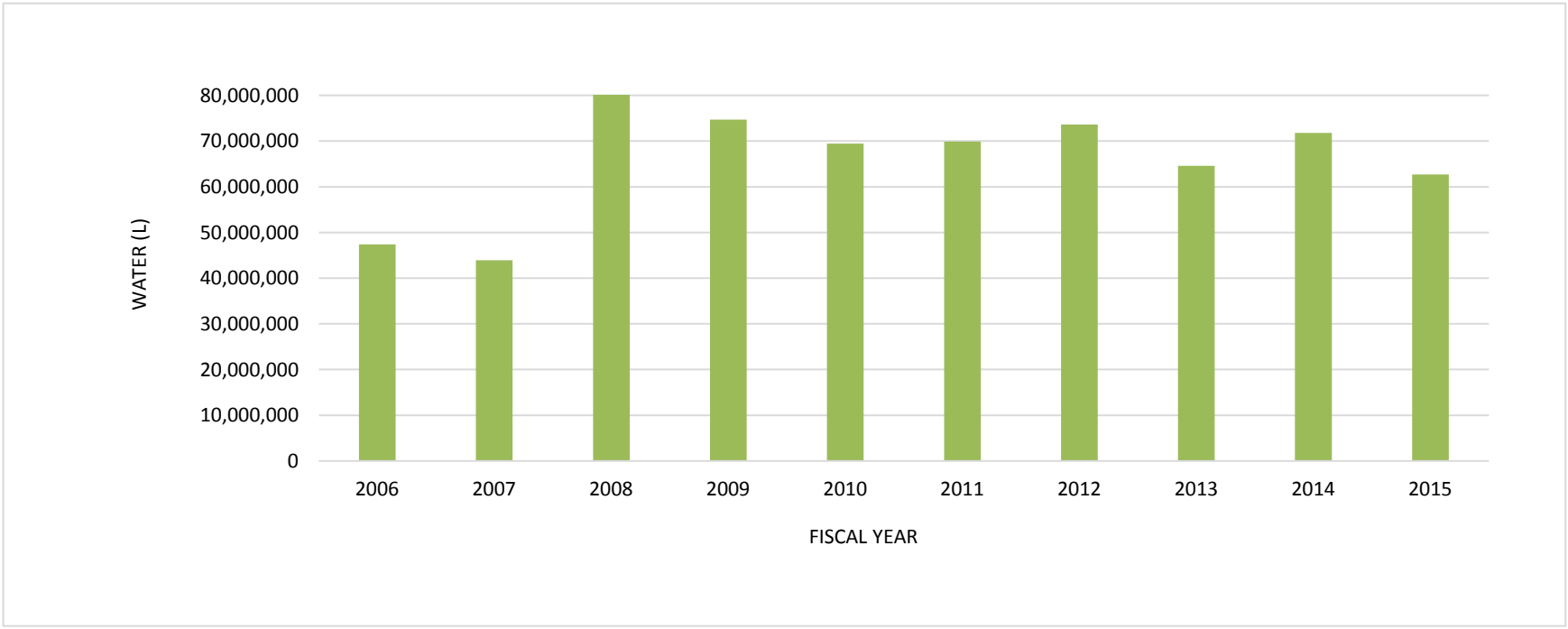


Table 9 Water consumption (L) for UWinnipeg from FY2006 to FY2015.

Fiscal Year	2006	2007	2008	2009	2010	2011	2012	2013	2014
Water Consumption (L)	47,388,592	43,897,460	80,113,761	74,714,597	69,452,051	69,914,000	73,638,940	64,608,500	71,787,100

3.2 Waste, Grounds & Cleaning

3.2.1 Waste

Data accuracy continues to cause significant challenges in understanding the University's progress with respect to waste reduction and diversion. Year over year variations in the volumes of landfill and recycling waste continue to appear to be more closely related to changes in the measurement practices of haulers than to actual changes in waste volumes.

Concerns about data quality were confirmed this year. A waste audit was conducted in February that yielded data on the total volume of waste produced and on the University's diversion rate that is substantially at odds with results provided by our waste hauler. This discrepancy was also identified in the waste audit conduction in 2013, as seen in figure 9. This discrepancy illustrates the substantial margins of error in reporting on waste quantities and diversion rates in Manitoba. It appears to be systematic and no solution appears to be readily available to the problem. In the year ahead, UWinnipeg will continue to dialogue with haulers and with partners across the city and province to attempt to reduce the margins of error in this important area of sustainability reporting. This issue is all the more important because the current state of data quality related to waste volumes will make it difficult to reasonably include waste in the University's greenhouse gas emission report despite our interest in beginning to report on more of our scope 3 emissions in the years ahead.

Image 3 *Recycling signage engages the university community in the CSO's waste reduction efforts.*

Figure 9 UWinnipeg's Waste Profiles for FY2013 & FY2015, comparing hauler data with waste audit data.

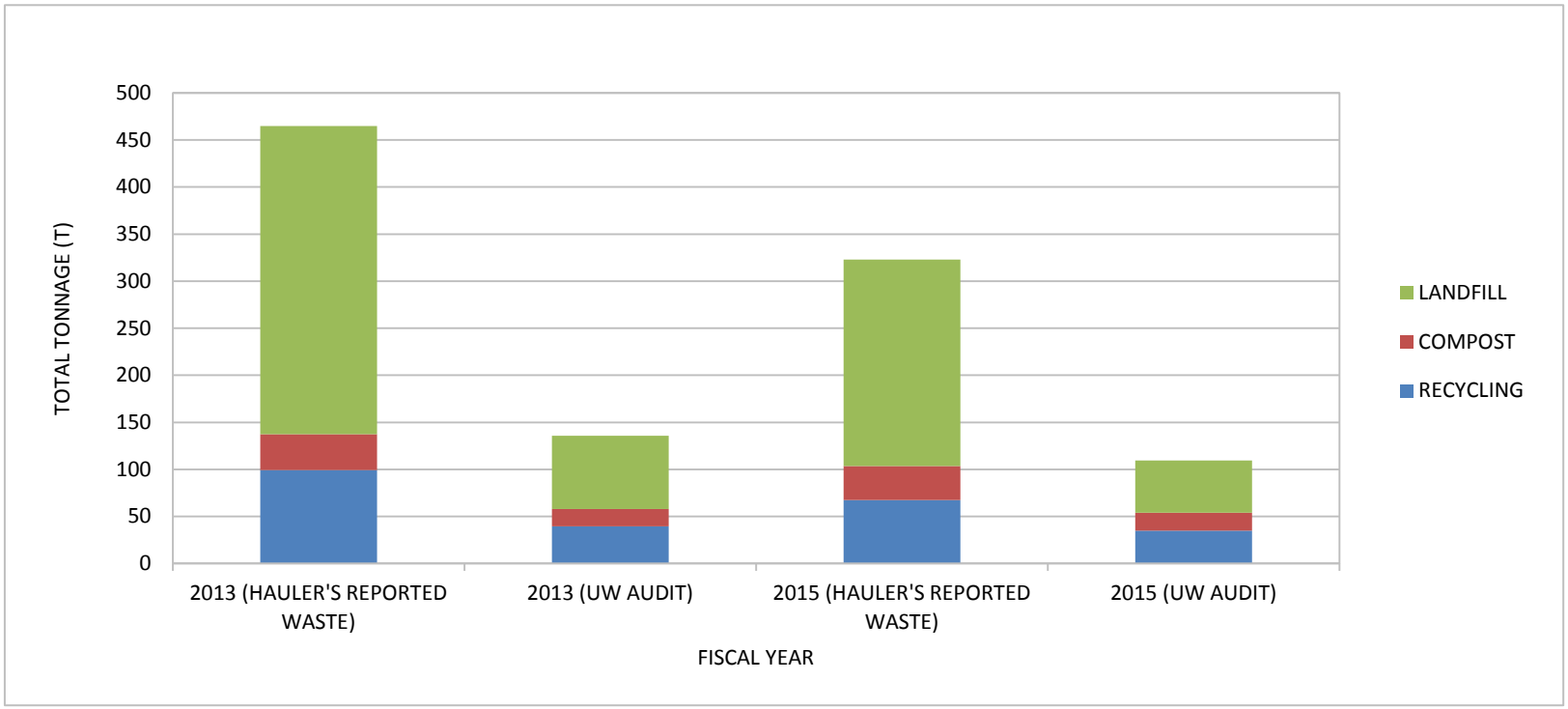
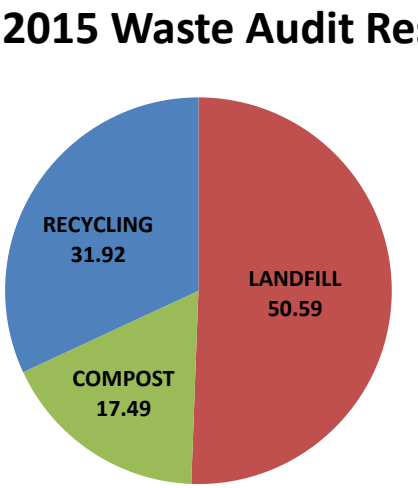


Table 10 Comparison of municipal solid waste and total diverted waste (tonnes) on campus hauler data and waste audit (FY2015).

Waste Type	2015 (Hauler Data)	2015 (Audit)
Municipal Solid Waste*	219.3	55.3 (T)
Recycling	67.4	34.9 (T)
Compost	36.1	19.1 (T)
Total Weight	**322.8**	**109.3**
Diversion Rate	***32.1%***	***49.4%***

Figure 10 UWinnipeg's Waste Profile for FY2015 according to UWinnipeg's waste hauler and to the audit conducted this year***note significant difference between data sources***



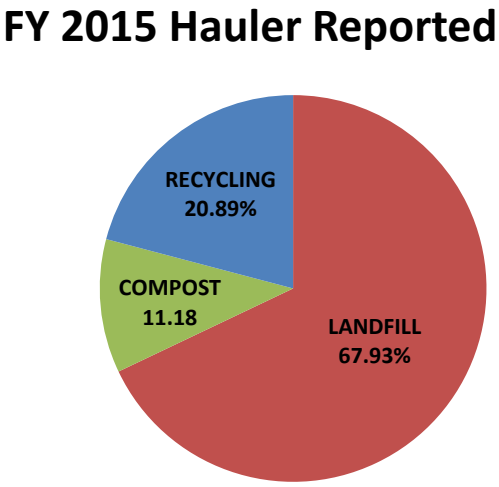


Figure 11 Annual landfill, recycling and composting amounts (metric tonnes) at UWinnipeg for FY2006 to FY2015 ***note significant uncertainty***.

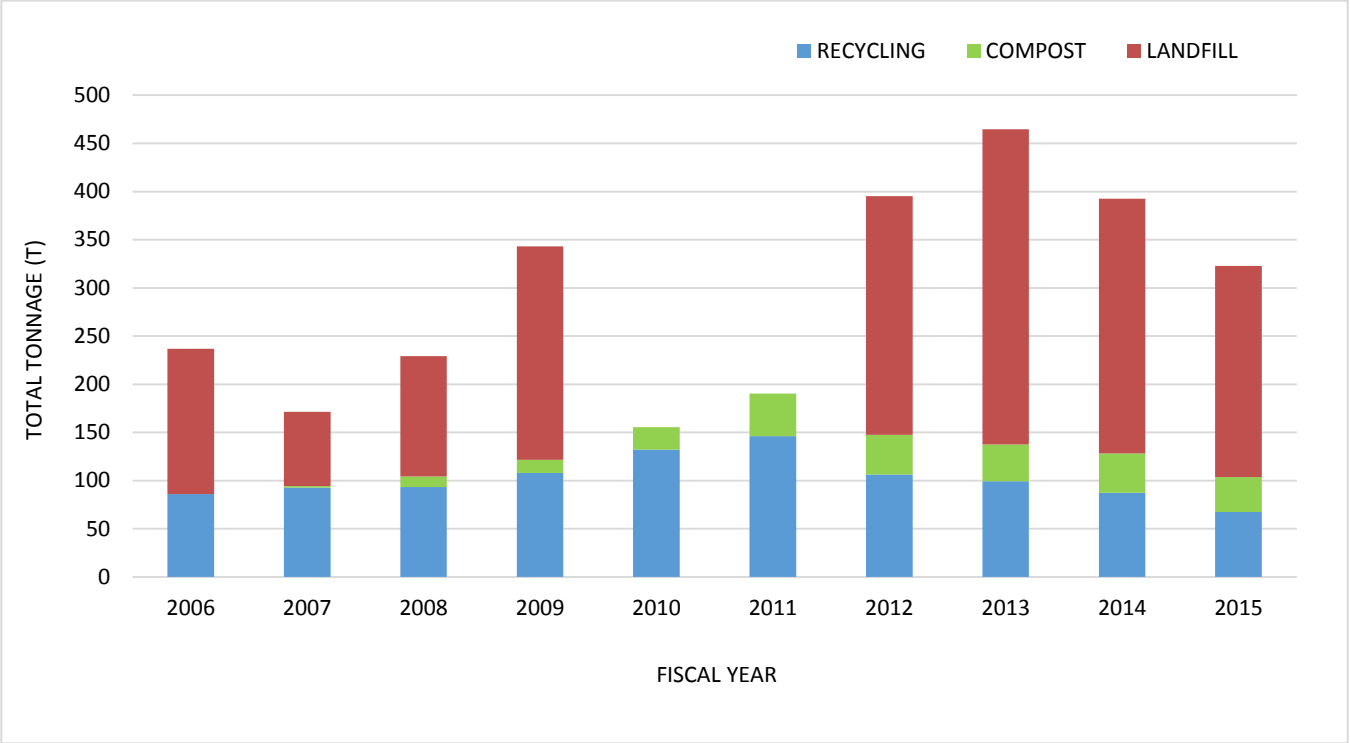


Table 11 Comparison of recycling and composting (metric tonnes) at UWinnipeg from FY2006 to FY2014 ***note significant uncertainty (+/- 50%)***.

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Recycling (T)	86	93	93	108	132	146	106	99	87	67
Compost (T)	0	2	11	14	23	44	41	38	41	36
Landfill (T)	151	77	125	221	NA	NA	248	327	264	219

3.2.2 Cleaning

In FY2015, Physical Plant and the CSO continued to monitor the implementation of sustainability-related elements of the new cleaning contract that was finalized in FY2013. This included monitoring cleaning product use and enhancing sustainability-related training for cleaning staff.

Image 4 *EcoLogo products are used throughout University facilities.*

The chart below provides a summary of the proportion of cleaning and janitorial products used at the University that are EcoLogo certified and of the total amount spent on cleaning and janitorial products over the year. One of the major changes that took place in FY2015 was the implementation of a water-based cleaning technology that eliminated the need for cleaning products for several cleaning applications. This resulted in an overall decrease in the amount of cleaning product purchased. It also resulted in a decrease in the proportion of EcoLogo liquid cleaning agents used on campus as many of the Eco-Logo products that were used last year have been replaced with water-based cleaning technologies. Despite this, just over 85% of cleaning and janitorial expenditures at UWinnipeg this year were on EcoLogo certified products, compared to just under 83% of expenditures last year.

Expenditures on cleaning products do not necessarily translate into actual quantities of products used, nor do they necessarily capture progress in areas related to product reduction and consolidation. In many cases, non-certified EcoLogo products are more expensive specialized products used for specific applications without environmentally preferable alternatives. Regardless, the University will continue to monitor data as expressed here while also developing other approaches to monitoring cleaning-related data.

Figure 12: Expenditures on EcoLogo vs. Non-EcoLogo Certified janitorial and cleaning products from FY2014-2015.

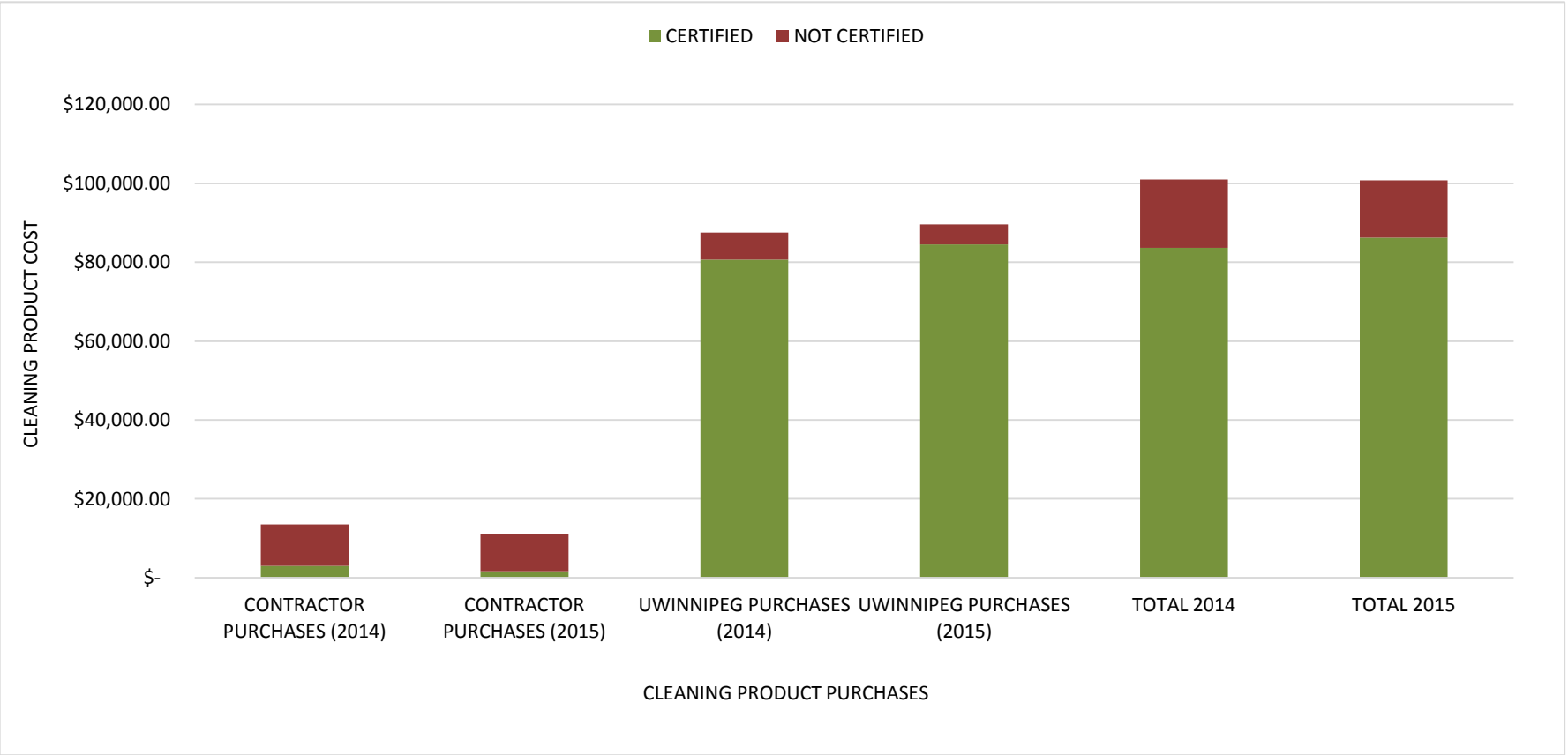


Table 12 Expenditures on EcoLogo vs. Non-EcoLogo Certified janitorial and cleaning products from FY2014-2015.

	Certified	Not Certified
Contractor Purchases (2014)	$3,012.31	$10,470.90
Contractor Purchases (2015)	$1,659.93	$9,512.52
UWinnipeg Purchases (2014)	$80,657.49	$6,860.17
Uwinnipeg Purchases (2015)	$84,543.24	$5,035.30
Total 2014	$83,669.80	$17,331.07
Total 2015	$86,203.17	$14,547.82

3.2.3 Grounds

The University entered into its fifth season of cosmetic herbicide-free grounds keeping and remains committed to these more sustainable practices. A proposal process was finalized so that individuals with ideas for grounds-related initiatives at the University can bring them through the appropriate channels. This process made it easier for University staff to support a student-led effort to green an outdoor mezzanine on campus with the support of the Eco-Grant. The Eco-Grant also supported the student-led creation of a seed library. Garden beds near McFeetors Hall are being used for plants that will help grow the library.

Image 5 *University grounds are maintained without the use of cosmetic pesticides or herbicides.*

3.3 Procurement

Two student projects were undertaken this year to help advance work related to procurement at UWinnipeg. The first examined process issues related to procurement while the second involved compiling best-practice specifications for a range of goods and services in order to update standard specifications for UWinnipeg purchases. Work at incorporating the results of both efforts is ongoing.

On the recommendation of the Fair Trade Committee, the University affiliated with the Worker Rights Consortium (WRC) last year. The WRC is an independent labour rights monitoring organization that conducts investigations of working conditions in factories around the globe. The purpose of the WRC is to help protect the rights of workers who make apparel. The WRC currently has more than 175 affiliated colleges and universities in the U.S. and Canada and is now working with British universities and student unions. WRC affiliate universities receive regular reports on conditions in factories that produce collegiate apparel, with specific reference to whether factories are in compliance with universities' codes of conduct. The Fair Trade Committee is currently in the process of reviewing the WRC's model code of conduct and will be bringing a recommendation forward to the University in the fall for the adoption of a code of conduct for companies selling apparel with the UWinnipeg or Wesmen logo on it. The University will provide reports annually to the WRC as part of its commitment.

3.5 Transportation

A working group was convened to help identify next steps after the University conducted its first commuting survey last year. This working group met three times in FY2015 to undertake this work. The key outcomes will be reflected in the renewed sustainability strategy.

Data collection for reimbursed travel continues to present some challenges. As new financial management software is rolled out in FY2016, these challenges may finally be addressed. For the time being, expect some variations in year-over-year reimbursed travel to be reflective of variations regarding the accuracy of travel information reported by travelers. Reimbursed travel at the University increased about 7.5% in the past year, and has increased nearly 138% since 2009. The main priority at present with respect to reimbursed travel is to establish a more consistent travel tracking process as part of an update to the University's finance software. Once this is in place, focus will turn to developing strategies for mitigating reimbursed travel impacts.

Table 13 Total distance travelled for reimbursed travel, all modes of transportation (air, car, bus, train). NOTE: no data available for 2012.

Year	2008	2009	2010	2011	2013	2014	2015
Distance (km)	3,825,791	2,185,508	3,566,003	3,234,791	4,828,557	4,828,288	5,195,727

Figure 13 Total number of travel claims and distance travelled (km) from all reimbursed travel of staff & faculty at UWinnipeg.

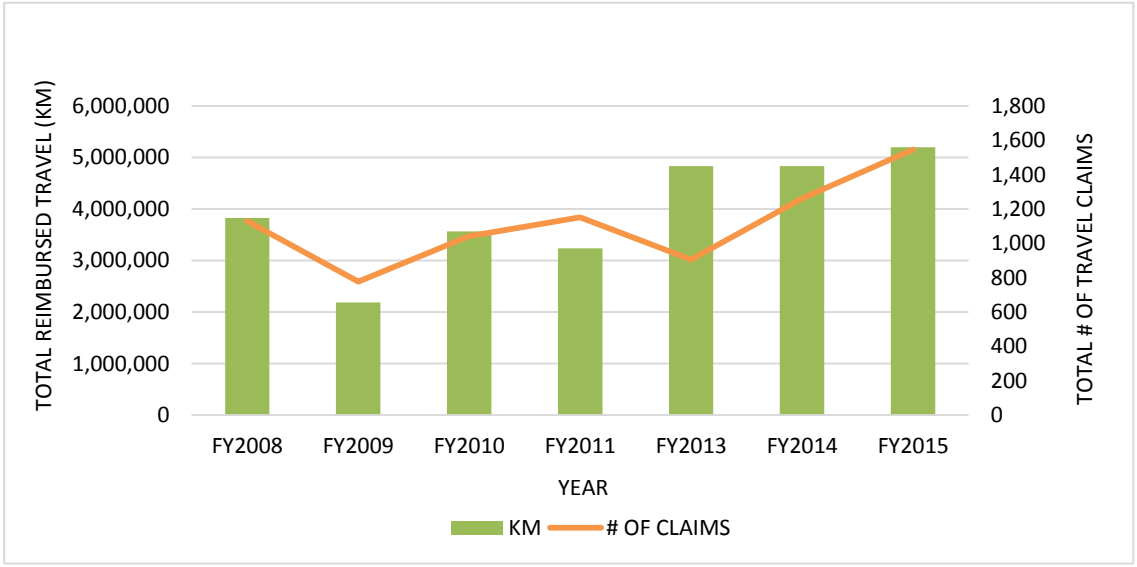


Table 14 Breakdown of claims, distance travelled (km) and modes of transport from all reimbursed travel of staff & faculty at UWinnipeg.

Transportation Impacts	Units	FY2008	FY2009	FY2010	FY2011	FY2013	FY2014	FY2015	% Change (FY2014 vs FY2015)
Reimbursed Air Travel	km	3,599,160	2,054,975	3,393,691	3,088,687	4,710,564	4,607,430	4,937,673	+7.17%
	# of claims	462	340	486	508	617	626	758	+21.09%
Reimbursed Automobile Travel	km	220,590	128,790	158,314	128,782	89,029	180,338	222,784	+23.54%
	# of claims	601	393	522	576	247	549	724	+31.88%
Reimbursed Intra-City Bus Travel	km	5,851	632	8,956	15,974	19,504	30,613	23,193	-24.24%
	# of claims	35	20	23	43	29	64	42	-34.38%
Other Reimbursed Travel	km	190	1,112	5,042	1,348	9,460	9,907	12,077	+21.90%
	# of claims	30	24	10	24	12	22	22	0.00%
Totals	km	3,825,791	2,185,508	3,566,003	3,234,791	4,828,557	4,828,288	5,195,727	+7.61%
	# of claims	1,128	777	1,041	1,151	905	1,261	1,546	+22.60%

3.6 Teaching

When our Environmental Studies program launched in 1970, it was one of the first interdisciplinary undergraduate environment programs in Canada, and one of the first few to emerge worldwide. The 'Issues in Sustainability' stream of the degree program represents the University's main sustainability-focused undergraduate degree program. Other departments also offer sustainability-focused and sustainability-related courses as part of their degree programs.

At the graduate level, our Master's in Development Practice, the Master of Arts in Environmental Resources and Development Economics, and the Post-Baccalaureate in Diploma in Education for Sustainability signify that sustainability has been treated as an area of strength where UWinnipeg can provide niche graduate programs in areas of strategic importance. The anticipated introduction of a Certificate in Sustainability Management (pending Senate approval) through PACE also reflects this commitment. Alongside undergraduate, graduate, and professional programs with a strong emphasis on sustainability, many departments offer courses or modules that orient UWinnipeg students to sustainability issues through their chosen discipline.

Image 6 *Students in the Department of Biology discuss pest and weed control in community gardens with Dr. Rafael Otfinowski.*

Over the course of the year, the Academic Working Group on Sustainability offered ongoing input into the Integrated Academic and Research Plan (IARP) development process to offer ideas about how to build on our current strengths in this area. Much of this input was reflected in the final version of the plan, which includes language confirming the University's commitment to growing sustainability content in teaching and research.

In the winter term, Dr. Alan Diduck taught the University's first Campus Sustainability course. Each student in the course undertook a project related to sustainability on campus. Many of these projects will be posted online on a new student project portal in the coming months.

This course is a step towards granting academic credit for the countless contributions students have made to our campus' footprint over the last decade. Students have been an active part of Campus Sustainability efforts at UWinnipeg since at least 2003. That year, a group of students formed SUNSET (Sustainable University Now, Sustainable Earth Tomorrow). Between 2003 and 2005, SUNSET advocated for the establishment of a campus sustainability effort. After the announcement of a Sustainability Task Force in 2005, SUNSET representatives (until 2009), as well as students from EcoPIA (formerly EcoMAFIA), the Geography and Environmental Studies Students' Association, the UWSA, and – more recently – the BikeLab have been active participants on the Campus Sustainability Council and its various working groups. Students led the charge in conceiving of and building the BikeLab and in launching the EcoGrant, which provides funds for sustainability-related projects on campus. They have also led or worked closely with the Campus Sustainability Office on several other efforts, including the University's community garden, the University's affiliation with the Workers' Rights Consortium, and UWinnipeg's annual sustainability festival GrassRoutes. Students from EcoPIA have also been important contributors to the team of student waste educators on campus. In these and many more ways, students gain experiences that add to their experiences on campus, help define their future success, and contribute to the University's progress on sustainability.

This year, UWinnipeg became one of the first universities in the country to mandate that all students have baseline knowledge about Indigenous people and culture. Approved in November 2015 by the University's Senate, the new Indigenous Course Requirement (ICR) makes Indigenous learning part of the undergraduate degree requirements for all new UWinnipeg students, beginning in the fall of 2016. This initiative has been student led. The University of Winnipeg Students Association came forward with a proposal for an Indigenous Course requirement. This proposal has been the site of informal and formal discussion and debate at The University of Winnipeg among students, faculty and staff, and community members. These discussions helped to formulate the criteria being used to assess courses. This decision exemplifies the University's leadership in responding to the recommendations made in the final report of the Truth and Reconciliation Commission (TRC), while its spirit epitomizes the diversity-minded approach of the UWinnipeg community and its commitment to leading Indigenous inclusion.

3.7 Research

Research related to sustainability also continues to be a substantial strength at UWinnipeg. Over the past 5 years, UW has made strategic investments in facilities and people to develop its reputation as a global centre for excellence in research on the human impacts of resource development in a changing climate. Our Strategic Research Plan highlights 9 research thrusts for our Canada Foundation for Innovation (CFI)

institutional plan and our 6 Canada Research Chairs (CRCs). Approximately twenty percent of annual internal research funds have been dedicated to advancing or incubating projects that reflect sustainability-related themes.

Over the last decade, UW has invested nearly $300M in state-of-the-art research facilities. In 2011 the Richardson College for the Environment & Science Complex (RCFE) opened its doors. This 150,000 square foot, $66.8M LEED Gold facility includes more than 30 research and teaching labs, including the Thomas Sill Analytical Laboratory for Water Research Technology (STALWART), Campus Wildlife Laboratory for Disease and Ecology (C-WiLDE) and the new Prairie Climate Centre are housed here. These strategic investments have already borne fruit – we have more than doubled the total external research dollars awarded to the University in the last ten years.

As a mid-sized university, we recognize that our strength lies in our ability to cultivate interdisciplinary teams that can undertake focused, problem-based research projects. Great-West Life and the Province of Manitoba recently invested $650K to make UWinnipeg the home for the new Prairie Climate Centre, a joint venture between the International Institute for Sustainable Development (IISD) and our University. The PCC provides stakeholders in Manitoba and across the Prairies up-to-date and high quality decision making data and tools related to climate mitigation and adaptation.

Image 7 *The University celebrates the launch of the Prairie Climate Center.*

Another new project that launched this year was a multi-year teaching and research partnership with Gjovik University College in Norway involving several members of the UWinnipeg faculty. Through this project, a number of student and faculty exchanges will be taking place along with a summer institute.

A full list of research projects related to sustainability can be found in Appendix D.

3.8 Governance, Finance & Administration

Over the month of March and into early April, The University of Winnipeg engaged in a campus-wide conversation about fossil fuel divestment. This conversation was part of a risk assessment process that was launched in response to student advocacy on the issue. It invited students, faculty, staff, Board members, and members of our wider community to consider the issue of fossil fuel divestment from a variety of perspectives. The UWinnipeg process was a marked departure from other approaches to the divestment question on university campuses in Canada. It was inclusive and offered a forum for nuanced conversation about this complex issue.

All members of the University community were invited to hear the same expert advice that was offered to the oversight committee conducting the risk assessment. The engagement process also invited all members of the Winnipeg community to offer comment in writing or share their views at one of the three engagement events.

The process was designed to ensure that people holding strong opinions in support of divestment, strong opinions against divestment, and opinions resting in other places on the spectrum of views were provided an opportunity to make their arguments and be heard. It also allowed for a broader discussion about climate change and the University's role in addressing this global challenge. A summary of the process and other related documents can be found at http://uwinnipeg.ca/divestment/. A recommendation from the Board on the issue is expected early in June 2016. At the end of this fiscal year, this process was still underway. The question of University investments is expected to continue to receive attention through FY2016.

Last fall, the University of Winnipeg released its new strategic directions. Five key planks will shape University priorities and action moving forward: (1) Academic Excellence and Renewal, (2) Student Experience and Success, (3) Research Excellence, Knowledge Mobilization and Impact, (4) Indigenization and (5) Financial and Institutional Resilience. The University's commitment to sustainability was re-affirmed in this document as a core element of Institutional Resilience.

Image 8 *Divestment engagement events were designed to include concerned students, staff, and community members.*

The University's new Strategic Directions explains:

> *Sustainability is a lens applied to all practices and processes to guide University activities (academic and operational) increasingly towards supporting the revitalization and resilience of ecosystems and communities. We have done a great deal to reduce our environmental impact, but more can be done to integrate the concept of sustainability into our institutional culture and our academic mission. We have played a leadership role in demonstrating that sustainability is not only possible, but a strategic advantage. We will continue reducing our impact and offer learning opportunities for our students as we ourselves are learning and leading within the broader community.*

The purpose of a new institutional sustainability strategy is to outline the ways the sustainability lens articulated above can be applied to, and support, the key planks driving University efforts. In developing and implementing this strategy we will put our best efforts towards, and seek guidance on, reflecting Indigenous languages and teachings on sustainability, recognizing what territories the resources we use come from, considering the relationships our operations enter us into, and ensuring that we reflect relevant recommendations from the Truth and Reconciliation Commission.

4.0 Challenges

Waste Data: Achieving reasonable understanding of waste generation and diversion rates remains elusive. Some steps were taken this year to attempt to achieve some improvements in data quality; however, the University does not foresee receiving accurate waste data from its waste hauler for the foreseeable future. It is likely time to begin to explore ways that the University might weigh its own waste.

Strategic Plan & Policy Review: Various efforts related to reviewing sustainability governance have struggled to take hold over the past two years. These challenges have been driven by the reality of competing engagement processes and by the need to establish the University's strategic directions before moving on to reviewing sustainability issues more specifically. Overall, the delay will enable a much stronger approach to sustainability governance; however, there are lessons to be learned with respect to sequencing of different institutional policy review and planning processes.

5.0 Conclusion

Over the course of this reporting period, major shifts took place in international, national, provincial and institutional climate action. A newly elected Canadian Government played a key role at COP21 in Paris to include in the Paris Agreement a global aspiration to pursue efforts to limit global warming to no more than 1.5 degrees above pre-industrial levels. The international community also agreed to achieve net zero emissions this century. This commitment has been widely recognized as having major implications for what will drive global economic development in the years ahead.

After Paris, Canadian Premiers met in Vancouver and wrote the Vancouver Declaration, marking the beginning of a new inter-jurisdictional process aimed at developing a Canadian climate strategy. The declaration recognized the importance of increasing the level of ambition to drive greater GHG emission reductions. A new government in Manitoba was elected just after this reporting period ended and we await signals from them about what role Manitoba will play in this new national process.

In the meantime, UWinnipeg has re-affirmed its commitment to being a climate leader while also recognizing that this role can and should not be limited to reducing institutional emissions. How this commitment will respond to developments on the international, national and provincial stage will be determined in the year ahead.

Over the last decade, substantial progress has been made in reducing the University's environmental footprint. As the University embarks on its next decade, a robust conversation about what we mean by sustainability and what role we can play as an institution will help set a renewed tone of hope, leadership, and vision.

Appendix A: FY2016 Action Plans

A.1 Air, Energy & Water

Target: Reduce GHG emissions to 6% below 1990 levels by 2012, and to 10% below 1990 levels by 2016.

Target: Reduce energy intensity of operations by 18% relative to 2009 baseline by 2016.

Target: Reduce water consumption.

Action	Champion	Other Key Supporters
Identify opportunities for communication, outreach and data management from the implementation of smart meter technology and portfolio manager software.	Building Systems Manager & Sustainability Officer	Executive Directors, Facilities; TSC,CAT; Director, Campus Sustainability Office.
Ensure results of "shadow" LEED assessment of facilities are incorporated into revised sustainability policies and strategy.	Director, Campus Sustainability Office	Director, Physical Plant; Building Systems Manager, Executive Director, Facilities
Continue with investigation into opportunities for renewable energy projects	Building Systems Manager; Director, Campus Sustainability Office	VP, Financev & Admin; VP HR, Audit&Sustainability

A.2 Waste, Grounds, Cleaning

Target: Achieve 65% waste diversion by 2016; University demonstrates best practices in cleaning and grounds keeping.

Action	Champion	Other Key Supporters
Monitor implementation of changes to waste hauling contract to ensure progress on data quality and monitoring issues	Director, Physical Plant; Director, Campus Sustainability Office	Bee Clean, Sustainability Officer
Review outcome on office bin pilot and implement changes to other office areas as determined by outcomes of pilot	Sustainability Officer	Director, Physical Plant; Director, Campus Sustainability Office
Complete assessment of non Eco-Logo cleaning products to identify any opportunities for switches to Eco-Logo products	Sustainability Officer	Bee Clean, Director, Physical Plant; Director, Campus Sustainability Office.

A.3 Procurement

Target: University strives for better practices in sustainable procurement (& finance).

Action	Champion	Other Key Supporters
Ensure results of student research projects from FY2015 are incorporated into revised sustainability policies and strategy	Director, Campus Sustainability Office	Director, Purchasing Services
Maintain WRC reporting process and monitor contract rollovers to continue to incorporate WRC language as possible	Sustainability Officer	UWinnipeg Bookstore; Athletics

A.4 Transportation

Target: University strives for better practices in sustainable transportation

Action	Champion	Other Key Supporters
Ensure results of Transportation Working Group are included in the sustainability policy an strategy review	Director, Campus Sustainability Office	Coordinator of Parking Services, Director Physical Plant; Executive Director of Facilities
Ensure travel data is reported in the new finance system	Sustainability Officer	Director, Campus Sustainability Office; VP Finance & Admin (Executive Sponsor)

A.5 Governance, Finance & Administration

Target: Sustainability Planning and governance reflect better practices in campus sustainability and is integrated into University planning and governance procedures and processes; University provides tools and resources for greening university administrative systems.

Action	Champion	Other Key Supporters
Undertake a sustainability policy, target, indicator, and strategy review.	Director, Campus Sustainability Office	Sr. Executive Team

A.6 Academics & Engagement

Target: Active culture of sustainability teaching, learning, research, and work.

Action	Champion	Other Key Supporters
Identify options for sinks for staff and students to enable them to rinse their dishes on campus	Sustainability Officer	Director, Physical Plant
Identify next steps for implementation of sustainability elements of the Integrated Academic and Research Plan	Academic Working Group on Sustainability	Director, Campus Sustainability
Maintain "Campus Sustainability" student project portal	Sustainability Officer	Director, Campus Sustainability Officer
Roll out revised Green Office program	Sustainability Officer	Health & Safety Office; Director, Campus Sustainability Office
Complete Senate submission for the Sustainability Management Certificate at PACE and ensure high- quality instructors are identified.	Director, Campus Sustainability Office	Executive Director, PACE
Deliver sustainability competency training	Director, Campus Sustainability Office	VP, HR, Audit & Sustainability

Appendix B: Results of FY2015 Action Plans

B.1 Air, Energy & Water

Target: Reduce GHG emissions to 6% below 1990 levels by 2012, and to 10% below 1990 levels by 2016.
Target: Reduce energy intensity of operations by 18% relative to 2009 baseline by 2016.
Target: Reduce water consumption.

Action	Status
Continuation of Smart/Pulse Meter Installation for Electrical, Natural Gas and Water	Installation of all smart meters on campus majority complete.
Finish Lockhart ventilation project saving measures undertaken this year.	Lockhart ventilation project complete. See body of report for details on other energy
Complete energy dashboard rollout underway, as is work towards implementation for main campus.	Dashboard operational in RecPlex and RCFE. Enhancements related to interactivity are
Installation of LED tube and bulb lighting in older building corridors/common areas	LED lighting installed in the library, main corridors of Centennial, Ashdown, Bryce, Manitoba and Lockhart Halls, Riddell cafeteria, and several other common areas throughout campus. See body of report for details on other energy saving measures undertaken this year.
Complete integration of R25 College net scheduling software across campus (Currently only deployed in RecPlex)	Integration complete.
Complete "shadow" assessment of facilities for LEED O&M	Shadow assessment complete and report on file in the CSO, to be used to inform and support the new UWinnipeg Sustainability Strategy.

Continue with investigation into opportunities for renewable energy projects	Feasibility studies underway for biomass, geothermal, solar thermal and solar PV retrofits to existing buildings. Results expected by the end of summer 2016.
Investigate feasibility of a solar powered charging station to be placed in the quad by the bike lab	Project put on hold due to extensive construction in the quad area for Leatherdale Hall
Continue to implement server virtualization	Effort ongoing.
Report on energy/GHG performance of buildings in January to flag any potential challenges in meeting current targets.	Report was not complete in January due to challenges with energy data management. FY2015 Performance results were ready to be reported to the Board in June 2016.

B.2 Waste, Grounds, Cleaning

Target: Achieve 65% waste diversion by 2016; University demonstrates best practices in cleaning and grounds keeping.

Action	Status
Ensure data quality challenges are addresses as part of RFP process for waste/recycling hauling services	Existing hauling contract rolled over. Data challenged persist; however some steps were taken to achieve some improvements in a letter of understanding. These steps include weighing of both recycling and waste with well calibrated scales 3 times per year, annual reviews of bin numbers and pickup frequency, and daily trend analysis.
Undertake office-level waste bin pilot project	Bin pilot being undertaken in July, with final results communicated by the end of August.
Complete an assessment of non Eco-Logo cleaning products to identify any opportunities for switches to Eco-Logo products	Many products were replaced with water-based cleaning solutions, reducing the overall volume of cleaning products used. Product reviews ongoing.
Explore feasibility of a second phase of bin infrastructure renewal	New bins were purchased and installed throughout the Rice Building and AnX, introducing compost to all UWinnipeg occupied spaces in the building. A third phase of work will be explored once the office bin pilot is complete.
Complete waste audit	Audit completed. Results reported in body of report.
Attempt ELP/Bee Clean English Language course pilot in fall	Courses did not run due to low number of people signing up to take them.
Ensure that a Garden Bed/Grounds Policy is developed as part of the policy review process	Rolled over to FY2016.
Find an effective ecologically safe university acceptable pest and weed control.	Efforts ongoing. No new product or method was used this year.
Research opportunities for stormwater management	Three students undertook projects related to stormwater this year. Results from all three projects will inform the next Sustainability Strategy.

B.3 Procurement

Target: University strives for better practices in sustainable procurement (& finance).

Action	Status
When purchasing by way of RFX - ask for documentation on sustainable initiatives from vendors on products, practices.	Bidders are asked to describe their organization's environmental practices and qualifications such as, but not limited to ISO 14001 registration, certified Environmental Management System, Eco-label certification, waste management, recycling and composting practices, sponsorship of environmental organizations, etc.
Pursue research partnership with Business to establish meaningful and practical procurement indicators.	A student in the faculty of Business and Economics conducted a research project under the supervision of Dr. Bruno Silvestre that provided insight into procurement process and some research on key performance indicators. Results will be used to inform the new sustainability strategy.
Secure senior approval of Code of conduct for Workers' Rights Consortium affiliation and file first report with the Workers' Rights Consortium.	Senior approval secured. First report filed.
Ensure new contract language for garments reflects WRC commitments.	Letters sent to all current vendors advising of UWinnipeg membership. Language will be incorporated into contracts as they are renewed.

B.4 Transportation

Target: University strives for better practices in sustainable transportation

Action	Status
Convene a Transportation Working Group to review results of the FY2014 transportation survey and develop recommendations for next steps in transportation efforts.	Working group met 3 times over the year to identify problem areas on campus and identify potential infrastructure and programs that could serve the University's sustainable transportation goals.
Ensure internal administrative issues and agreements are in place to support rollout of UPass.	U Pass set to be implemented for the 2016-17 academic year.
Invest in adequate secure bike parking	Bike cage installed on West Campus and new cycling parking maps installed throughout campus.
Ensure travel data is collected in and reported on by the new finance system	Done.

B.4 Governance, Finance & Administration

Target: Sustainability Planning and governance reflect better practices in campus sustainability and is integrated into University planning and governance procedures and processes; University provides tools and resources for greening university administrative systems.

Action	Status
Undertake a sustainability policy, target, indicator, and strategy review.	Delayed to FY2016 to allow for engagement processes on the Integrated Academic and Research Plan and divestment. Board has asked for a new policy set and strategy by June 2017.
Provide SRI literacy training to Pension Board of Trustees	3 experts presented an hour-lon panel to a Board meeting on climate proofing portfolios.
List data (activity or products) we need to collect, measure and track in order to improve sustainability reporting [and whether the new finance system is the vehicle to collect it].	Key elements of this work were rolled into the LEED O&M review. Further steps will be required, and will be considered through the development of the new sustainability strategy. NA
Implement Degree Audit, Student planning. Provide online self-service to students	Degree Audit rolled out with significant uptake.
Implement changes to Undergraduate Transcript to facilitate function and save paper.	Implemented.
Identify options for sinks for staff and students to enable them to rinse their dishes on campus.	Option for use of sink in Riddell Hall explored but deemed not feasible. Issue remains unresolved.

B.6 Academics & Engagement

Target: Active culture of sustainability teaching, learning, research, and work.

Action	Status
Develop recommendations based on final curriculum inventory research report conducted by Academic Working Group in FY2014	Recommendations compiled and provided to the committee charged with writing the Integrated Academic and Research Plan. The Plan includes several commitments related to sustainability.
Run new course "Campus Sustainability" in the fall of 2015	Course ran successfully. Most projects will be uploaded to a student project portal over the summer.
Complete Senate submission for the Sustainability Management Certificate at PACE and ensure high-quality instructors are identified.	Senate submission was to take place in June 2016 but was delayed due to staffing changes at PACE. Effort has been carried over
Establish a "Campus Sustainability" student project portal on the CSO website.	Delayed – will be implemented over summer 2016.
Re-energize Green Office program.	Substantial progress made for a new program to be delivered in partnership with Health & Safety. Rollout planned for fall 2016.
Develop outreach links with Campus Housing and Student Life	Setbacks this year. Efforts will be re-visited for the 2016-2017 year.
Develop sustainability leadership competency training	Training drafted and will be implemented in FY2016

Appendix C: Committee Members

Campus sustainability Council

Alana Lajoie-O'Malley	Director, CSO (chair)
Allan Amundsen	Director, Purchasing Services
Alexander Wieb	Sustainability Officer, CSO
Ian Vickers	Chief Operating Officer, Diversity Foods
Justis Mathieu Henault	Representative, Geography & Environmental Studies Students' Association
Kimberly Benoit	Executive Director, Technology Solutions Centre
Kyle MacDonald	Controls Technician, Physical Plant
Laurel Repski	VP Human Resources, Audit & Sustainability
Len Cann	Executive Director, Facilities
Lydia Warkentin	Manager of Campus Living (Food Services), UWCRC
Bill Buhay	Faculty, Deparment of Geography
Michael Emslie	AVP Finance & Administration
Mike Thul	Director, Physical Plant
Maureen Hanlon	Coordinator, EcoPIA

Fair Trade Committee

Lydia Warkentin	Manager of Campus Living (Food Services)
Allan Amundsen	Director, Purchasing Services
Doran Reid	Director, Athletics
Charmaine Trainer	Campus Bookstore
Lloyd Kornelsen	Faculty Member, Education
Alana Lajoie-O'Malley	Director, CSO (Committee Chair)
Rachel Dunsmore	Student
Alexander Wieb	Sustainability Officer, CSO

Academic Working Group on Sustainability

Devin Latimer	Faculty Member, Chemistry
Alan Diduck	Faculty Member, Environmental Studies
Royden Loewen	Faculty Member, History
Lee Anne Block	Faculty Member, Education
Andrew Park	Faculty Member, Biology
Alexander Wieb	Sustainability Officer, CSO
Alana Lajoie-O'Malley	Director, CSO

Transportation Working Group

Benjamin Simcoe	Academic Advising
Gina Sylvestre	Geography
Leanne Shumka	Awards & Financial Aid
Brianne Selman	Library
Malcolm Bird	Politics
Maureen Hanlon	EcoPIA
Janelle Laing	Geography and Environmental Studies Students' Association
Alexander Wieb	Sustainability Officer, CSO
Alana Lajoie-O'Malley	Director, CSO

Appendix D: Active Sustainability Related Research Projects for the 2015-2016 Academic Year

First Name	Last Name	Department	Project Title
Athar	Ata	Chemistry	Phytochemical Studies on Medicinally Important Plants
Germán	Avila-Sakar	Biology	The influence of soil fertility on tomato tolerance to whitefly
Simon	Berge	Business and Administration	Food Co-operative Financing: Challenges and Opportunities
William	Buhay	Geography	Video Documentary on Dead Horse Creek
Ryan	Bullock	Environmental Studies	Aboriginal Capacity Building Achievements for Sustainable Natural Resource Development
Ryan	Bullock	Environmental Studies	Northern Governance Innovation and Development for Socially Resilient Boreal Communities
Wenbiao	Cai	Economics	Misallocation in Agriculture: Measurement and Policy Implications Using Farm-Level Panel Data
Nora	Casson	Geography	Science Workshop on Water Quality and Ecosystem Health of Lake Manitoba
Nora	Casson	Geography	Tracing the source of phosphorus using optical properties of dissolved organic carbon
Jaime	Cidro	Indigenous Studies	Food Security to Food Sovereignty: Relocation Processes Impacting Traditional Food Consumption for Indigenous Peoples in Canada
Linda	Deriviere	Politics	Beyond Access to Inclusion: Transforming the University Experience for Indigenous Students
Alan	Diduck	Environmental Studies	The Effects of Participatory Stakeholder Processes on Social Learning and Adaptive Capacity in the Canadian Forest Sector
Lorena	Fontaine	Indigenous Studies	Mite Achimowin (Heart Talk) First Nations Women in Winnipeg and Opaskwayak Cree Nations Expressions of Heart Health
Sara	Good	Biology	Expression of INSL5 in mouse thymus
Paul	Holloway	Biology	Biocontrol of Spruce Budworm
Paul	Holloway	Biology	The Use of Manitoba Peas and Beans as a Nitrogen Nutrient in Biofuel Fermentations, Medical Agent Fermentations and New Bioeconomy Fermentations
Judith	Huebner	Biology	The effect of polyethylene microbeads on the survival, size and reproduction of Daphnia magna
Jess	Klassen	Faculty of Graduate Studies	A Three-Year Longitudinal Analysis of the Impact of Social Housing with Community Supports on Immigrants and Refugees in Winnipeg

Darshani	Kumaragamage	Environmental Studies	Evaluating the Efficacy of a Novel Urease Inhibitor in Reducing Ammonia Volatilization Losses from Urea-based N Fertilizer Applied to Soils
Julia	Lawler	Faculty of Graduate Studies	Assessing Control and Benefits through Manitoba's Community Timber Allocations
Susan	Lingle	Biology	Variation in Male Mating Tactics in Mule Deer and White-Tailed Deer
Ian	Mauro	Geography	Beyond Climate Film
Ian	Mauro	Geography	The Meechim Farm Documentary Film Project
Ian	Mauro	Geography	Prairie Climate Centre
Ian	Mauro	Geography	Journey of Awakening video
Ian	Mauro	Geography	Climate Vision 2020: Preparing Communities for Climate Change in Canada
Ian	Mauro	Geography	Ocean Canada: preparing Canada's coasts for the future
Ian	Mauro	Geography	A Good Place to Live: Transforming Public Housing in Lord Selkirk Project Documentary
Mary Jane	McCallum	History	Indigenous Histories of Tuberculosis in Manitoba, 1930-1970
Melanie	O'Gorman	Economics	The right to clean water in First Nations: The most precious gift
Melanie	O'Gorman	Economics	Implications of Inadequate Water Infrastructure in St. Theresa Point First Nation
Rafael	Otfinowski	Biology	Response of rangeland ecosystems to extreme drought
Andrew	Park	Biology	Field trials of assisted migration to foster climate-resilient forests
Eva	Pip	Biology	A survey of cyanobacterial anatoxin and BMAA in the south basin of Lake Winnipeg, Canada
Shailesh	Shukla	Indigenous Studies	Research Manuscript for Journal Research paper on Indigenous Food Security in Fisher River Cree Nations, Manitoba
Janice	Stewart	Education	Bridging Two Worlds: Culturally Responsive Career Development Programs and Services to Meet the Needs of Newcomer and Refugee Children in Canada
Janice	Stewart	Education	Refugee Student Integration: Building Welcoming Communities and Schools for a Sustainable Future
Jacques	Tardif	Biology	Black spruce growth in peatbogs from southeastern Manitoba, blue rings in bristlecone pine from the southwest United States and frost rings in Chilean pine, Argentina.
Richard	Westwood	Environmental Studies	Assessing the movement of adult mosquitoes from rural areas into urban mosquito control zones in Winnipeg, Manitoba
Craig	Willis	Biology	Individuals, energetics and infectious disease
Craig	Willis	Biology	Implications of Carryover Effects from White-Nose Syndrome on Reproduction and Population Viability
Craig	Willis	Biology	Using citizen science for monitoring and management of endangered bats in Ontario
Charles	Wong	Environmental Studies/Chemistry	Nutrient, wastewater contaminant and toxicity reduction

Appendix E: Timeline of Sustainability at UWinnipeg 2005-2015

2005: After ongoing advocacy by students and faculty, President Lloyd Axworthy commits the university to reducing is greenhouse gas emissions to 6% below 1990 emissions to reflect Canada's commitments under the Kyoto protocol and commits the university to establishing a formal sustainability management system. A multi-stakeholder task force including students, faculty and staff is established to begin work on meeting these commitments.

2006: UWinnipeg's Campus Sustainability Policy passes and the University publishes its first annual sustainability performance report.

2007: Pre-Consumer composting program launches.

2008: One of Manitoba's first institutional post-consumer composting programs launches.

2008: Introduction of double-sided printing as default on all copiers and printers on campus.

2008: Introduction of phosphate-free detergents and environmentally friendly cleaning products for use on campus; signed on to the Lake Friendly Initiative in 2010.

2009: UWinnipeg becomes the first university in Canada to ban the sale of bottled water, an initiative led by students that spread quickly across the country.

2009-2011: Water retrofit of university washrooms to reduce water consumption. Targeted pre- and post- retrofit metering of washrooms suggests a cumulative saving in excess of one million gallons of water a year. Doug Foster, University plumber, is awarded the Campus Sustainability Recognition Award in recognition of this achievement.

2011: UWSA BikeLab opens. 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 grow between the Lab, EcoKids on Campus and the Model School. In 2014, PSA Studios is awarded a national design award for this building.

2011: Complete installation of a hybrid heating system that enables the University to replace higher-emitting natural gas with lower-emitting hydroelectricity during off-peak times when electricity demand in low.

2012-2013: $2 million energy retrofit to main campus buildings to reduce emissions from these buildings and to offset the ongoing GHG impact of an expanded campus. The project establishes a process of ongoing building commissioning that enables ongoing enhancements to building energy performance, as evidence in emissions reductions and efficiency improvements in future years.

2012: The University marks substantial greenhouse gas emission reductions due to the combined impact of its hybrid heating system and energy retrofit: a 16% reduction in GHG emissions and an 18.6% reduction in natural gas consumption over the fiscal year. While GHG emissions were not 6% below 1990 emission levels by the end of the fiscal year, the final stages of the energy retrofit efforts on campus were completed over the summer of 2013. With the efforts complete, the University's mechanical systems are operating to a projected utility consumption that is lower than that required to meet the Kyoto target.

2012: Late in the year, the University enters into a partnership with Peg City Car Co-op. A silver Honda Fit hatchback is now parked behind RCFE. A carshare allows for access to a car on an as-needed basis while reducing the heavy costs associated with car ownership. Members of the co-op pay for usage on an hourly and per kilometer rate. Carsharing is a practical alternative that helps university staff meet their transportation needs off campus while allowing them to commute by transit, cycling, and walking.

2012: The University switches to 100% recycled content for letterhead and business cards, while also exceeding its goal to transition all office paper to 50% post-consumer content. Office paper is now FSC certified, 100% post-consumer fibre, EcoLogo certified, processed chlorine free, and manufactured using biogas energy. Alongside reductions in chemical use and waste, this represents a saving of approximately 1389 trees per year. Leslie Uhryniuk, Coordinator of Printing & Parking Services was awarded the 2013 Campus Sustainability Recognition Award for her efforts.

2013: UWinnipeg eliminates the use of cosmetic pesticides and herbicides in campus landscaping practices.

2013: UWinnipeg achieves Climate Registered™ status by measuring its carbon footprint according to The Climate Registry's best-in-class program, having it third party verified, and reporting the data on the registry's website.

2013: UWinnipeg awarded a Manitoba Excellence in Sustainable Development award in recognition of its climate change action.

2015: New Strategic Directions and Integrated Academic and Research Plan re-affirm UWinnipeg's commitment to sustainability

2015: Through its ongoing energy and emission reduction efforts, greenhouse gas emissions in FY2015 decrease by approximately 24% over FY2014. This result means that between 1990 and 2015, campus wide emissions decreased by approximately 32% despite a 38% increase in owned space. The University has substantially exceeded its target of reducing absolute emissions 10% below 1990 levels. Energy intensity of campus operations decreased by just over 14% over last year, and by 27% compared to 2009. The University has surpassed its energy efficiency target of achieving an 18% reduction in energy use per square meter of owned space compared to 2009 energy intensity by FY2016.

2015: Launch of the Prairie Climate Centre