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IISD REPORT

Education for Sustainable Development at Manitoba Colleges and Universities

Results from an institution-wide survey and president interviews across Manitoba's 11 institutions of higher education

Gabriel A. Huppé
Heather Creech
Carolee Buckler

April 2013

International Institute for Sustainable Development

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Head Office
161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4
Tel: +1 (204) 958-7700 | Fax: +1 (204) 958-7710 | Website: www.iisd.org

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Section I. Introduction and Summary

Sustainable development (SD) is commonly defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Education for sustainable development (ESD) entails a reorientation of education toward the goal of preparing learners to become informed and engaged citizens in moving to a future of sustainable development. The aim of ESD is to help people develop the attitudes, skills and knowledge to make informed decisions for the benefit of themselves and others, now and in the future, and to act upon these decisions (United Nations Educational, Scientific, and Cultural Organization [UNESCO], n.d.). It calls for transdisciplinary understanding of the intersection of economic prosperity, social equity and environmental protection, the three pillars of sustainability. The green economy is defined as one in which value and growth are maximized across the whole economy, while natural assets are managed sustainably. It would be supported and enabled by a thriving low-carbon and environmental goods and a service sector, and it requires a workforce with the right skills, which ESD can help provide. In its new *Green Plan*, the Province of Manitoba has recognized the role of education in instilling green skills, knowledge and values within Manitoba's existing and future workforce (Government of Manitoba, 2012).

In recognition of the importance of ESD, the United Nations General Assembly declared 2005–2014 the UN Decade of Education for Sustainable Development (DESD). In addition to economic prosperity, social equity and environmental protection, it considers a fourth pillar—cultural sensitivity—as a cross cutting theme (UNESCO, 2007, p. 12). ESD touches every aspect of education, including planning, policy development, program implementation, finance, curricula, research, teaching, learning, assessment, administration, operations and facilities. In response to the UN DESD, Manitoba's Department of Education has made a commitment to reorient the formal K–12 education system towards sustainability. As an outcome of this commitment, students in the K–12 system are being introduced to the knowledge, values and skills needed to become responsible citizens, building a more sustainable world.

Manitoba Education asked the International Institute for Sustainable Development (IISD) to conduct a study of how ESD concepts and practices are being pursued within colleges and universities in Manitoba, in order to further ESD implementation at the K–12 level. The aim is to gain a better understanding of what opportunities for education for sustainability are available within the province in post-secondary institutions. The study also explores whether Manitoba campuses reflect a "whole school" learning environment, in which course content is reflected in the daily operations of the campuses around them (as per the approaches now being taken in several K–12 school divisions across the province). There are excellent sustainability initiatives present in Manitoba's colleges and universities. However, it would appear that, to date, a comprehensive view of ESD implementation within universities and colleges in Manitoba has not been compiled.

This study has two main components—high-level interviews with the Presidents of colleges and universities in Manitoba, and a survey of those institutions, completed by those working on implementation of campus sustainability policy and practice. The Manitoba post-secondary landscape is composed of publicly funded institutions (four universities, two colleges and one university college) and private religious institutions which receive some government funding (one university, two university colleges and one Bible college). Of these 11 institutions, 10 participated in the interview process (see Section IV) and 9 completed the survey (See Section V).

POST-SECONDARY EDUCATION INSTITUTIONS IN MANITOBA

Assiniboine Community College
Booth University College
Brandon University
Canadian Mennonite University
Providence University College
Red River College
Steinbach Bible College
University College of the North
Université de Saint-Boniface
University of Manitoba
University of Winnipeg

It should be noted that the 11 institutions vary widely with respect to size, mandates, and governance. Presidential interviews revealed a range of motivations for undertaking ESD. Depending on institutional characteristics, a college or university's orientation towards ESD was motivated by one or more of the following:

1. Community embeddedness (i.e., institutions whose success is strongly linked to their community).
2. Foundation principles and values (i.e., faith-based institutions).
3. Industry-based focus (i.e., colleges committed to meeting industry demand for green skills).
4. Strategic innovation (i.e., educational institutions that use ESD to direct, modulate and accelerate organizational development in desired directions).
5. Responsiveness to stakeholders (i.e., institutions that develop ESD strategies according to student and faculty interest).

While the motivations may vary, and capacity to implement may vary based on institutional size and resources, it was evident that post-secondary institutions in Manitoba are engaged in many promising initiatives. The majority of the institutions have:

- A multistakeholder environmental/sustainability task force, committee or council (composed of staff, students and professors, with senior administration participation or support).
- A waste-reduction plan.
- An environmentally friendly sustainable-purchasing strategy.
- A sustainable-foods strategy.
- Implemented significant new energy management programs to curb CO_2 and other greenhouse gas emissions in the past three years. Several have geothermal and other renewable energy installations.
- A portion of their new-student orientation specifically devoted to sustainability.
- An active student-run organization devoted to sustainability efforts on campus.

Also noteworthy:

- 33 per cent of the institutions have fleet vehicles on campus that use alternative energy sources or fuels (e.g., electric, hybrid electric, natural gas, propane, biodiesel, biofuels, etc.).
- 89 per cent of the institutions have implemented efficiency standards for new buildings or retrofits of existing buildings.
- 44 per cent of the institutions organize sustainability challenges/competitions for their campus and/or with other colleges or universities.
- 44 per cent of the institutions have incorporated sustainability into experiential learning service or other volunteer programs, while 33 per cent plan to develop.
- Most sustainability-related courses identified in the survey data provided are offered in the Social Sciences, Humanities, and Education disciplines. A number of the institutions do offer a range of environmental science, environmental technology and engineering courses: it is unclear why reporting tended to emphasize the social sciences, humanities and education disciplines.

- 22 per cent of institutions offer incentives to assist faculty to expand sustainability course offerings.
- 22 per cent of the institutions have a program to encourage students to undertake sustainability research.
- 22 per cent of the institutions give positive recognition to sustainability research during faculty promotion and tenure decision.

Barriers and challenges to ESD, as identified by the presidents and survey respondents, include financial constraints, the lack of dedicated personnel, the push for academic freedom, the political and legal environment, the need for more mechanisms for knowledge sharing and networking and the lack of shared understanding of nomenclature around terms such as "Education for Sustainable Development" and "Green Economy."

This study made apparent the fact that colleges and universities are doing more on ESD than anticipated; this information clearly warrants sharing across the institutions, as well as with government and industry stakeholders.

However, these institutions also know that they have more work to do, and are responding in various ways, such as the preparation of new sustainability plans, adopting new standards for sustainability reporting, and/or advancing new programs and course offerings. For Manitoba's colleges and universities to contribute to the objectives of the Province of Manitoba's new Green Plan, this increased attention to ESD in curriculum, research and operations is necessary and should be continued. For Manitoba Education, more work will be needed to plan and support the transition from K–12 toward these growing opportunities at tertiary institutions. In the view of IISD, Manitoba has the potential to become one of the best places in Canada to learn about sustainability in action.

In this paper, we describe ESD in its broader global and national context in Section I, and then outline the ESD landscape in Manitoba education in Section II. Section III describes our research approach. Section IV presents the results of the President interviews and Section V presents the results of our survey. The final section provides observations and potential opportunities.

Section II. An Overview of Education for Sustainable Development in the Global, National, and Provincial Context

Global Context

Education for sustainable development featured prominently in Agenda 21, an action plan of the United Nations that was adopted at the United Nations Conference on Environment & Development Plenary in Rio de Janeiro, on June 14, 1992, where 178 governments voted to adopt the program. It was said to be an agenda for the 21st Century, hence its name, Agenda 21. It reflects a high-level global consensus and political commitment to development and environment cooperation. The successful implementation of the Agenda is first and foremost the responsibility of governments, meaning that national strategies, plans, policies and processes are crucial components for implementation on a global scale. The commitment to education for sustainable development is seen as a "means of implementing" the Agenda, and is described as follows:

> Education, raising of public awareness and training are linked to virtually all areas in Agenda 21, and even more closely to the ones on meeting basic needs, capacity-building, data and information, science, and the role of major groups. (United Nations, 1992, 36.1)

In 2002, at the World Summit on Sustainable Development, the UN affirmed its commitment to "full implementation" of Agenda 21. In this vein, it committed to the following programs of the Agenda:

> A. Reorienting education towards sustainable development
>
> 36.3. (. . .) Both formal and non-formal education are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns. It is also critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, should be integrated in all disciplines, and should employ formal and non-formal methods and effective means of communication.
>
> B. Increase public awareness
>
> 36.8. There is still a considerable lack of awareness of the interrelated nature of all human activities and the environment, due to inaccurate or insufficient information. Developing countries in particular lack relevant technologies and expertise. There is a need to increase public sensitivity to environment and development problems and involvement in their solutions and foster a sense of personal environmental responsibility and greater motivation and commitment towards sustainable development.
>
> C. Promote training
>
> 36.12. Training is one of the most important tools to develop human resources and facilitate the transition to a more sustainable world. It should have a job-specific focus, aimed at filling gaps in knowledge and skill that would help individuals find employment and be involved in environmental and development work. At the same time, training programmes should promote a greater awareness of environment and development issues as a two-way learning process.

In recognition of the importance of ESD, the United Nations declared 2005–2014 the Decade of Education for Sustainable Development (DESD). The UNDESD seeks to "integrate the principles, values, and practices of sustainable development into all aspects of education and learning" in order to help "create a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations" (UNESCO Bangkok, n.d.). UNESCO's International Implementation Scheme for the Decade outlines the following objectives: facilitate network linkages and interaction among stakeholders in ESD; foster increased teaching and learning in ESD; help countries make progress towards Millennium Development Goals through ESD efforts; and, provide countries with new opportunities to incorporate ESD into education reforms. As such, the Decade offers an opportunity to build education into national sustainable development strategies.

In 2009, UNESCO undertook a mid-term review of the Decade, involving the contribution of 97 countries from all regions of the world. What they found is that, since the local realities and manifestations of "unsustainability" are rooted in local histories and political and cultural traditions, the strategies for the development and implementation of ESD vary widely across various regions of the world. In Europe and North America, the driving force for creating structures and provisions for ESD is the Vilnius strategy, which was adopted in 2005 at the United Nations Economic Commission for Europe (UNECE) in Vilnius, Lithuania, at the High-level Meeting of and Environment and Education Ministries. The Vilnius strategy recognizes that the implementation of ESD is driven by countries' own priorities and initiatives and their specific needs and circumstances. It outlines a range of objectives underlying the regional implementation of ESD (e.g., ensuring policy support of ESD, promoting SD through all forms of learning, equipping the education sector with the competencies to engage in ESD, developing ESD tools and materials, etc.).

In 2008, at least 78 countries had a national ESD coordinating body (UNESCO Bangkok, n.d.). The level of government involved in coordinating ESD differs from country to country. In some, the responsibility lies with government ministries, while in others it has been decentralized to the regional level. According to the midterm review, globally there is a notable presence of ESD in national policy documents, the majority of which address broadening participation in ESD and re-orienting educational curricula. ESD is mainly integrated in national educational policies and curriculum statements. The Ministries of Education and Environment are primarily involved in the establishment of such policies and National Action Plans. Educational policies focusing on ESD can be divided into: 1) those that integrate ESD by connecting it to existing curriculum topics and also require an integrated or interdisciplinary approach; 2) those that create space for schools to have ESD projects and extracurricular ESD-related activities; and 3) those that leave it up to the schools themselves to prioritize and position ESD. Many countries in Europe and North America engage in interdepartmental governmental cooperation on ESD and ESD working groups or Sustainability Centres (UNESCO Bangkok, n.d.). These groups are responsible for the implementation of an ESD national strategy. It should be noted that the conservation, use and promotion of indigenous knowledge are considered integral to the strategies globally, but few countries in Europe and North America have addressed this issue. Many governments have committed to supporting the inclusion of ESD in formal education, most notably in primary and secondary education, and there has been a significant increase in interest regarding integrating ESD into vocational education, workplace learning and teacher education. Universities and colleges are more autonomous than primary and secondary schools, and much of the policy-making has tended to take place within post-secondary institutions. However, some Ministries responsible for Science and Education support national research programs focusing on ESD at these institutions.

At the university level, several meetings that took place prior to the UN Decade for Education for Sustainable Development led to a declaration signed by university leaders committing to integrating sustainability in campus,

curriculum and community activities. This first, historic, attempt to define and promote sustainability in post-secondary education was made in October 1990 with the creation of the Talloires Declaration (Appendix 1), which resulted from of a gathering of 22 university presidents and chancellors convened by Jean Mayer (President of Tufts University, 1976–1992) in Talloires, France. Attendees voiced their concerns about the state of the world and spelled out the actions that post-secondary institutions could take to help create a sustainable future. They defined the role of the university in the following way (Association of University Leaders for a Sustainable Future, 1990): "Universities educate most of the people who develop and manage society's institutions. For this reason, universities bear profound responsibilities to increase the awareness, knowledge, technologies, and tools to create an environmentally sustainable future." The declaration is included in Appendix 1 of this paper. It has been signed by over 400 college and university presidents and chancellors worldwide (see Appendix 2 for Canadian signatories). There have since been numerous other declarations on ESD in post-secondary education (see Appendix 3 for a list of declarations, and Appendix 4 for the text of the Association for Canadian Community Colleges' Pan-Canadian Declaration for Sustainability). The most recent such declaration is the Rio+20 Declaration of Higher Education Institutions, which calls upon the leaders of colleges and universities to commit to the development of sustainable practices at their institution on the occasion of the UN Conference on Sustainable Development of 2012, in Rio de Janeiro, Brazil. The declaration is included in Appendix 5. As of June 22, 2012, 257 post-secondary institutions had signed the declaration (Hirschfeld, 2012).

Rio+20 was the 2012 United Nations Conference on Sustainable Development/Earth Summit held in Rio de Janeiro, Brazil, 20 years after the original Rio 1992 Earth Summit at which countries adopted Agenda 21. It was described as an historic opportunity to define pathways to a safer, more equitable, cleaner, greener and more prosperous world for all. In the outcome document of Rio+20, "The Future We Want," there is a section on Education which states the following (United Nations Conference on Sustainable Development, 2012):

> 230. We recognize that the younger generations are the custodians of the future, as well as the need for better quality and access to education beyond the primary level. We therefore resolve to improve the capacity of our education systems to prepare people to pursue sustainable development, including through enhanced teacher training, [and the] the development of curricula around sustainability [. . .].
>
> 233. We resolve to promote education for sustainable development and to integrate sustainable development more actively into education beyond the United Nations Decade of Education for Sustainable Development.
>
> 234. We strongly encourage educational institutions to consider adopting good practices in sustainability management on their campuses and in their communities with the active participation of, inter alia, students, teachers, and local partners, and teaching sustainable development as an integrated component across disciplines.

Moreover, regional and international networks in community university engagement developed a communique during the Living Knowledge Conference in Bonn, Germany on May 14, 2012. All of the contributions from all of the post-secondary education networks came together in Rio through the People's Sustainability Treaty on Higher Education. This Treaty is one of a series of People's Treaties developed to influence Rio+20 but also to make visible commitments across various sectors beyond the Rio+20 event.[1]

[1] For more information, see http://insight.glos.ac.uk/sustainability/Education/Pages/People'sSustainabilityTreatyonHigherEducation.aspx

Several organizations have since emerged in North America, such as the College Sustainability Report Card and the Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking and Assessment Rating System. These are voluntary reporting frameworks that rate colleges and universities according to key sustainability performance indicators. In the spirit of ESD, the UN DESD and the multiple declarations on ESD in post-secondary education, these frameworks assess the "whole school" approach to ESD. According to the whole school approach, ESD addresses sustainability, not only in teaching and learning, but also in a school's operations and linkages with the wider community.

Due to various pressures from their community, institutions of post-secondary education are increasingly undertaking ESD activities and participating in voluntary reporting initiatives. The Association for the Advancement of Sustainability in Higher Education (AASHE), based in the United States, aims to facilitate institutional efforts to integrate sustainability into teaching, research, operations and public engagement. To achieve this, they are increasingly providing resources, professional development, and a support network to institutions that desire to advance sustainability. AASHE, with its many activities which include the Sustainability Tracking and Assessment Rating System, (STARS) serves as an ESD knowledge-sharing network for college and university stakeholders across North America.

National Context

In Canada, several organizations are leading the way on ESD. As David V. J. Bell reports (2009, p. 7), "even before the Earth Summit and the adoption of Agenda 21, work had begun here in Canada to evolve the concept of ESD." In 1986, the Brundtland Commission had held a series of eight public hearings in Canada. As a result, Canada established the National Task Force on the Environment and Economy (NTFEE) whose recommendations lead to the establishment of the Roundtables on the Environment and Economy (NRTEE) at the national, provincial and local levels. In 1991, NRTEE helped set up Learning for a Sustainable Future, an NGO aimed at helping promote sustainability education across the curriculum in elementary and secondary education in Canada. In 1992, the "Eco-ED" conference, organized by Chuck Hopkins in Toronto, attracted nearly 6,000 delegates from all parts of the world, including the heads of six UN agencies.

In March 2005, Canada signalled its support of the UN Decade for Education for Sustainable Development at a high-level meeting of Environment and Education Ministries in Vilnius. Gerald Farthing, Deputy Minister of Manitoba Education, led the Canadian Delegation along with Suzan Bowser, Director General of Environment Canada. The UNECE Strategy and Implementation Framework for the Decade was adopted at this meeting, and the Council of Ministers of Education of Canada (CMEC), with the help of the Canadian Commission for UNESCO, agreed to take on the task of reporting to the UN on the implementation of ESD, with Gerald Farthing serving as the CMEC lead on the project. Also in 2005, Learning for a Sustainable Future initiated a partnership with Environment Canada, Manitoba Education, Manitoba Advanced Education and Literacy and Learning for a Sustainable Future (LSF) to help deepen Canada's response to the Decade.

In Canada, formal education is under provincial jurisdiction. Therefore, one of the initiatives of LSF in support of the UNECE objectives was to establish provincial/territorial Education for Sustainable Development Working Groups. Another important initiative was to form the National Education for Sustainable Development Expert Council (NESDEC). Many of these groups are still active (see Appendix 6 for evidence of the success of these groups.) In addition, several Regional Centres of Excellence, which are "network[s] of existing formal, non-formal and informal

education organizations, mobilized to deliver ESD to a regional community" (Bell, 2009, p. 16) were formed with the support of Environment Canada in Saskatchewan, southern Ontario, and the Montreal region. Toronto's York University has a UNESCO Chair in Education for Sustainable Development which is currently held by Dr. Charles Hopkins.

The Association of Universities and Colleges of Canada (AUCC), a membership organization that represents Canada's 95 public and private not-for-profit universities and degree-level colleges, supports its member universities' efforts to enhance internationalism and cultural sensitivity among the student body by managing several programs in international development, internships, exchanges and research.[2] AUCC also has the University Partnerships in Cooperation and Development Program which funds projects between Canadian universities and education and training organizations in developing countries in order to help developing country institutions to better prepare their citizens to address their countries' most important development needs.[3] The Association of Canadian Community Colleges (ACCC) has made ESD a priority for many years. In 2007, the organization held a Symposium on Environmental Sustainability to

> provide member institution leaders with an opportunity to share best practices on incorporating sustainability principles in vision statements, missions, core values, strategic plans, priorities, policies, operations, procurement strategies and ethical investments, as well as to learn how staff and students have become eco-conscious citizens and agents for change in their communities.

Through a consultation process that was initiated at the symposium, at the request of members, ACCC developed the Pan-Canadian Protocol for Sustainability. This Protocol has been signed by 75 institutions over the years. Signatories to the Protocol agree to provide leadership in their internal and external communities and to maximize their contribution to a sustainable future. The Protocol is broad in scope in order to enable institutions to develop policies and practices consistent with their capabilities.

ESD in Manitoba

At the K–12 Level

Manitoba Education oversees educational policy for K–12 schools and also shapes the content of schooling in the province through the development of the provincial curriculum. At the provincial level, Manitoba Education consultants are responsible for coordinating and facilitating curriculum development, including the production of guides that provide teaching strategies, background information, learning resources and student materials.

In 2004, education for sustainable development (ESD) was declared to be one of the Ministry's priorities, and a Sustainable Development Coordinator position was created to oversee the Ministry's efforts (Swayze 2010). Manitoba recognized early that ESD is a primary agent of transformation towards sustainability, increasing people's capacities to transform their visions for society into reality. Manitoba believes that ESD is an essential ingredient to ensure quality education and a successful transition to green societies and economies.

In 2004–2008 an ESD Action Plan was created to support educators in their efforts to teach about and for sustainability. The action plan committed Manitoba Education to a comprehensive suite of actions to be carried out across Manitoba,

[2] More information is available at the following websites: http://www.aucc.ca/programs-services/international-programs/; http://www.boursesfrancophonie.ca/index.html.
[3] For more information, see http://www.aucc.ca/programs-services/international-programs/university-partnerships/

including: integrating ESD into curriculum; identifying and promoting learning resources to support ESD; increasing the professional development opportunities in ESD for educators; and providing systemic support for ESD through the provision of grants and information resources (Swayze 2010).

Considerable effort was invested from 2004–2006 to integrate ESD into the curriculum. This entailed a review of student learning outcomes, which served to identify sustainability themes that were already part of the curriculum as well as gaps that exist, providing the baseline information needed to move forward and to monitor and report on progress. This review was completed in 2006 and was posted on the ESD website as the Correlation Charts, allowing educators to see where sustainable development is actually due to be taught and to see where it is already covered in the curriculum (Buckler, 2011). In 2008, the position of Sustainable Curriculum consultant was created to provide educators with professional development opportunities in ESD.

In addition to integrating ESD into the curriculum, Manitoba Education has provided support for professional development for administrators through the Sustainable Education Academy (SEdA); in-service and pre-service training for teachers, funding for new, more environmentally friendly infrastructure; and small grants for school projects (in partnership with Manitoba Hydro). It has also developed new learning resources.

Manitoba has approached ESD in K–12 education system using the "whole school" approach, meaning that not only does it incorporate teaching and learning for sustainable development into the curriculum, but the school also serves as a model for learning, through sustainable school operations such as integrated governance, stakeholder and community involvement, long-term planning, and sustainability monitoring and evaluation. Many schools in Manitoba are embracing sustainability, both in their school facilities as well as in (and outside) the classroom.

In 2009, Manitoba Education took a significant step when it embedded sustainability in its mission statement by stating (Government of Manitoba, 2009):

> To ensure that all Manitoba's children and youth have access to an array of educational opportunities such that every learner experiences success through relevant, engaging and high quality education that prepares them *for lifelong learning and citizenship in a democratic, socially just and sustainable society* [emphasis added].

Sustainability is also included in the overarching goals found in the mandate, which is "To ensure education in Manitoba supports students experiencing and learning about what it means to live in a sustainable manner."

Manitoba Education has nurtured relationships with stakeholders to help support and foster a culture of sustainability in Manitoba schools. Partnerships were established with non-government organizations (NGO's), the private sector, schools and school divisions, faculties of education and government departments to strengthen and expand its reach and effectiveness.

With the launch of the United Nations Decade of Education for Sustainable Development (UNDESD), in 2005, the province of Manitoba has taken a leadership position in support of the UNDESD and has been active in all aspects of education for sustainable development (ESD). The Deputy Minister of Education, Gerald Farthing, serves as the chair of the United Nations Economic Commission for Europe's ESD committee and also serves as chair of the Council for Ministers of Education Canada (CMEC) working group on ESD.

Students today are concerned about their communities and communities around the world. Schooling needs to address their concerns and empower them to tackle the challenges facing their communities and the world. The K–12 system

must lay the foundation for students to advance to post-secondary institutions and colleges and ready them for careers by providing them with the attitudes, skills, values, perspectives and knowledge they need in order to transform our societies to achieve a sustainable future.

In June 2012, Manitoba released its Green Plan. Called *Tomorrow Now*, it is the government's "eight-year strategic plan for protecting the environment while ensuring a prosperous and environmentally conscious economy." It sets out actions around the following five key priorities:

1. Good for Our Economy—Good For Our Environment
2. Changing Our Ways For A Changing Climate
3. Safeguarding our Water, Air and Land
4. Nurturing Our Living World
5. Simple Individual Choices—Big Results

Within the fifth priority, "Simple Individual Choices—Big Results," the province emphasizes that all Manitobans have a role to play in ensuring that the benefits of our environment are preserved for both present and future generations, and that all Manitobans need to lead by example and create sustainable policies that encourage environmentally positive behaviour throughout society and the economy. The Green Plan advances learning, education, civic leadership and awareness raising as crucial to achieving this priority. Actions to support this change include citizenry mobilization[4] and eco-learning.[5] The commitment to eco-learning includes promoting green schools and Education for Sustainable Development, which the province aims to achieve by:

1. Developing an Education for Sustainability Leadership Council of educational leaders and stakeholders from post-secondary institutions, school boards and trustees associations, administrators, teachers' societies, parent councils and Manitoba Education to advise on the development of a new three-year action plan on sustainability for formal education to guide a whole-system approach toward education for sustainability in Manitoba
2. Expanding the natural resource officers in schools program, in which officers share experiences and knowledge about how natural resources are conserved and protected.
3. Encouraging a sustainability school plan in every school by 2015.
4. Advancing technical and vocational education and training to support the transition to a green economy, including launching a Guide to Green Jobs and Sustainable Careers.
5. Promoting the introduction of education for sustainable development into teacher education.
6. Implementing a new Grade 12 course on sustainability.
7. Supporting schools greening their school grounds through funding to create outdoor learning environments for new school buildings.

[4] That is, demonstrating green leadership in government, "Get Green" awareness campaigns, Green community awards, encouraging children to engage in outdoor activities and supporting local food production.
[5] Such as developing a network of attractions throughout the province and marketing Manitoba as Canada's only permanent "eco-expo," enhancing Manitoba's wildlife webcam network, and promoting green schools and Education for Sustainable Development.

8. Encouraging schools, universities and colleges to access any new funding programs from Manitoba Hydro that encourage energy and water efficiency.
9. Ensuring new school building projects are built to green building standards.

Since the release of the Tomorrow Now document, Manitoba Education has established an Education for Sustainability Leadership Council, made up of educational leaders and stakeholders from post-secondary institutions, school boards and trustees associations, administrators, teachers' societies, parent councils, other government departments and Manitoba Education, to advise on the development of a new three-year action plan on sustainability for formal education. The committee has met several times and will be releasing a document in the winter of 2013.

At the Post-Secondary Level

Two universities have signed the Talloires Declaration (Appendix 1), and two colleges have agreed to support ACCC's Pan-Canadian Protocol for Sustainability (Appendix 4). In our research, 10 of the 11 institutions participated in either the interviews with campus leadership, or the survey, or both. The balance of this study will present promising findings on progress on ESD in areas such as policies, administration, facilities management, courses and research.

Section III. Research Approach

The research approach had two main components: 1: high-level interviews with college and university presidents (see Appendix 7 for interview questions) and 2: the survey (see Appendix 8 for survey questions). The survey was modelled on an annual study by the Council of Ontario Universities called *Ontario Universities: Going Greener–Report of Campus Sustainability Initiatives* (November, 2009). The goal of the study was to investigate ESD using a "whole-school" approach, including not only the sustainability principles that are taught in the courses, but also in what is reflected by the school environment. The survey explored the following core areas of interest:

1. Policy, administration and partnerships
    a. Strategic planning and reporting
    b. Partnerships
    c. Student engagement
    d. Openness, transparency and accountability
2. Operations and facilities
    a. Recycling and waste
    b. Purchasing and procurement
    c. Transportation
    d. Energy management
    e. Fleet
    f. Buildings
3. Students, curriculum and research
    a. Student involvement
    b. Curriculum
    c. Research
4. Others
    a. Drivers and barriers

Questions for the survey were carefully selected from the Council of Ontario Universities (COU) model and modified to fit our areas of interest. For the "Students, curriculum and research" area, we complemented the COU model with questions from the College Sustainability Report Card and the AASHE–STARS reporting frameworks. Although our analysis of survey results is at the aggregate level, constructing the survey based on these frameworks allows some level of comparability between the aggregate Manitoba colleges and universities respondent figures, as well as between the results of these studies. For example, it is possible to compare the aggregate performance of the Ontario universities, based on past results of the COU study, with aggregate results of the present study. Survey respondents may also compare their own response to those of Ontario universities or other respondents of the College Sustainability Report Card or AASHE–STARS reporting frameworks.

The draft of the preliminary survey questionnaire was shared with sustainability representatives of Manitoba colleges and universities at a group meeting with the aim of informing the institutions about the study, but also to obtain their feedback and amend the approach where necessary. The research approach and survey questionnaire was modified based the comments that we received from this group. Each institution was given about two weeks to complete the survey. In most cases, this exercise required the institutional respondent to obtain input from various departments.

The President interviews were undertaken with the goal of obtaining a high-level perspective on motivations for undertaking ESD. The goal was to understand what vision Presidents have for a sustainable college or university, how this vision is incorporated into strategic and operational documents, and how/why sustainability initiatives were being supported by senior management and the board. Also of interest was how these sustainability initiatives were having an impact on the institution and its various stakeholders, including students, faculty, staff and the larger community, and how these initiatives were influenced by the external policy landscape. Finally, we sought to understand what conditions were necessary to help promote the growth of sustainability in post-secondary education in Manitoba, and what barriers and drivers have an influence on the institutions. A semi-structured case interview methodology was employed. Gabriel Huppé, IISD Researcher, led the interviews. Heather Creech (IISD Director) and either Meg Brolley (Council on Post-Secondary Education) or Darcy Rollins (Manitoba Advanced Education and Literacy) were also present to support most interviews. The interview questions were drafted by the authors of this report, with the input of the Sustainable Development Coordinator, Manitoba Education and representatives from Brandon University, University of Manitoba, Red River College, University of Winnipeg, University College of the North, Canadian Mennonite University, and Providence University College. The majority of these interviews took place in person, on location at the college or university.

Direct input from students, deans, department heads and faculty members could not be included in the study due to its timing and the resources available. As this study was not intended to evaluate the performance of the institutions, findings were not validated with other stakeholder groups on campus. The purpose of the interviews was to obtain the high-level perspective of the institution related to ESD. This study thus reports what the campus administration is committed to and what, in their own view, they are achieving.

Section IV. The High-Level Perspective: Views of the Presidents of Manitoba post-secondary institutions

ESD is not new to post-secondary institutions in Manitoba. Two universities have signed the Talloires Declaration (Appendix 1) and have made further commitments specifically on climate change, and two colleges have agreed to support ACCC's Pan-Canadian Protocol for Sustainability (Appendix 4). In our research, 10 of the 11 institutions participated in either the interviews with campus leadership, or the survey, or both. The balance of this study presents promising findings on progress on ESD in areas such as policies, administration, facilities management, courses and research.

TABLE 1: NATIONAL AND INTERNATIONAL COMMITMENTS OF POST-SECONDARY INSTITUTIONS IN MANITOBA

POST-SECONDARY EDUCATION INSTITUTIONS IN MANITOBA	NATIONAL AND INTERNATIONAL COMMITMENTS
Assiniboine Community College	ACCC's Pan-Canadian protocol
Red River College	ACCC's Pan-Canadian protocol
University of Manitoba	Talloires Declaration; Halifax Declaration; University and College Presidents' Climate Change Statement of Action for Canada
University of Winnipeg	Talloires Declaration; University and College Presidents' Climate Change Statement of Action for Canada

President interviews revealed several high-level orientations towards Education for Sustainable Development (ESD). We found that, depending on institutional characteristics, post-secondary institutions tended to adopt one or more of the following orientations: i) community embeddedness; ii) principles and values-infused; iii) industry-based; iv) strategic innovation; and v) responsiveness to stakeholders. Some clearly were motivated by multiple orientations: for example, while Red River College has a strong industry-based focus, it is also driven by its relationship to the community and its responsiveness to stakeholders. University of Winnipeg's interest in ESD is driven in part by its strong mandate to serve the community around it, but also by its growing attention to industry needs. Also, these orientations can change over time: University of Winnipeg's initial actions around ESD in the early 2000s were based on responses to campus stakeholder demands, but recently the orientation has shifted to its relationship with its surrounding community (without, of course, losing the need for ongoing engagement with all its stakeholders). These orientations towards ESD are part of the organizational ethos, and not necessarily made explicit in any strategic documents of the college or university.

In general, the interviews found that most institutions discovered they were doing more than they thought on ESD, though many acknowledged that they could be doing more. Of the 11 colleges and universities in Manitoba surveyed, nine agreed to be interviewed, while one provided a written response to the interview questions. They are listed below.

TABLE 2: LIST OF RESPONDENTS

INTERVIEWEE	INSTITUTION
Lloyd Axworthy, President	University of Winnipeg
David Barnard, President	University of Manitoba
Donald Burke, President	Booth University College
Stephanie Forsyth, President *Note: written response provided*	Red River College
Mark Frison, President, and Dr. Jack Moes, VP (Academic)	Assiniboine Community College
Raymonde Gagné, Rectrice	Université de Saint-Boniface
Gerald Gerbrandt, President	Canadian Mennonite University
August Konkel, President	Providence University College
Kathryn McNaughton, VP (Academic & Research)	University College of the North (UCN)
Deborah Poff, President	Brandon University

Community-Embeddedness Orientation

Most institutions painted a picture of the modern college or university as one that is intrinsically linked to its community. The success of the institution was often expressed as being dependent upon the success and well-being of its community, and it was thought that the success and well-being of the community was similarly dependent upon the success of the institution. In institutions where this philosophy was the strongest, the motivation for undertaking ESD was this very **embeddedness in the community**.

> "We have incorporated ESD somewhat, but the motivation is more personal, and is in response to our role as an institution to contribute to our community but we have not undertaken these initiatives from an ESD perspective." (Kathryn McNaughton, University College of the North)

> "At UCN we are forced to be aware of our role [in our community] because of our location and our commitment to traditional aboriginal knowledge." (Kathryn McNaughton, University College of the North)

> "I have to come back to our unique role and the unique focus at our institution as the only French university in Manitoba and Western Canada. I think our main focus is to make students aware of the importance and the role of French language education and also encourage their involvement in community services to ensure the community's cultural vitality. One of the things that we are focusing on is normalizing life in French in a variety of sectors." (Raymonde Gagné, Université de Saint-Boniface)

> "We partner with community groups that are interested in moving that forward. For example, we partner with various cultural community groups in theatre, music and arts." (Raymonde Gagné, Université de Saint-Boniface)

> "We are located in downtown Winnipeg in one of the most diverse communities in Canada. We believe it is critically important to reach out and partner with our neighbours so that together we can create a vibrant, reflective and relevant learning environment, under the name of community learning." (Lloyd Axworthy, University of Winnipeg)

University College of the North, Université de Saint-Boniface and The University of Winnipeg were the three institutions that most emphasized the embeddedness orientation. All three stressed their deep interconnection to their community, and their resulting role and responsibility as an institution of post-secondary education. These institutions place a high level of emphasis on the importance of community partnerships and collaborations that create mutual value.

UCN's orientation towards community embeddedness arises from its commitment to social equity and traditional aboriginal values and knowledge, as well as its location in Northern Manitoba. According to the Kathryn McNaughton, UCN's mission is to "contribute to the well-being of our community. Although we don't call it 'sustainability,' that's what it is." Moreover, one of UCN's core values is stewardship, and the institution strives to ensure students have the opportunities to learn and critique the concepts of sustainability. She also highlighted UCN's potential role as a catalyst to encourage conversations and partnerships among governmental and non-governmental agencies, business and First Nations.

UCN is clearly influenced by its community. As part of its governance structure, it has a Council of Elders that provides guidance related to traditional knowledge, including stewardship and environmental issues. A United Nations Declaration on Traditional Knowledge and the use of animal fats was recently signed by UCN at the request of an elder. Also, UCN's Natural Management and Technology Management program—which is 27 years old and focuses on environmental awareness, conservation and protection—requires that students spend some time in the field in various communities where they learn about issues on the ground, and have the opportunity, as McNaughton explained, to think about "what it means to consult with an aboriginal community if you are a mining company, for example, and what are the issues that emerge when you have a better understanding of traditional aboriginal knowledge."

The mission of Université de Saint-Boniface is to be the university of choice for the francophone community. In our interview, Raymonde Gagné emphasized that "partnerships with the community are very important because sustainability is a dynamic process, and not an end product. There's a need to assume change and manage uncertainty so it's very important that we acquire different knowledge and experiences." The university has a multistakeholder committee in place, composed of various stakeholders from across the institution, to provide advice on sustainability issues. Moreover, partnerships with businesses and different organizations in the organization of service learning and practicum activities were seen as highly beneficial for both parties. The university will be submitting a proposal for a global citizenship accreditation program which would reward students for intercultural competency, knowledge and experiences through international activities, with the aim of promoting inter-cultural sensitivity. An important area of research for the institution centres on the culture of the francophone population. A large portion of the student population is composed of immigrants and international students, and Université de Saint-Boniface tries to make sure that these individuals are well integrated in the community by offering workshops promoting social inclusion. The university also emphasizes co-op programs to promote and support sustainable community development.

The University of Winnipeg's location in the inner city is a principal motivation for ESD. President Lloyd Axworthy emphasized that the University of Winnipeg is "dissolving the line between our campus and our community" and that "bringing human rights, social justice and environmental responsibility together at our university is a necessary step if we are to support current academics in addressing the most pressing issues in the world today and to prepare our future leaders for the world they are inheriting." As part of its larger commitment to community, the university offers sustainability-relevant programming to members of the surrounding neighbourhood. Every summer, the university runs a green camp for inner-city children primarily between the ages of 7 and 12, called Eco-University Summer Camp. About 1,500 children participate every year. The camp runs for 10 weeks, and with the involvement of tenured

faculty, mixes fun activities with traditional, aboriginal and sustainability knowledge, culminating in a certificate for the successful campers. Many campers are aboriginal, and some science courses in the Eco camp are taught in an aboriginal language such as Ojibway. According to the President, those considered to be outstanding are eligible for a credit account to attend courses and programs at the university. In addition, the UWSA Bike Lab is working with the University of Winnipeg Collegiate Model School to develop a Grade 11 curriculum that integrates a cycling community-engagement campaign as part of its programming. 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. The University of Winnipeg has been strategic in pursuing a wide range of partnerships, including: its Renewal Corporation's partnering with SEED Winnipeg to create Diversity Food Services, which now delivers food services to the university while providing meaningful employment and ownership opportunities for the community; joining SEED Winnipeg's Social Purchasing Portal, which helps direct existing business purchases to local businesses and social enterprises; signing on to the Manitoba Food Charter in support of a vision for a sustainable and secure food system in Manitoba; and developing the Indigenous Knowledge Science and the Environment program in collaboration with the Centre for Indigenous Environmental Resources.

Principles- and Values-Infused Orientation

Many post-secondary institutions operate on the premise that students are being prepared for a sustainable future. In certain institutions, however, these values and principles are infused in the culture, mission and vision of the institution, and permeate almost every element of its functioning. We call this orientation **principles and values-infused**. It is an orientation that is primarily adopted by the religious institutions which operate under principles of social justice, peace and equity.

> "We have very few systematic programs which have been developed in order to meet standards or resolutions passed in other settings [on ESD]. At the same time, we have four commitments as an institution: The first one is peace and justice, which identifies sustainability as a key item, and that permeates everything." (Gerald Gerbrandt, Canadian Mennonite University)

> "We are a Christian university. We often refer to the fact that God has given us the mandate to take care of the World." (Gerald Gerbrandt, Canadian Mennonite University)

Canadian Mennonite University is a Christian university in the Anabaptist tradition. A commitment to social justice (and, therefore, sustainability) permeates everything that the institution does. President Gerald Gerbrandt stated in the interview, "our vision would be that every student and faculty member recognizes that the globe is in difficulty and lives accordingly. So what that means practically varies from person to person and from program to program." The university has no Sustainability Officer or any formal way to address sustainability, but sustainability is part of its ethos. Gerbrandt indicated "It [sustainability] is so much part of the spirit." Because the principle of social justice is at the heart of the institution, the drive for ESD is decentralized and shared across multiple stakeholders, including staff, faculty, students, the management and the board. Senior management and the board pushed hard to get geothermal, not only because it might have monetary payoffs in the long-run due to energy and heating cost savings, but also because it is "a wonderful teaching device." Senior management and the board also strongly encouraged the initiation of a recycling program and other initiatives such as sustainable procurement for the kitchen. When students became interested in developing a farm on campus, management responded very positively. This farm now produces vegetables and other goods that

are distributed to participating members of the cooperative, including faculty, students, staff, alumni and their families. In this sense, CMU's farm not only contributes to sustainable locally produced food, but also educates a large range of stakeholders on sustainable food procurement. The university has strong relationships with the Mennonite Central Committee, which does work around the world on social justice and food security issues, and with the Mennonite Economic Development Association, which has been very active in microfinance in developing countries. Courses at the university include: "Theology of Peace and Justice," "Introduction to Environmental Studies," "Environmental Sustainability: A Global Dilemma," "Ecological Peace Building," and "A Study of Voluntary Simplicity"; however, none of these were developed because the university had set rules to work in this area of ESD, but rather emerged from the ethos of social justice that permeates CMU.

Similarly, at Providence University College many unique sustainability initiatives are taking place without a formalized sustainability plan. For example, many of the institution's buildings are carbon neutral using geothermal installations and efficient energy installations such as boilers with up to 90 per cent efficiency. New energy projects are under way, such as an experiment with ecological biomass. Students have responded positively to these initiatives. As a Christian institution, at Providence theology and care for creation are part of all programs and courses. Providence University College works with the municipality to reduce its carbon emissions with programs that include a community commuter project to transport people to and from Winnipeg. Many of the sustainability projects are partially funded by board members of Providence University College.

Industry-Based Focus

ESD is important in order to impart the knowledge necessary for students to compete for jobs in the green economy, defined as one in which value and growth are maximized across the whole economy, while natural assets are managed sustainably. It will require a certain skill set that ESD can help deliver. Graduates from colleges and universities that have prepared their students for green economy jobs will be better able to compete for positions in the green economy, and ultimately contribute to a more sustainable society in Manitoba. This orientation is called an **industry-based focus**. Institutions that adopt this orientation use ESD to develop and promote programs and initiatives with the aim of being leading developers of students for jobs in the green economy.

> "We rely heavily on programming advice from industry. Every program has an industry advisory committee and most of these committees have representatives of NGOs, business and government personnel that have been giving us advice around the skills and knowledge needed in graduates, and more and more we are seeing those committees introduce issues related to sustainability." (Mark Frison, Assiniboine Community College)

> "Our vision is for Red River College to be a post-secondary leader in sustainability. This vision is manifested in our operations, governance, long-range plans and curriculum. A sustainable Red River College is where our students graduate from programs with job-ready skills and with an appreciation that their chosen career path has an impact on the social, economic and environmental prosperity of our communities." (Stephanie Forsyth, Red River College)

> "Colleges are uniquely positioned to achieve sustainability in the province and beyond because of the skilled trades nature of many of our programs. We are graduating students with expertise in renewable energy, green buildings, land management, cleaner transportation, water, and waste—all of which contribute to a greener economy." (Stephanie Forsyth, Red River College)

Assiniboine Community College's academic charter lists the general employability skills that students are expected to have upon graduation, including communication, teamwork and problem-solving skills. This charter also makes reference to the importance for students to graduate with a certain awareness of sustainability, and with an ability to practice sustainability in the sector for which they are being trained. As the college goes through regular curriculum review, these sustainability skills become incorporated into the curriculum. In the interview, Assiniboine Community College President Mark Frison commented on the institution's attention to good performance on sustainability. Various initiatives, such as converting the fleet of vehicles to hybrids and reducing the volume of printing and photocopying, helped the college set an example for students as part of their education and training. As Frison noted, the college also recognizes the need to be "responsive to industry needs in terms of creating the programming [of ESD]." Sustainability is one of the 13 strategic objectives of the college, and there is a standing college committee responsible for implementation. Frison pointed out that, while relying heavily on industry for programming advice, the committee has worked with various Deans and Chairs "to incorporate sustainability issues and concepts into courses as appropriate." An example of this commitment is the building trades curriculum, which now includes energy conservation, renewable energy and water conservation, and the transportation trades curriculum which addresses the emergence of hybrid and electric vehicle technology. The college has signed the Association of Canadian Community Colleges Pan-Canadian Protocol on Sustainability (2012). According to Frison, signing on gave them "a framework for planning activities related to the strategic objective of sustainability."

President Stephanie Forsyth of Red River College stated that the institution is "committed to being a post-secondary leader in sustainability." This commitment is demonstrated in its operations, curriculum, policy and governance and the partnerships it forms with the community. The college has an active and growing Applied Research Department that partners with industry to support applied research, knowledge transfer, prototyping, product development, testing and commercialization. Much of its work focuses on solving or advancing real-world sustainability challenges, including retrofitting bus engines to meet emission standards and testing the effectiveness of parabolic solar troughs as a renewable energy source in cold climates. Forsyth noted: "post-secondary institutions play a central role in achieving sustainability. Every year we graduate thousands of learners whose personal and professional behaviours and decisions are shaped by what they learn from their campus experience. We take this responsibility seriously and are committed to enhancing sustainability inside and outside of the classroom." The President described as pivotal the relationships with public and private organizations outside the college. Close relationships with industry ensure that the curriculum remains relevant. Partnerships with the Siloam Mission and the Humane Society provide students with hands-on learning experiences that benefit the broader community. Students are expected to demonstrate the principles of sustainability as a requirement for completing their program. The college has a number of sustainability initiatives on campus, including on-site composting and the on-site production of biodiesel from used cooking oils from their kitchens which is then used to power its grounds equipment. Red River College was recognized at the national level as one of Canada's Greenest Employers for 2011 and 2012. In December 2011, the college's board of governors approved a Strategic Plan that incorporates sustainability at the highest level. One of the four strategic themes of the College is to improve its triple bottom line: people, planet and profits. This strategic theme will be realized by undertaking a variety of activities, including the expansion of service learning in order to foster civic engagement, and the development of a promotion and education program to develop student, faculty and staff appreciation for sustainability. Red River College is a signatory to the Association of Canadian Community Colleges Pan-Canadian Protocol for Sustainability.

University of Winnipeg engages significantly with industry in several of its programs, especially its Masters in Development Practice, through which students are offered internships with, among others, CN and Manitoba Hydro. The Faculty of Business and Economics also works closely with industry and expects significant contact with industries leading the green economy through its Masters in Environmental, Resource, and Development Economics. The faculty's newly announced Chair in Co-Operative Enterprises is also serving a niche industry need for increased capacity in co-op-based business models in Manitoba, and was established with strong collaboration from Manitoba's co-op community.

Strategic Innovation Orientation

Other institutions use ESD similarly, with the aim of directing and accelerating the development of their institutions in ways that they deem desirable. Under the **strategic innovation** orientation, ESD is a component of how the institution develops in a manner that is conducive to its future success. The vision of ESD is used as a focus to mobilize various stakeholders and to influence the trajectory of the institution's development.

> "The Southwood project [to create a sustainable campus community on a 48-hectare site next to the university] has galvanized that [ESD] conversation for us because we really meant to see it as transformational, not only for the university but also to the community and the province . . . We have an opportunity to think differently because we are going to do something on Southwood. That's not something that comes along every day—to think big about these things." (David Barnard, University of Manitoba)

> "Much of the city turns its back on the river, and this university treats the river as a kind of boundary. In many places you can be close to the river, and not even know it because we've grown trees to screen it off. I think there's an opportunity to treat the river as an asset and to treat it as its own little mini environment." (David Barnard, University of Manitoba)

> "Universities are sites of collaboration and innovation, both of which are necessary if we are to successfully address the social and environmental challenges that future generations face." (Lloyd Axworthy, University of Winnipeg)

> "As a microcosm of diverse interests and backgrounds we are demonstrating that the community we have built here on campus can work together to reach attainable goals, such as Canada's former commitments under the Kyoto Protocol." (Lloyd Axworthy, University of Winnipeg)

The University of Manitoba is one of Canada's oldest universities. Its president, David Barnard, described ESD as "a larger mindset ethos issue. Partly, the reality for the university is taking a leadership role and demonstrating a concern for sustainable development. And it is part of the education process to immerse people in that environment." The President commented that the view of some stakeholders on campus is that the ESD approach of the university has been somewhat "disconnected" up to now. The university has produced an extensive report on its sustainability practices: according to Barnard, this document is seen as "a kind of synthetic framework." As he stated, "We have a broad vision—we are committed to the general principle [of ESD] and our strategic vision for action is moving in that way. However, one of our challenges is to figure out how to move from generalities to specific targets of what we want

to accomplish."[6] The President believes that the university has a leadership role and a demonstration role with regards to doing things that others can take as examples. Most of the emphasis placed on ESD is with regards to its potential as a vehicle that directs and accelerates the development of the university in a desirable direction. For example, the ESD orientation is used as a focus for the development of the Southwood project in order to mobilize various actors, including Manitoba Hydro, toward a vision of a community of sustainable buildings and sustainable community development. Similarly, a sustainability vision has helped drive the university's research focus. For example, the Clayton H. Riddell Faculty of Environment, Earth, and Resources offers cutting edge academics and scientific research and capacity. A three-way agreement will be signed with Aarhus University in Denmark and another organization to work together on geo-microbiology in the Arctic. The university has signed both the Talloires and Halifax Declarations to demonstrate its strategic commitment to ESD.

The University of Winnipeg has been formally engaged in a sustainability process since 2005, when President Lloyd Axworthy established a Campus Sustainability Task Force and committed the university to achieving GHG reduction targets corresponding to those of the Kyoto Protocol (6 per cent below 1990 levels by 2012). The past six years have seen significant developments: the original Task Force has developed into a permanent multistakeholder Campus Sustainability Council; the Board of Regents passed the university's Sustainability Policy; eight administrative policies have been written to address various environmental aspects of campus sustainability; measurement indicators procedures have been developed to monitor and track progress on sustainability goals; and sustainability progress reports have been published annually. More recently, an updated Sustainability Strategic Plan for 2012–2016 was reviewed and accepted by the campus community and the Board of Regents. This plan outlines a number of initiatives to be undertaken over the next five years to support the achievement of Kyoto targets and beyond. A recently installed hybrid heating system could reduce GHG emissions in core campus buildings by as much as 1,000 tonnes of CO_2 per year. Sustainability is one of the university's key measures of success and one of six presidential outcomes. This senior-level commitment is foundational to the development and success of the sustainability action plan. The university's sustainability policies and indicators were developed to reflect better practices found in current scholarship on sustainability management and sustainable development. The university has signed the Talloires Declaration and the University and College Presidents' Statement of Action for Canada in demonstration of its commitment to ESD.

Responsiveness to Stakeholders

It is very likely that early stakeholder pressure was a key driver for all institutions in Manitoba. For example, at the University of Winnipeg, significant stakeholder pressures between 2003 and 2005, both from students and from various members faculty, were significant drivers for establishing sustainability as a strategic objective at the University.

Nevertheless, some institutions have been less proactive with regards to ESD, implementing various activities primarily in response to the pressure of stakeholder interests. We call their orientation **responsiveness to stakeholders**. In these institutions, ESD has not been a strategic objective, and ESD programs or initiatives have been adopted primarily due to stakeholder pressure. This is not to say that they are not engaged in worthwhile ESD activities, but rather that their ESD strategy is mainly emerging from and determined by issues brought up by the stakeholders of its community.

[6] The University has subsequently released *Sustainability at the University of Manitoba: A strategic vision for action*, Available at http://umanitoba.ca/campus/physical_plant/media/Sustainability_at_the_University_of_Manitoba-A_Strategic_Vision_for_Action-June_2012.pdf

> "Our student union came to us and asked us to consider sustainable procurement practices, and we said that we would be in favour of it, but it would be a significant challenge for us. So we decided to start the dialogue with them, and we will do research on the issue over the summer to see how rapidly we can ramp it up. Certainly we are very supportive of it as a position, and I think that our student union is very understanding that some things are going to be easier than others." (Deborah Poff, Brandon University)

> "I actually think that the survey and the conversations that we are having now [as a result of this study] are raising the awareness [of Education for Sustainable Development] as an important issue for us to have a more intentional discussion about. The survey is serving a purpose for us as a small institution in bringing it to the forefront of our discussions." (Donald Burke, Booth University College)

Brandon University includes sustainability in its strategic plan, with an overall goal of being an environmentally sustainable campus. It is engaged in a number of sustainability initiatives, including waste reduction, recycling and being a bottled-water-free campus. However, it has yet to develop a holistic vision for ESD and sustainability. Many of the current sustainability initiatives on campus were taken up by administration due to requests from its student body. The small size of the university was felt to be a strength because it allows management and staff to work closely with students to determine sustainability priorities. Management and students meet weekly to discuss initiatives of interest. In the interview with the President, she indicated that students were currently campaigning for sustainable procurement practices. Students are also requesting the purchase of special bottled water refilling machines to be installed on campus. Consequently, senior management is investigating the issue to determine if and to what extent these student suggestions could be implemented.

Drivers, Barriers and Challenges

The drivers for moving post-secondary institutions towards sustainability appear to be primarily internal at this point in time. As noted above, the commitment to sustainability is derived from one or more of the following orientations: the principles and values of the institution; a focus on community embeddedness; the desire for recognition for strategic innovation and industry leadership; and responsiveness to stakeholders, including students, faculty and board members. Two interviewees also mentioned the important role of organizations such as AASHE (Association for the Advancement of Sustainability in Higher Education) and its tool STARS (Sustainability Tracking and Assessment Rating System) in providing measurement and assessment frameworks for sustainability initiatives at colleges and universities as well as promoting knowledge sharing and networking.

All interviewees mentioned financial constraints as a significant barrier to undertaking ESD. One interviewee commented that, during these tough economic times, the institution has been focused on "keeping the lights on rather than reducing energy consumption."

Most interviewees also mentioned the need for an enabling policy and regulatory environment. For example, one interviewee made reference to a new building that was being partly funded by donors, the government and the institution itself. Because the government was involved, the new building was required to be built to a minimum of LEED (Leadership in Energy and Environmental Design) Silver standard, and therefore there was no choice but to implement green practices. In the absence of this requirement by the government, the institution would have had to convince donors that constructing the new building to the LEED Silver standard was worth the investment. Similarly, another interviewee mentioned that updating the Province of Manitoba's Green Building Policy to require minimal

green standards for existing buildings "could go a long way in furthering campus sustainability." Yet another interviewee mentioned that Manitoba charges low rates for energy, and that, in other provinces, the business case to undertake renewable energy projects was much stronger.

However, barriers and challenges can also be found inside the institutions, among their own stakeholders. For instance, academic freedom was mentioned by about half of the interviewees as being a challenge to the implementation of ESD. One interviewee commented that:

> "The whole structure of post-secondary education with its emphasis on independent centres of inquiry and academic freedom [works against] against larger institutions' developing a coherent vision. You can do that [implement ESD in curriculum] much better at the secondary or elementary school level, where the Department of Education says what you are supposed to teach. You can't do that at the post-secondary-level."

Another interviewee mentioned that university courses are "largely dependent on individual faculties and departments. University management can create incentives and supports for faculties wishing to incorporate greater sustainability content in what they teach."

In addition to challenges at the individual faculty-member level, many interviewees expressed concern that students engaged in sustainability initiatives at their institution may "flee the big problems [of sustainability] for trivial solutions." One interview gave the example of students that "campaign for a bottled water free campus, but have no trouble driving several kilometers to obtain a cup of coffee." As one institution commented later in the survey, "A student body that is informed and engaged and is willing to be a part of the campus sustainability 'movement' is also critical to advance sustainability."

Section V. Survey Results

Nine of the eleven colleges and universities in Manitoba chose to participate in the survey. The survey was modelled on the Council of Ontario Universities' annual study, "Ontario Universities: Going Greener—Report of Campus Sustainability Initiatives" (Council of Ontario Universities, 2009). Questions for the survey were selected from this model and modified to fit our areas of interest, in close consultation with representatives from Manitoba's post-secondary institutions. For the "Students, curriculum and research" area, we complemented the COU model with questions from the College Sustainability Report Card and the AASHE–STARS reporting frameworks.

SURVEY RESPONDENTS

Assiniboine Community College
Booth University College
Brandon University
Providence University College
Red River College
Université de Saint-Boniface
University College of the North
University of Manitoba
University of Winnipeg

Findings were circulated to the post-secondary respondents for review; additional comments were incorporated into this report.

Through this study it became apparent that colleges and universities are doing more on ESD than anticipated; this information clearly warrants sharing across the institutions and with government and industry stakeholders. Indeed, several respondents noted the challenges related to reporting on the full range of sustainability efforts within the survey format, often pointing to the institutional website for additional information. However, these institutions also know that they have more work to do, and are responding in various ways, such as the preparation of new sustainability plans, adopting new standards for sustainability reporting, and/or advancing new programs and course offerings.

TABLE 3: SELECTED EXAMPLES OF THE WIDE RANGE OF CAMPUS MANAGEMENT, TEACHING AND RESEARCH SUSTAINABILITY INITIATIVES IDENTIFIED IN THE SURVEY

Providence University College ➢ Geothermal heating and cooling: biomass heating, combined with high-efficiency boilers. ➢ Community garden and wind energy research.
Red River College ➢ The college was the first post-secondary institution in Manitoba to complete the Sustainability Tracking Assessment and Rating System (STARS), which gave it a comprehensive snapshot of their sustainability performance in operations, academics, planning, governance and more. ➢ The Applied Research Centre is testing the feasibility of solar troughs as a renewable energy source in cold climates. ➢ Converts its used cooking oil into fuel for grounds services vehicles.
Université de Saint-Boniface ➢ Implemented waste audits and a recycling program. ➢ Developed a policy for the use of green cleaning products by the custodial personnel.
University College of the North: ➢ Community-based teacher preparation programs, which have been designed to highlight Aboriginal and northern perspectives (cultural, linguistic, spiritual) with an emphasis on the importance of place, community and social equity. ➢ Provides training in Natural Resource Management Technology, which uses data-driven and evidence-based approaches to conservation. ➢ Community Economic Development and Administration program which provides participants with knowledge, technical skills and the necessary critical thinking skills to provide effective leadership at the community level in respect to economic sustainability and social equity.
University of Manitoba ➢ "Sustainability at the University of Manitoba: A Strategic Vision for Action" was formally approved by the University's Board of Governors in June 2012. ➢ The Southwood project will create a sustainable campus community on a 48-hectare site next to the university. ➢ The Waste Prevention Re-Shop redistributes usable, but no longer needed office supplies and furniture. Since opening in 2008 the Re-shop has re-distributed nearly 6000 items instead of sending them to landfill. ➢ Faculty and/or staff can receive training and tips on how to repair and maintain a bicycle through the Bike Dungeon. Volunteers also reclaim bikes that have been abandoned and deconstruct them for their parts. ➢ Four LEED-Accredited professionals on staff within the Physical Plant.
University of Winnipeg ➢ The members of the Richardson College For the Environment (including, among others, the Institute of Urban Studies, the Department of Indigenous Studies, the Master's in Development Practice, the UWinnipeg Sustainability Initiative) work together (and with others within the university and beyond) to develop strategies to address some of the planet's most pressing environmental issues, especially those related to climate change, urban environments, water resources, indigenous development, and the North. ➢ On track to achieve Kyoto target of reducing *absolute* GHG emissions to 6 per cent below 1990 levels by the end of fiscal year 2012. Over this same period, the University has added four major new buildings to its building stock, acquired several campus residence houses, and begun construction of a new field house. The installation of a hybrid heating system and the completion of an energy retrofit to existing buildings have been designed to offset the impact of campus expansion to ensure that the University can maintain its commitment to achieve absolute, rather than intensity-based, emission-reduction targets. ➢ The University established a pre-and post-consumer composting program in 2007 and partnered with the Forks in 2011 to pilot an urban solution to institutional composting.

Part 1: Policy, Administration and Partnerships

Strategic Planning and Reporting

Eight of the nine of the institutions report that principles of sustainability are incorporated in their strategic plans, suggesting that there is an important commitment to sustainable development at the governance and administration levels of these institutions. Half of these institutions have put these principles into practice, through establishing sustainable development policies and campus committees, and designating persons to be responsible for implementation. Two of the responding institutions have set up a specific office (department or unit) for addressing sustainable development on campus.

The use of monitoring and reporting systems on performance varies. University of Winnipeg developed its current reporting system internally, based on the ISO 14000 requirements for environmental management systems but expanded to include other sustainability issues. It has been in place since 2006. The College Sustainability Report Card,[7] developed by the U.S.-based Sustainable Endowments Institute has been used to guide the University of Manitoba: the Report Card criteria were taken into consideration when the University developed "Sustainability at the University of Manitoba: A Strategic Vision for Action." The Report Card itself has been incorporated into the new Sustainability Tracking and Reporting System (STARS) created under the auspices of the Association for the Advancement of Sustainability in Higher Education (AASHE). Only Red River College has implemented AASHE-STARS[8]. However, University of Manitoba will move to STARS in the near future, and University of Winnipeg plans to adopt it as well. University of Winnipeg notes that the use of a robust tracking and reporting system has enabled real and quantifiable progress on GHG emission reductions and on energy/GHG planning: as one university representative states, "Without five years of strong data, we could not have produced an emission reduction strategy with the level of quantitative detail regarding energy and GHG emissions that our plan draws on."

Partnerships

Partnerships are considered to be an important implementation mechanism for sustainable development (Willard & Creech, 2011; Creech, 2008). Close to 90 per cent of the institutions have established partnerships with businesses, local organizations or government to promote sustainability. For example, most colleges work in close partnerships with industry and government representatives to determine institutional priorities and programs for sustainability. Manitoba Hydro, the provincial government and local municipal governments figure prominently as partners in the survey results. The Université de Saint-Boniface works with a broad base of community stakeholders in order to promote life in French in a variety of sectors in Manitoba. The University of Winnipeg notes the importance of partnerships with First Nations communities. Most other institutions make use of extensive stakeholder consultations for the planning and implementation of sustainability initiatives. Given the richness and diversity of these various relationships, further research could explore how these external partnerships are integral to campus sustainability, and how they might be strengthened.

[7] The Green Report Card was developed by the Sustainable Endowments Institute, founded in 2005 to advance sustainability in campus operations. For more information see http://www.greenreportcard.org/report-card-2011/schools/university-of-manitoba/surveys.
[8] This report is available at https://stars.aashe.org/institutions/red-river-college-mb/report/2012-04-27/.

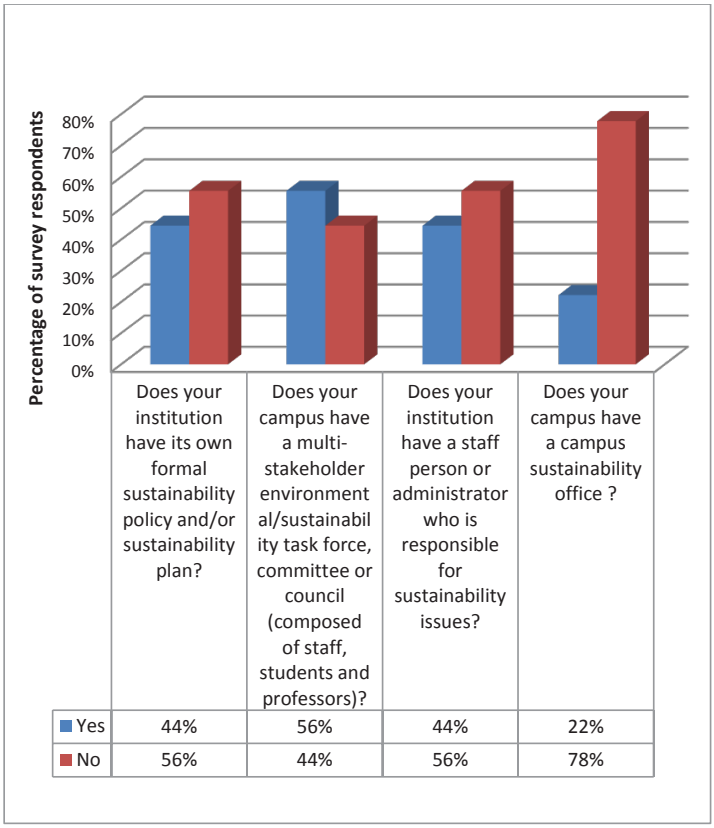

FIGURE 1: CAMPUS POLICIES AND ADMINISTRATION

THE UNIVERSITY OF WINNIPEG SUSTAINABILITY STRATEGY 2012–2016

The core content of this plan consists of updated decision-making criteria in the form of vision, mission, and value statements; ten goals with associated targets and action plans; and new Target Committees. Composed of individuals with operational responsibility over given areas of campus sustainability, these committees will coordinate the execution of Initial Action Plans (IAPs). These IAPs include activities from five action themes (technology, design, behaviour, measurement & reporting, curricular, co-curricular & research) to ensure that targets are achieved through the complementary and mutually reinforcing interaction of a variety of activities and initiatives. Provisions for measurement and evaluation are either already established or will be developed as part of this plan. [The core components of this plan are the university's formal Vision, Mission, Values, Goals and Targets with regards to sustainability.]

Source: University of Winnipeg, 2012

SUSTAINABILITY AT THE UNIVERSITY OF MANITOBA: A STRATEGIC VISION FOR ACTION

The Strategic Vision for Action sets out a blueprint for sustainability at the University of Manitoba, providing both a starting point and a guide for the community as we work through iterations of planning, action and evaluation such that the environmental, social and economic sustainability of all aspects of our University are consistently enhanced. . . . It sets out concrete actions as well as outlining areas that require further planning and development before action can be taken. The Sustainability Committee wants it to be a living document from which we can measure successes and identify new initiatives into the future. . . . The Sustainability Committee also recognizes that work will be required as we move forward to further prioritize the actions outlined, define specific approaches when appropriate and seek approval where necessary. . . . *The Strategic Vision for Action* is organized into three categories that are further broken down into sixteen theme areas. Each theme includes identification of a vision, benefits to the University, goals, and action items to reach the goals.

The Strategic Vision for Action is the culmination of the work of the University of Manitoba's Sustainability Committee, four working groups and the input of hundreds of people from the campus community and beyond. The working groups were charged with the responsibility of developing an action plan for fostering a culture of sustainability at our institution and integrating sustainability planning and action into all of our functions. Our immediate next steps are to seek approval for the plan from the University Board of Governors and to set up a Sustainability Office to get the necessary staff in place, prioritize and implement the actions outlined and ensure a coordinated focus to their sustainability efforts. Achieving these steps will allow the Sustainability Committee and University community to move forward with implementation of this plan.

Source: University of Manitoba, 2012.

Student Engagement

While time and resources did not allow for consultation with students on campus, most institutions report that they do involve students in their sustainability programs in some way (see Chart 2). It is interesting to note that at least half consider that students have a role to play in identifying and developing goals, policies and strategies, and that in 25 per cent of the cases students drive the process. Half of the institutions responding have an active student-run organization devoted to sustainability efforts on campus. Some presidents confirmed that students are the ones who brought the need for specific sustainability policies to the administration, such as reducing or eliminating the sale of bottled water on campus.

STUDENT INVOLVEMENT AT RED RIVER COLLEGE AND THE UNIVERSITY OF WINNIPEG

Stephanie Forsyth, Red River College

"The Students' Association has a sustainability committee. They work on sustainability issues of their choosing and work with the Sustainability Office on items of mutual interest (i.e., bottled-water-free day, waste-reduction week etc.). The Sustainability Office makes presentations to classes at the invitation of instructors. The Office engages students in sustainability efforts through direct outreach. Various academic programs assign major projects with a sustainability focus. The Sustainability Office and other administration act as project advisors on topics like rainwater capture, compost quality, building efficiency."

Lloyd Axworthy, University of Winnipeg

"Students participate in the Campus Sustainability Council and run several initiatives that serve as hubs for driving change. These include the UWSA (University of Winnipeg Students' Association) Bike Lab, UWSA Community Garden project, and the UWSA Food Bank. The UWSA and the Campus Sustainability Office (CSO) co-organize the annual week-long Grass Routes Sustainability Festival. Students are given the opportunity to take on practicum opportunities in the CSO. Students recently prepared a thorough sustainability-related written submission to the University's strategic review consultation process."

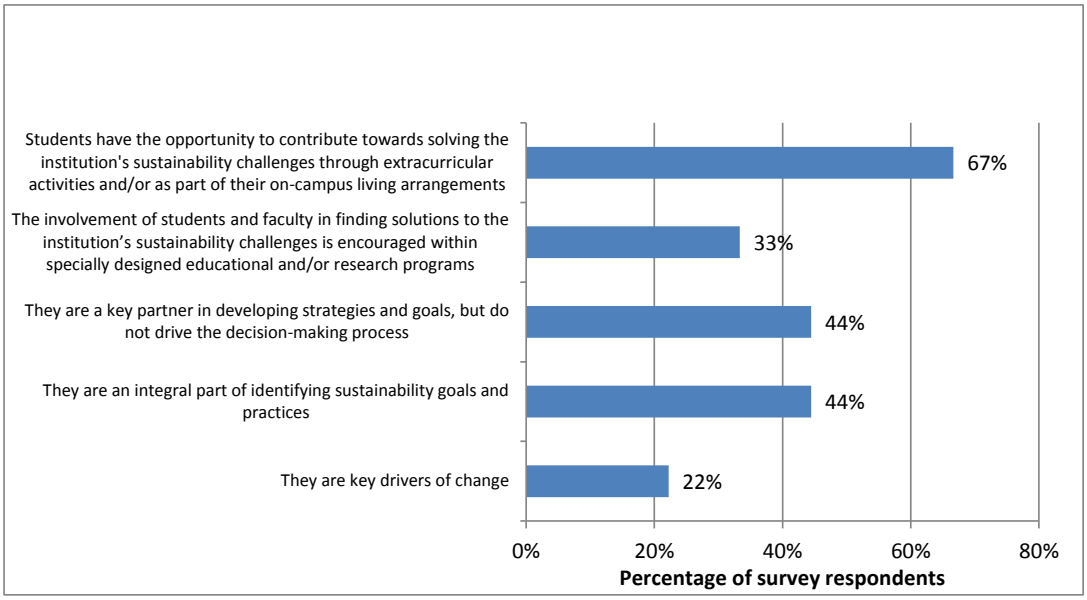

FIGURE 2: WAYS IN WHICH STUDENTS ARE INVOLVED IN THE INSTITUTION'S SUSTAINABILITY PROGRAM

Openness, Transparency and Accountability

Public communication is central to the openness, transparency and accountability of institutions for their commitments: as such it is an important component of institutional governance. While not all respondents provided website information about their sustainability commitments, two-thirds of the institutions have a website detailing their environment and sustainability initiatives.

Furthermore, institutions are active in seeking public recognition for their efforts, by standing for, and accepting, various awards. Forty-four per cent of the institutions have received awards or recognition related to their sustainability practices. These awards and recognitions include: the 2010 Manitoba Excellence in Sustainability Award from the Manitoba Round Table for Sustainable Development; a Golden Carrot Award from Food Matters for "helping to revolutionize campus food services at [the university], by providing sustainable, affordable, fair and delicious foods"; a Canadian Association of University Business Officers (CAUBO) Award; a Manitoba Excellence in Sustainability Award 2010 from the Chamber of Commerce; a 2011 Spirit of Winnipeg Award; and a 2012 Canada's Greenest Employer Award.

Three institutions also noted the importance of third-party validation, reporting on Manitoba Hydro Power Smart designations and LEED gold and silver certifications.

EXAMPLES OF WEBSITES DETAILING SUSTAINABILITY INITIATIVES

Brandon University:
http://www.brandonu.ca/rep/

Providence University College:
http://www.bullercentre.com/?page_id=40

Red River College:
http://blogs.rrc.ca/redgreen/

Université de Saint-Boniface:
http://univert.cusb.ca/

University of Manitoba:
http://umanitoba.ca/sustainability/

University of Winnipeg:
http://www.uwinnipeg.ca/index/sus-index

TABLE 4: AWARDS AND CERTIFICATIONS REPORTED ON IN THE SURVEY AND FOLLOW-UP CORRESPONDENCE

University of Winnipeg ➢ 2009 Manitoba Excellence in Sustainability Award to the University of Winnipeg Students' Association for its campaign to eliminate the sale of bottled water on campus, the first university in Canada to do so. ➢ 2010 Manitoba Excellence in Sustainability Award to Diversity Foods Services ➢ 2010 Food Matters Manitoba Golden Carrot Award to Diversity Food Services ➢ Two LEED Silver Buildings, one LEED Silver application in process, one LEED Gold application in process.
University of Manitoba ➢ Received the CAUBO Award Honourable Mention in Manitoba Sustainable Development Awards. ➢ 2008 Manitoba Excellence in Sustainability Award ➢ LEED Gold certification for Migizii Agamik (Bald Eagle Lodge); LEED Silver (pending) ART Lab ➢ Power Smart Efficiency Partner—Biological Sciences Building
Université de Saint-Boniface ➢ Manitoba Hydro (designation as Power Smart) ➢ Pending Gold LEED certification for Pavillon Marcel-A.-Desautels
Red River College ➢ 2009 Manitoba Excellence in Sustainability Award ➢ 2010 Chamber of Commerce Spirit of Winnipeg Award ➢ 2011 & 2012 Canada's Greenest Employer

Part 2: Operations and Facilities

In the "whole school" approach to education for sustainable development, the campus itself serves as an example of sustainable development in practice, and reinforces what students learn in their course work and research. The following section presents the survey results on sustainable development within campus operations and facilities management. Respondents reported on:

- Recycling and waste
- Purchasing and procurement
- Transportation and fleet management
- Energy
- Buildings

Recycling and Waste

Over half of the responding institutions have a waste reduction plan and are able to estimate their diversion rate. For those institutions, the average diversion rate is 37 per cent (noting in one case that the margins of error in their estimates may be significant). Nevertheless, the average rate is still higher than that of the municipalities in which they are located. According the City of Winnipeg (2012), for example, the diversion rate is only 15 per cent. This suggests that these institutions can serve as examples to both their students and their host communities.

In addition, over two-thirds of the institutions have a surplus materials exchange or recovery program (i.e., for computers, furniture, office supplies or lab equipment), with another two institutions planning to develop one. These efforts are supported by campus-wide programs (i.e., public awareness campaigns) specifically targeted at material use and reduction in five of the nine institutions in the survey group.

TABLE 5: ITEMS COLLECTED FOR RECYCLING OR APPROPRIATE DISPOSAL

	PROPORTION (NUMBER) OF SURVEYED INSTITUTIONS
Higher grades of paper (e.g., office paper, computer printout)	100% (9)
Lower grades of paper (e.g., mixed paper, colored paper, junk mail, newspaper, boxboard, magazines, craft paper)	100% (9)
Corrugated cardboard	89% (8)
Aluminum cans	100% (9)
Glass bottles and jars	67% (6)
Plastic bottles	100% (9)
Food scraps	22% (2)
Landscape trimmings for composting or mulching	44% (4)
Construction and demolition waste (scrap metal, wood, concrete, bricks or stone)	56% (5)
Non-construction scrap wood	22% (2)
Non-construction metal	67% (6)
Electronics (printers, computers, fax machines)	89% (8)
Printer cartridges	100% (9)
Batteries	67% (6)
Polystyrene	0% (0)
Fluorescent tubes and CFL	67% (6)
Hand towels from washrooms	0% (0)
Coffee cups	33% (3)
Motor oils	78% (7)
Grease and frying oils	56% (5)

INSTITUTIONAL WASTE MANAGEMENT/RECYCLING PROGRAMS

Red River College

The college converts its used cooking oil into fuel for their grounds services vehicles. "Pitch In" signs are located above across campus to provide a clear and consistent reminder of what can and can't be recycled. Battery bins have been strategically located throughout the campus to keep batteries out of the landfill.

University of Winnipeg

The university has an expanded recycling program to accommodate everything that is recycled at home except glass. This fall it partnered with the Forks Renewal Corporation to send all campus food scraps, containers and cutlery to the Forks to be turned into compost for landscaping, allowing for a neighbourhood-level solution to waste management.

University of Manitoba

Computer and electronic waste is collected by Physical Plant staff and is currently being shipped to Responsible Electronics Recycling in Selkirk, MB. The Waste Prevention Re-Shop is a free garage sale you can visit all year long on campus. The Re-Shop is open to students, staff and faculty from Fort Garry and Bannatyne Campuses who are encouraged to donate items that are unwanted but reusable, browse through the inventory and take away what they can use.

Purchasing and Procurement

While one institution reported that sustainable procurement was "cost prohibitive," and University College of the North reported that their procurement options in the North were limited, most respondents nevertheless do have an environmentally friendly sustainable purchasing strategy covering one or more indicators, including recycled content, energy efficiency, and/or sustainably managed or locally sourced resources (see Figure 3). However, one institutional leader commented that following these may not be done consistently. Two of the institutions have socially minded sustainable purchasing strategies that specify that products must be fair trade. Six institutions use third-party certifications, including LEED for construction and renovation of campus sites, Green Guard certification for furniture and Green Seal, EcoLogo and other certifications for cleaning products. In particular, one institution is working to influence its supply chain, by putting in place a "Vendor Code of Conduct."

In addition to procurement of goods and services in general, most institutions have implemented a sustainable food strategy (see Figure 4). An example of such a strategy is provided by The University of Winnipeg, where the Soma Café has pioneered the use of compostable take-out containers and local-sourcing of food on campus, making a significant contribution to the environmental sustainability of the university, and Diversity Foods offers nutritious, fairly priced and ethnically diverse food on campus and caters to the broader community. Wherever possible, Diversity Foods uses locally sourced foods and organic ingredients.

Respondents were asked whether their institution has a sustainability representative on the purchasing and procurement committee. However, not all institutions have such a committee, and only one respondent indicated that a sustainability representative participates on it. Another respondent noted that the Director of Purchasing Services does sit on the Campus Sustainability Council.

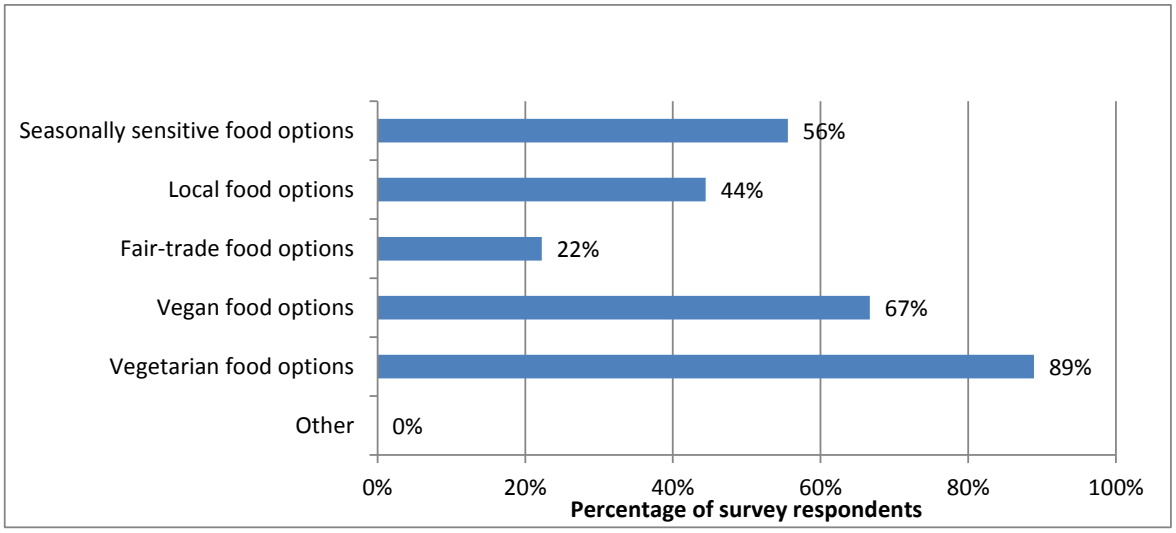

FIGURE 3: RESPONSES TO THE QUESTION "WHAT ENVIRONMENTALLY FRIENDLY SUSTAINABLE PURCHASING STRATEGIES HAS YOUR INSTITUTION IMPLEMENTED?"

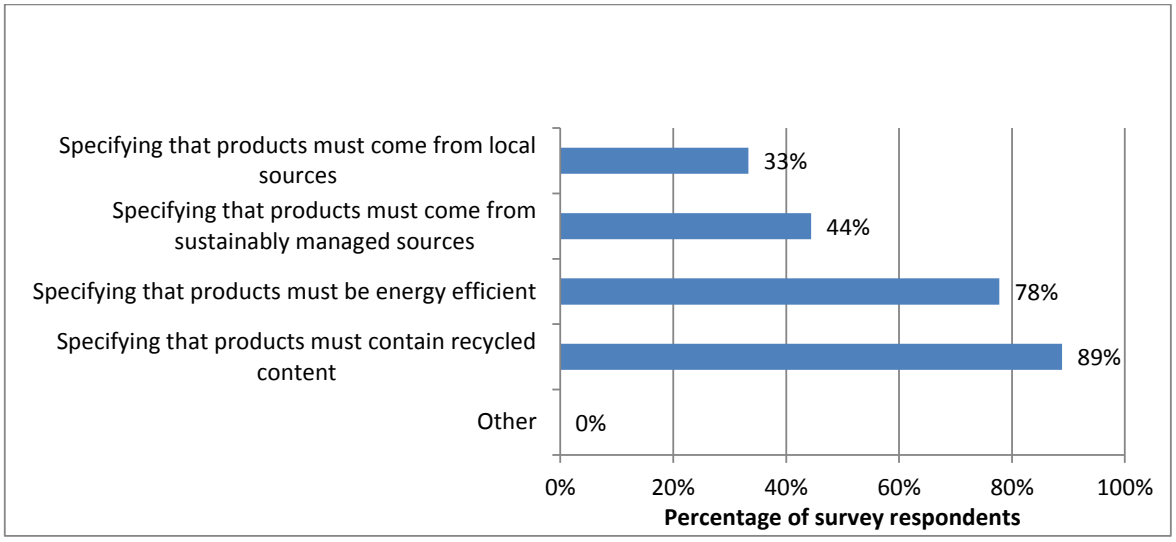

FIGURE 4: RESPONSES TO THE QUESTION: "WHAT SUSTAINABLE FOOD STRATEGIES HAS YOUR INSTITUTION IMPLEMENTED?"

Transportation and Fleet Management

More sustainable forms of transportation for students, faculty and staff are being encouraged in most of the respondent institutions, although the emphasis lies primarily in supporting cycling, with three-quarters providing secure bike racks. A third offers discounted bus passes for students, and nearly 50 per cent offer carpooling programs.

Most of the institutions surveyed owned only a limited number of vehicles (ranging from none to three or four, with a few in the 10 to 20 range and only one reporting 147 vehicles, excluding tractors and other heavy duty vehicles). Three of the institutions have vehicles that use alternative energy sources or fuels (e.g., electric, hybrid electric, natural gas, propane, biodiesel, biofuels, etc.). Of those, alternative energy vehicles make up an average of 50 per cent of the total fleet.

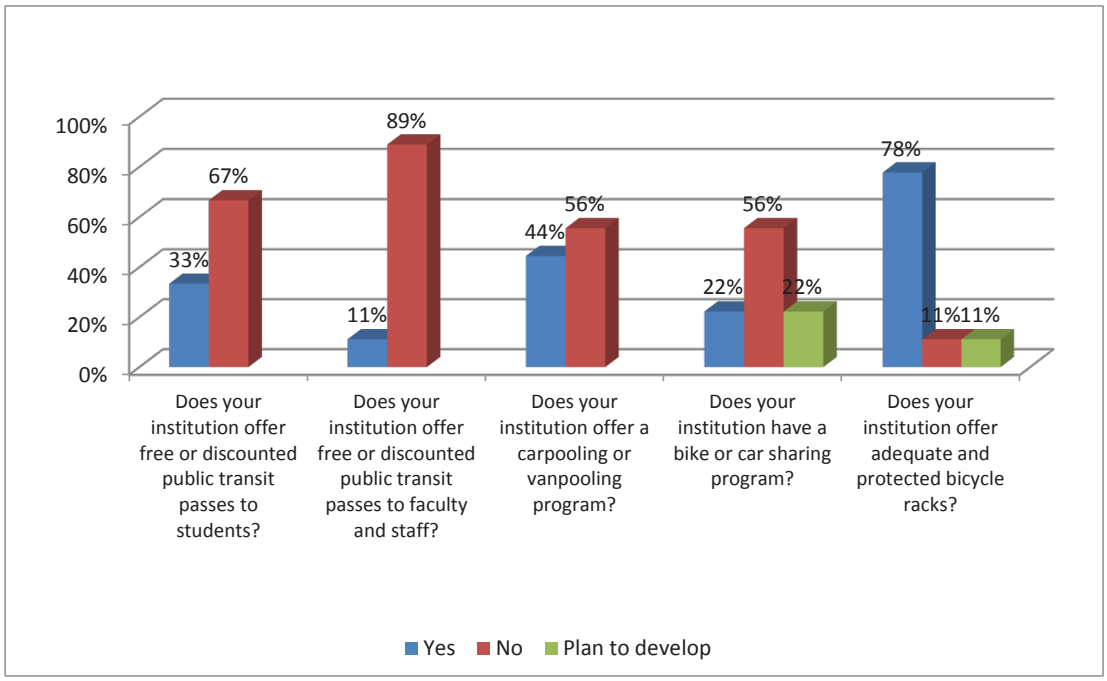

FIGURE 5: TRANSPORTATION

EXAMPLES OF INNOVATIVE PRACTICES IN THE AREA OF TRANSPORTATION

Providence University College

Providence University College is a 40-minute drive south of Winnipeg—close enough to commute, but far enough away to feel isolated. The college's rural transit initiative is working with seniors' groups, rural municipalities and students to develop a transit system that would link Providence and surrounding communities to Winnipeg. This service would combine transportation to seniors with a shuttle system for Providence. This transit system would be open to the public, would be wheelchair accessible, and would serve the communities along the Highway 59 South corridor.

Red River College

As a result of Collective Bargaining, all staff employed at any Red River College downtown location are entitled to a 60 per cent discount on monthly transit passes. RRC is one of nine Winnipeg employers who subscribes to carpool.ca, which is an online ride matching service for carpoolers.

University of Manitoba

Initiated and operated by students, the Bike Dungeon is a space where students, faculty and staff can go to receive training and tips on how to repair and maintain a bicycle. Bike Dungeon volunteers also reclaim bikes that have been abandoned and deconstruct them for their parts. The university also has over 500 bike-rack parking spots.

University of Winnipeg

The Student Association operates its own Bike Lab, where students, faculty, staff and the surrounding community can come to use the tools and knowledge of the dedicated volunteer staff to learn how to fix their own bikes and learn more about cycling as a form of active transportation.

Energy Management

Over half of the institutions have implemented significant new energy management programs to curb CO_2 and other greenhouse gas emissions in the past three years. The majority of the institutions have a district energy system, and a few have either a cogeneration operation or a tri-generation operation (see Chart 6). Several institutions have a renewable energy installation (see Chart 7) However, all institutions noted that the percentage of energy that comes from on-campus generated renewable sources is 10 per cent or less. The University of Winnipeg has installed a hybrid heating system that will enable the university to replace higher-emitting natural gas with lower-emitting hydro electricity during off-peak times. Its McFeetors Hall (student residence) uses a geothermal system for heating common areas. In addition to a geothermal installation in one of its main buildings, Providence University College has installed a new biomass heating unit that will replace existing natural gas units and heat upwards of 90% of the college campus when brought online. The Biomass Unit is a boiler that uses wood pellets and waste straw, from local producers, as fuel to produce heat. The President of Providence University College has stated that the College aims to be a zero emissions institution. However, no date was given as to when this target will be achieved.

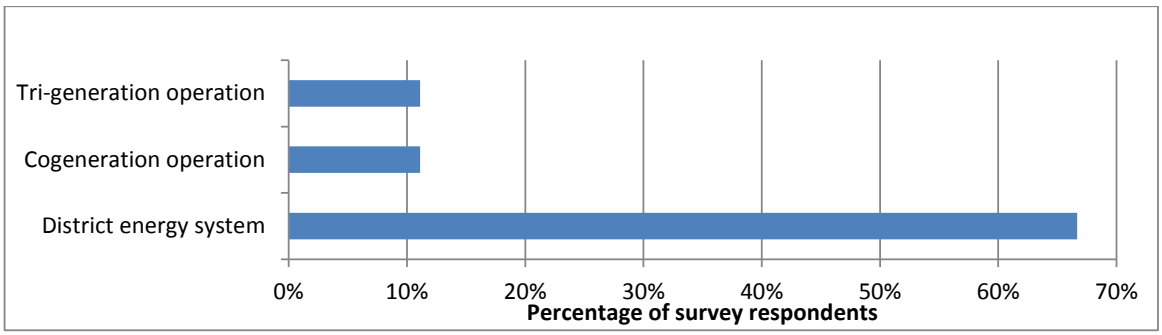

FIGURE 6: RESPONSES TO THE QUESTION "WHICH OF THE FOLLOWING DOES YOUR INSTITUTION HAVE?"

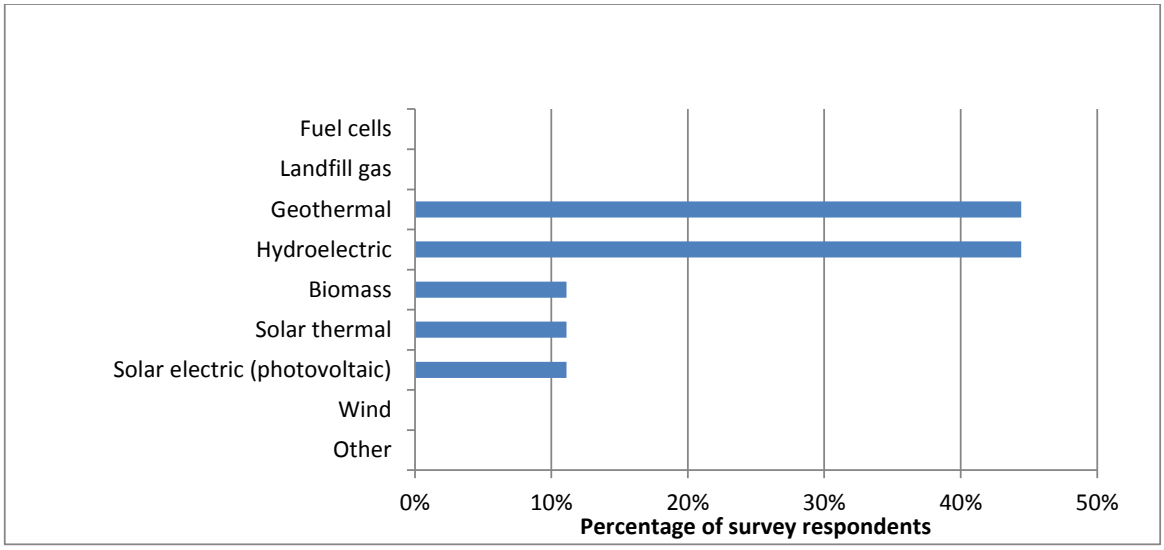

FIGURE 7: RESPONSES TO THE QUESTION "WHICH OF THE FOLLOWING RENEWABLE ENERGY INSTALLATIONS DOES YOUR INSTITUTION HAVE?"

Buildings

Eight of the nine of the institutions in the survey have implemented efficiency standards for new buildings or retrofits of existing buildings, with four following LEED (Leadership in Energy and Environmental Design) or other standards (such as Building Owners and Managers Association [BOMA]) as an accepted practice without seeking certification, and, according to the interview data, with several others securing, or planning to secure, certification. Seven have adopted LEED or BOMA standards specifically for new buildings, with five also following those standards for retrofits of existing buildings.

Most institutions have implemented water-efficiency upgrades through various low-flow technologies (see Figure 8). However, more innovative water management techniques are not yet in place. Only one institution has a water reuse strategy to recycle grey water, and two have a strategy to reuse storm water. Two employ bioswales[9] as a rain or storm water management technique, one uses cisterns and one has also developed rain gardens.[10]

Two institutions have implemented green roofs on buildings (roofs planted with vegetation).

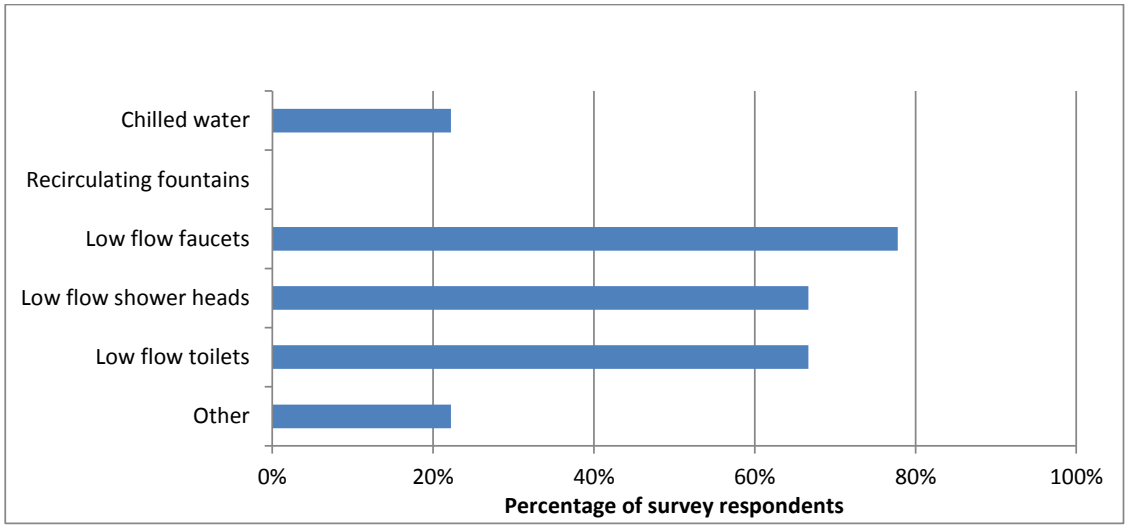

FIGURE 8: RESPONSES TO THE QUESTION "WHAT WATER EFFICIENCY UPGRADES HAS YOUR INSTITUTION IMPLEMENTED?"

[9] A natural filter built into the landscape to trap silt and pollutants from surface runoff water (from roofs, parking lots, and so forth) before flowing into storm drains.
[10] A planned depression in landscaping to allow rain water to be absorbed rather than run off into storm drains.

Part 3: Students, Curriculum and Research

Curriculum

The Talloires Declaration asks signatories to "establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens." The Association of Canadian Community Colleges asks adopters of its Protocol on Sustainability to "integrate the principles of sustainability within curriculum to enable students and communities to develop competencies and commitment to contribute to a sustainable future."

Nevertheless, the challenge of introducing, enhancing or reorienting curriculum is significant for tertiary level institutions. The tradition of academic freedom and the checks and balances put in place to ensure courses are rigorous, academically and technically sound can serve to prolong the process of change. As one respondent commented, "Curriculum development is the responsibility of individual departments. University administration can offer supports and levers to encourage this activity.

The processes for curriculum development at colleges can be quite different from those at universities. Industry involvement in college curriculum development, for example, is very important. In spite of arduous processes in place for new courses or curricular changes, progress has been made in Manitoba institutions in the development of programs and courses related to sustainable development. Red River College (Red Goes Green, n.d.) offered the following definition of what constitutes "sustainable development in the curriculum":

> An interdisciplinary approach to providing students with the knowledge, skills and attitudes which will enable them to appreciate the interdependence between social justice, sound economics, and meaningful environmental practices in today's world.

In its STARS reporting (AASHE, 2012), Red River College further distinguishes between sustainability-focused courses as:

- those which include all three elements of sustainability (social, environmental, economic) as main themes within the course (reported on their website to be 78 in total),

  and sustainability-related courses as:

- those which include at least one of the three elements of sustainability (social, environmental, economic) as a main theme within the course (reported on their website to be 511 in total).

Through participating in the STARS project, Red River College knows that sustainability principles are being taught in fewer than 10 per cent of its courses. Red River College has recently made a commitment to increasing the sustainability literacy of its students, faculty and staff. It is undertaking several initiatives to meet the commitment, including:

- Expanding "Service-Learning" in College programs
- Providing more sustainability training opportunities for faculty
- Working with industry to identify sustainability requirements of the job market
- Providing a "Sustainability at Red River College" resource for faculty use

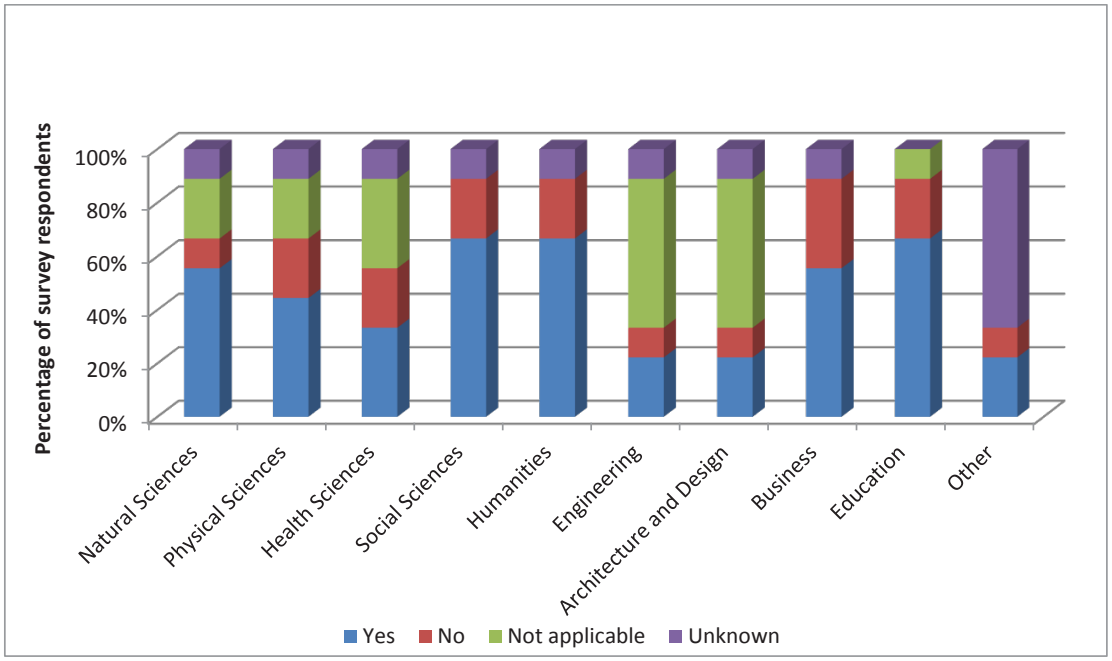

FIGURE 9: RESPONSES TO THE QUESTION "DO DEPARTMENTS IN THE FOLLOWING AREAS OFFER ANY UNDERGRADUATE COURSES ON ENVIRONMENTAL AND/OR SUSTAINABILITY ISSUES?"

TABLE 6: RESPONSES TO THE QUESTION "WHAT EDUCATIONAL OFFERINGS ARE AVAILABLE AT THE INSTITUTION?"

	NUMBER OF SURVEYED INSTITUTIONS	NUMBER THAT PLAN TO DEVELOP . . .
An undergraduate major/specialist, or a diploma/certificate in environmental or sustainability studies	6	1
An undergraduate minor in environmental or sustainability studies	1	1
An undergraduate interdisciplinary degree in environmental or sustainability studies	4	1
An undergraduate certificate or other recognition in environmental or sustainability studies	1	1
Direct-entry environmental or sustainability Master's program	1	0
Collaborative environmental or sustainability Master's program between multiple departments or units	1	0
Direct-entry environmental or sustainability Doctoral program	1	0
Collaborative environmental or sustainability Doctoral programs between multiple departments or units	1	0

The University of Winnipeg suggests it will be very important "to engage faculty in the process of establishing the criteria and definition of sustainability to apply as we work to identify sustainability content in courses and research."

No other institution offered a definition of sustainable development in the curriculum, although four respondents identified sustainability-focused and sustainability-related courses for the purpose of this survey.

It is also worth noting that four of the institutions have incorporated sustainability into experiential learning service programs or other volunteer programs, while another three plan to do so. For example, at the University of Winnipeg,

> "students are offered the opportunity to undertake practicums in the Campus Sustainability Office (CSO) and in several Environmental NGOs in Winnipeg through various practicum courses offered through departments include English and Rhetoric, Writing & Communications. In 2011/2012, a practicum student wrote the content for the CSO's mobile website and another created education videos about food choices and proper recycling & composting practices."

GROWTH IN COURSE OFFERINGS

Information provided by four respondents suggests that sustainability focused or related course offerings at those institutions amount to between 15 and 20 per cent of all courses. Two of the institutions offer incentives to assist faculty to expand sustainability course offerings. Incentives may include providing release time, funding for professional development, and training offered by the institution.

CURRENT BRANDON UNIVERSITY COURSE OFFERINGS

15:273 General Ecology; 15:275 Pollution Biology; 18:451 Environmental Chemistry; 31:192 Environmental and Resource Issues; 31:272 Environmental Geology; 31:374 Wildlife Resource Management; 31:451 Environmental Chemistry; 31:476 Environmental Impact Assessment and Reporting; 38:290 Global Environmental Change; 38:492 Resource Management and Sustainable Development; 70:266 Environmental Ethics; 82:282 Environmental Psychology; 88:552 Sustainability in Rural Development; 69:360 Community Health; 03:455 Environmental Science Methods.

UNIVERSITY OF MANITOBA DEGREE PROGRAMS

Bachelor of Arts in Geography (Honours); Bachelor of Arts in Geography (Advanced); Bachelor of Arts in Geography; Bachelor of Environmental Science (Honours); Bachelor of Environmental Science (Major); Bachelor of Environmental Science; Bachelor of Environmental Studies (Honours); Bachelor of Environmental Studies (Major); Bachelor of Environmental Studies; Bachelor of Science in Geological Sciences (Honours); Bachelor of Science in Geological Sciences (Major); Bachelor of Science in Geological Sciences; Bachelor of Science in Physical Geography (Honours); Bachelor of Science in Physical Geography (Major); Master of Environment and Geography (M.Env); M.A/M.Sc. Natural Resources Management (MNRM); Ph.D. Environment and Geography (Ph.D).

EXAMPLES OF INNOVATIVE NEW COURSES AND PROGRAMS BEING OFFERED

University of Manitoba

Education for Sustainability, Summer Institute: What does a sustainable future look like? What does a sustainable future require of Manitobans and Canadians in terms of how they live their lives? What is the responsibility and role of education and schooling in working toward a sustainable future? What curricular and instructional implications does the idea of teaching and learning for a sustainable future have? What strategies have been suggested for classroom teachers, administrators, and other educators for implementing education for sustainability? This summer institute will engage participants in these and related questions. The institute is designed to assist school educators with developing a deeper understanding of, commitment toward, and competency in implementing education for sustainability in their respective educational contexts.

More information is available at: http://umanitoba.ca/faculties/coned/summer/programs/institutes.html

The University of Winnipeg

Education for Sustainability Post Baccalaureate Diploma in Education: The Post Baccalaureate Diploma in Education (PBDE) is a program that can suit the needs of teachers, team leaders in science and social studies, and educators in informal educational settings such as museums and outdoor education institutions. This program is delivered using a unique hybrid online/on-campus model, intending to make the program accessible to all teachers throughout the province. This stream will give students a comprehensive overview of formal and informal approaches to education for sustainable development.

More information is available at: http://education.uwinnipeg.ca/pdf_files/ESD%20Booklet.pdf

Learning Outcomes and Career Guidance

Seventy-eight per cent of the institutions identified the number of students that graduated in 2010/2011 with a degree that has, as a learning outcome, the aim to develop specific sustainability knowledge and skills. Compared to their total number of graduates, this suggests that nearly a quarter of their graduates have attained specific knowledge and skills related to sustainability. It should be noted that the learning outcome may have only addressed one or two of the pillars of sustainability (social, economic or environmental) without necessarily having all of the pillars.

What is interesting, however, is that only two institutions provide guidance specifically about careers related to sustainable development through their career services (with one planning to do so). While students may be graduating with the knowledge and skills for sustainable development, they may not know how to apply their learning attainments toward "green jobs" and careers that support sustainable development.

Student Recruitment and Engagement

Three of the institutions have a recruiting program to attract students interested in studying environmental and or sustainability issues, while another plans to develop such a program. Two of the institutions provide student scholarships related to sustainability, and one plans to do so.

In addition to working with faculty on curriculum and programs, post-secondary institutions have other means for orienting students' learning experiences towards sustainable development. For example, over half of the survey respondents report that a portion of their new student orientation specifically covers sustainability, with another institution planning to develop such a program.

TABLE 7: RESPONSES TO THE QUESTION "HOW DO THE INSTITUTIONS INCORPORATE SUSTAINABILITY INTO NEW STUDENT ORIENTATION?"

	PROPORTION (NUMBER) OF SURVEYED INSTITUTIONS
Skits, speakers, or presentations that take place in large venues that most or all first-year students attend. Topics must include at least one of the following: promoting the Office of Sustainability, student campus sustainability groups, or sustainability as an important campus issue.	33.% (3)
Incorporating sustainability information into presentations made by RAs to individual hallways.	33.3% (3)
Active engagement of students in activities that raise awareness about sustainability, highlight how sustainability occurs on campus, or in which students take part in a productive activity, such as volunteer work or projects (e.g., working in the on-campus garden).	22.2% (2)
Making orientation more sustainable through efforts such as a zero-waste meal or carbon offsets.	11.1% (1)

Students can also become active on campus through student sustainability committees, with over half of the respondents reporting that such committees and groups exist on their campuses. Four of the nine institutions organize sustainability challenges/competitions for their campus and/or with other colleges or universities. These include Waste Reduction Week (Provincial), The Commuter Challenge and Campus Commuter Challenge (Provincial/National), The Omnivore's Dilemma (internal), Inter-residence Waste Reduction Challenges (internal), Commuter Challenge (internal), Inter-department Challenges, EcoMug Target Competitions, The Sustainability Pledge, and others.

Research

Embedded in many of the international declarations and work plans on the role of post-secondary education in sustainable development (referenced in Appendix 3) is the call for more research to address the economic, social and environmental challenges facing the world. While no institution in the response group provided a definition of sustainability research, nevertheless respondents from seven institutions were able to identify the number of faculty members that are engaged in sustainability research. For these institutions, the average number of faculty engaged in sustainability research to the total number of faculty engaged in research is 27 per cent. Nevertheless, a detailed tracking of sustainability-related research is not available at most institutions. We should note too that colleges do not have research as part of their core mandate, although individual faculty members may choose to conduct research. Only one institution has a program to encourage faculty members to undertake research related to sustainable development, and only two have programs to encourage students to undertake sustainability research. One institutional leader noted that "Students regularly engage in research with faculty members working on sustainability issues and access the same sources of funding and support as other student researchers." Only two noted that positive recognition is given specifically to sustainability research during faculty promotion and tenure decisions.

Part 4: Drivers, Barriers and Challenges for Advancing ESD at the Post-Secondary Level

The drivers for moving post-secondary institutions advance education for sustainable development appear to be primarily internal at this point in time. According to the president interviews, external drivers appear to have little influence:

- Few institutional leaders suggested that the Manitoba Sustainable Development Act had an influence on their sustainability practices. One cited the "lack of action from the Province of Manitoba in relation to implementing the Sustainable Development Act." Another institutional leader stated that:

  While the university's composting program could once access money from Green Manitoba, this is no longer the case - the transition of waste diversion funding from Green Manitoba to Extended Producer Responsibility Boards such as MMSM has left a funding gap for composting programs.

- Few institutional leaders believed that they had been influenced by the UN Decade for Education for Sustainable Development (UN DESD). It was noted that Faculties of Education within the institutions have been working with Manitoba Education on ESD issues for several years and, as such, might express more influence from the UN DESD. However, specific faculty-level responses were not gathered in this study.

As noted through the interview process, the commitment to sustainability is derived from one or more of the following: the principles and values of the institution, a focus on community embeddedness, the desire for recognition for strategic innovation and industry leadership, and responsiveness to student, faculty and board stakeholders. However, even with these high level internal drivers, survey respondents noted that a dedicated staff or sustainability coordinator is critical to be able to bring together the necessary resources to undertake ESD in a more comprehensive and systematic manner.

With respect to barriers and challenges, the survey results reinforced and added to the main messages from the interviews:

- Financial constraints are a significant barrier to undertaking ESD. Lloyd Axworthy of the University of Winnipeg commented:

  It remains a challenge to access funds aimed at measures that will reduce resource consumption on campus. 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 [the university'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 financing to undertake the current energy retrofit project, there is much progress to be made in the area of funding sustainability change management and project implementation.

- The lack of access to good practice on ESD: Several institutional leaders mentioned that research on college and university best practices in the area of ESD would be highly beneficial.

- The lack of clarity and shared understanding of concepts and terminology in the sustainable development domain. Some respondents noted that terms such as ESD and the Green Economy are confusing and misleading to some students and faculty members—for example, whether the Green Economy concept is solely concerned with the environment and economy or encompasses social considerations as well. One institutional leader noted that "A lack of awareness about the breadth of sustainability is a barrier. There are many faculty and staff members who do not know that sustainability encompasses three dimensions and that many aspects of their work and the curriculum they teach relate to sustainability." Another institutional leader noted that sustainability is a cross-cutting issue but there is a prevalent perception that "sustainability is 'someone else's' job." As one respondent remarked:

  Conditions to foster sustainability [at our university] include a collaborative and enabling environment and a clear and visible demonstration of support from senior administrators both in principle and by providing the necessary resources to yield results. A student body that is informed and engaged and is willing to be a part of the campus sustainability "movement" is also critical to advance sustainability at [our university].

VI. Observations and Opportunities

The aim of ESD is to help people develop the attitudes, skills and knowledge to make informed decisions for the benefit of the planet, themselves, and others, both now and in the future. Manitoba Education has made a commitment to reorienting K–12 toward these outcomes. This study has sought to gain a better understanding of what the post-secondary education system has to offer Manitoba students once they graduate from secondary schools with respect to institutional commitments to sustainable development, courses and research. The study has also explored whether Manitoba campuses reflect a "whole school" learning environment, in which what the students are being taught is reflected in the daily operations of the campuses around them, consistent with the approaches now being encouraged in K–12 school divisions across the province. Through this study we have found that colleges and universities are active in ESD, but that more could be shared across the institutions, and with government and industry stakeholders. As well, the institutions are considering what more they want and need to do. With this initial exploration complete, the stage is now set for work that will be needed from K–12 through to the post-secondary level to prepare Manitoba's youth to help build a green economy in this province, consistent with the government's new Green Plan.

The study has shown that institutions tend to adopt one or more of the following orientations towards ESD: (i) community embeddedness, (ii) principles-and values-infused, (iii) industry-based focus, (iv) strategic innovation and responsiveness to stakeholders. In addition, it appears that motivations for undertaking ESD differ based on these orientations. Although one or two orientations usually dominate the motivations for undertaking ESD, it could be argued that all are, to a greater or lesser extent, motivated by the individual principles that underlie all five. Most institutions recognize, to some extent, their reciprocal dependence on their community; the societal role to prepare students for a sustainable future; the importance of developing programs for jobs in the green economy; the power of sustainability visions in mobilizing various diverse stakeholders to achieve institutional goals, and; the importance of being responsive to stakeholders. In some cases, these motivations can be stimulated by government policies to enact beneficial behaviours across the province in line with the goals of delivering enhanced public value. Stimulating the motivations of community embeddedness at the University of Winnipeg, for example, can help improve the lives of inner-city children and families. Stimulating industry-based leadership can help support the province's green plan. Encouraging strategic innovation can help attract and retain students and faculty members. Promoting stakeholder reactiveness can enhance the educational mandate of colleges and universities. Stimulating these motivations requires careful consideration of the barriers that these institutions face. Most prominent among these are constraints due to limited financial resources.

The province's Green Plan may provide an important impetus for advancing ESD from K–12 through to the post-secondary level. Whereas the green economy is one in which the maximization of economic value and growth is based on the sustainable management of natural and social assets, ESD can help supply a workforce with the right skills to support and enable a transition to a thriving low-carbon and environmental goods and services sector in Manitoba. While this study touched on ESD-related curriculum—suggesting that there is a start of a foundation of education and training available in the province that can support the Green Plan—a more precise mapping of provincial needs under the Green Plan and what is currently available may be warranted. In particular, we would note that the survey responses did not provide any in-depth information on research related to sustainability. Further study would be warranted, particularly in the context of what research is underway that could contribute to achieving the goals of the Green Plan.

Beyond economic development, however, is the desire to help the province's youth live in more sustainable ways. Since 2009, K–12 students in Manitoba are being prepared for lifelong learning and citizenship in a democratic, socially just and sustainable society. The research suggests that there are some transition mechanisms in place at the post-secondary level – in particular, student orientation programs -- that can reinforce what students have learned through K–12. Furthermore, consistent with "whole school" approaches now being taken in several K–12 school divisions across the province, Manitoba campuses are well on their way to creating learning environments that reflect sustainability in their daily operations. We would note in particular that the University of Manitoba, the University of Winnipeg and Red River College have developed institution-wide sustainability plans. As we observed from the survey and President interviews, the thrust for undertaking ESD at these institutions seems to be solid and understood across administrative departments. Sustainability planning and reporting should be encouraged at all of the colleges and universities in order to reinforce the culture and practice of sustainability in their student body.

We would also note that K–12 schools and post-secondary institutions are beginning to collaborate on sustainability projects that address issues in the community, such as climate change, social justice, waste and consumption, poverty, and so forth. These collaborative projects can have significant benefits for all involved. In addition, post-secondary institutions' faculty members and students are also becoming a resource for classroom teachers. We would encourage this to continue and be strengthened over the long term, as this helps to ensure that teachers are building their capacities in sustainability, and students are learning and sharing with others in their community.

Manitoba has the potential to become the best place to learn about sustainability in action and conduct related research, but more work is needed to plan and support the transition from K–12 to opportunities at post-secondary institutions. There is a potential for the post-secondary sector as a whole to contribute collectively to a vision for the province that not only meets the objectives of the Green Plan, but ensures that Manitoban youth will have the knowledge, values and lifestyles necessary for a sustainable future.

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Appendix 1: The Talloires Declaration

We, the presidents, rectors, and vice chancellors of universities from all regions of the world are deeply concerned about the unprecedented scale and speed of environmental pollution and degradation, and the depletion of natural resources.

Local, regional, and global air and water pollution; accumulation and distribution of toxic wastes; destruction and depletion of forests, soil, and water; depletion of the ozone layer and emission of "green house" gases threaten the survival of humans and thousands of other living species, the integrity of the earth and its biodiversity, the security of nations, and the heritage of future generations. These environmental changes are caused by inequitable and unsustainable production and consumption patterns that aggravate poverty in many regions of the world.

We believe that urgent actions are needed to address these fundamental problems and reverse the trends. Stabilization of human population, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature.

Universities have a major role in the education, research, policy formation, and information exchange necessary to make these goals possible. Thus, university leaders must initiate and support mobilization of internal and external resources so that their institutions respond to this urgent challenge.

We, therefore, agree to take the following actions:

1. Increase Awareness of Environmentally Sustainable Development
Use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmentally sustainable future.

2. Create an Institutional Culture of Sustainability
Encourage all universities to engage in education, research, policy formation, and information exchange on population, environment, and development to move toward global sustainability.

3. Educate for Environmentally Responsible Citizenship
Establish programs to produce expertise in environmental management, sustainable economic development, population, and related fields to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens.

4. Foster Environmental Literacy For All
Create programs to develop the capability of university faculty to teach environmental literacy to all undergraduate, graduate, and professional students.

5. Practice Institutional Ecology
Set an example of environmental responsibility by establishing institutional ecology policies and practices of resource conservation, recycling, waste reduction, and environmentally sound operations.

6. Involve All Stakeholders

Encourage involvement of government, foundations, and industry in supporting interdisciplinary research, education, policy formation, and information exchange in environmentally sustainable development. Expand work with community and nongovernmental organizations to assist in finding solutions to environmental problems.

7. Collaborate for Interdisciplinary Approaches

Convene university faculty and administrators with environmental practitioners to develop interdisciplinary approaches to curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.

8. Enhance Capacity of Primary and Secondary Schools

Establish partnerships with primary and secondary schools to help develop the capacity for interdisciplinary teaching about population, environment, and sustainable development.

9. Broaden Service and Outreach Nationally and Internationally

Work with national and international organizations to promote a worldwide university effort toward a sustainable future.

10. Maintain the Movement

Establish a Secretariat and a steering committee to continue this momentum, and to inform and support each other's efforts in carrying out this declaration.

Appendix 2: Canadian Signatories to the Talloires Declaration (as of June 18, 2011)

INSTITUTION	CITY	PROVINCE
Grant MacEwan College	Edmonton	Alberta
University of Calgary	Calgary	Alberta
University of Lethbridge	Lethbridge	Alberta
Emily Carr Institute of Art and Design	Vancouver	British Columbia
Okanagan College	Kelowna	British Columbia
Royal Roads University	Victoria	British Columbia
Simon Fraser University	Burnaby	British Columbia
University of British Columbia	Vancouver	British Columbia
University of Northern British Columbia	Prince George	British Columbia
University of Victoria	Victoria	British Columbia
Vancouver Island University	Nanaimo	British Columbia
University of Manitoba	Winnipeg	Manitoba
University of Winnipeg	Winnipeg	Manitoba
Saint Thomas University	Fredericton	New Brunswick
Acadia University	Wolfville	Nova Scotia
Atlantic School of Theology	Halifax	Nova Scotia
Dalhousie University	Halifax	Nova Scotia
Mount Saint Vincent University	Halifax	Nova Scotia
Saint Francis Xavier University	Antigonish	Nova Scotia
Saint Mary's University	Halifax	Nova Scotia
University College of Cape Breton	Sydney	Nova Scotia
Algonquin College	Ottawa	Ontario
Carleton University	Ottawa	Ontario
Lakehead University	Thunder Bay	Ontario
McMaster University	Hamilton	Ontario
Ryerson Polytechnical Institute	Toronto	Ontario
University of Guelph	Guelph	Ontario
University of Ottawa	Ottawa	Ontario
University of Western Ontario	London	Ontario
University of Windsor	Windsor	Ontario
York University	Toronto	Ontario
Bishop's University	Sherbrooke	Quebec
Concordia University	Montreal	Quebec
Dawson College	Westmount	Quebec
McGill University	Montreal	Quebec
Université de Montréal	Montreal	Quebec
University of Saskatchewan	Saskatoon	Saskatchewan

Appendix 3: Key National and International Declarations

YEAR	DECLARATION/CHARTER	PARTNERS(S) INVOLVED	SCOPE	KEY WORDS
1990	Talloires Declaration	University Leaders for a Sustainable Future	Global	Unprecedented scale and speed of pollution and degradation Major roles: education, research, policy, information exchange Reverse the trends
1991	Halifax Declaration	Consortium of Canadian Institutions; IAU; UNU	Global	Responsibility to shape their present and future development; Ethical obligation; Overcome root causes
1993	Kyoto Declaration on Sustainable Development	IAU	Global	Better communication of the what and why of SD; Teaching and research capacity; Operations to reflect best SD practice
1993	Swansea Declaration	Association of Australian Government Universities	Global	Educational, research and public service roles; Major attitudinal and policy changes
1994	COPERNICUS University Charter for Sustainable Development	Association of European Universities	Regional (Europe)	Institutional commitment; Environmental ethics and attitudes; Education of university employees; Programs in environmental education; Interdisciplinarity; Dissemination of knowledge; Networking; Partnerships; Continuing education programmes; Technology transfer
2001	Lüneburg Declaration	Global Higher Education for Sustainability Partnership	Global	Indispensable role; Catalyst for SD building a learning society; Generate new knowledge to train leaders and teachers of tomorrow; Disseminate SD knowledge; State-of-the-art knowledge; Continually review and update curricula; Serve teachers; Lifelong learners
2002	Unbuntu Declaration	UNU, UNESCO, IAU, Third World Academy of Science, African Academy of Sciences and the Science Council of Asia, Copernicus-Campus, Global Higher Education for Sustainability Partnership and University Leaders for Sustainable Future.	Global	Called for the creation of a global learning environment for education in sustainable development; to produce an action-oriented tool kit for universities designed to move from commitment to action; to indicate strategies for taking sustainable development; to suggest strategies for reform, particularly in such areas as teaching, research, operations and outreach; and to make an inventory of best practice and case studies.
2005	Graz Declaration on Committing Universities to Sustainable Development, Austria	COPERNICUS CAMPUS, Karl-Franzens University Graz, Technical University Graz, Oikos International, UNESCO	Global	Called on universities to give status to SD in their strategies and activities. It also called for universities to use SD as a framework for the enhancement of the social dimension of European post-secondary education.
2005	Bergen	European education ministers, European Commission and other consultative members	Regional (Europe)	Made, for the first time since 1999, a strong reference that the Bologna Process for establishing a European Higher Education Area by 2010 and promoting the European system of post-secondary education worldwide should be based on the principle of sustainable development.
2006	American College and University Presidents' Climate Commitment	AASHE	National (USA)	Called for an emissions inventory; Within two years, universities are to set a date for becoming "climate neutral"; Integrating sustainability into the curriculum and make it part of the educational experience; make action plan, inventory and progress reports publicly available.
2008	Declaration of the Regional Conference on Higher Education in Latin America and the Caribbean–CRES 2008	UNESCO	Regional (Caribbean and Latin American)	Emphasis on SD for social progress; Cultural identities; Social cohesion; Poverty; Climate Change; Energy Crisis; Culture of Peace; Need contributes to democratic relations and tolerance; Solidarity and cooperation; Critical and rigorous intellectual ability
2008	Sapporo Sustainability Declaration	G8 University Network	Global	Universities should work closely with policy-makers; Universities' leadership role is becoming increasingly critical; Educating; Disseminating information; Training leaders; Interdisciplinary perspective.

2009	World Conference on Higher Education	UNESCO	Global	Advance understanding of multifaceted issues and our ability to respond; Increase interdisciplinary focus; promote critical thinking; Active citizenship; peace, wellbeing, human rights Contribute to education of committed ethical citizens
2009	Turin Declaration on Education and Research for Sustainable and Responsible Development, Italy	G8 University Network	Global	It called for new models of social and economic development consistent with sustainability principles; Ethical approaches to sustainable development; New approaches to energy policy; Focus on sustainable ecosystems.
2012	Rio+20 Declaration of Higher Education Institutions	UN Academic Impact, UNESCO, UNEP, UN Global Compact, PRME, UNU	Global	Revising teaching content to respond to global and local challenges; Promoting teaching methods that enable students to acquire skills such as interdisciplinary thinking, integrated planning, understanding complexity, cooperating with others in decision-making processes; Participating in local, national and global processes towards sustainable development.
n.d.	University and College Presidents' Climate Change Statement of Action for Canada	The Research Universities' Council of British Columbia	Canada	The Statement expands on the successful American College & University Presidents' Climate Commitment (ACUPCC), which now has over 600 signatories that have committed to becoming climate neutral. Like the ACUPCC, the Canadian Statement focuses on both the responsibility of universities to reduce emissions, as well as opportunities to accelerate larger solutions beyond their campuses.

Adapted from Tilbury, 2011.

Appendix 4: The Association of Canadian Community Colleges' Pan-Canadian Protocol for Sustainability

The signatory institutions to this protocol agree to maximize their contribution to a sustainable future and are committed to their role as leaders to their internal and external communities.

In the context of this protocol, sustainability is institutionally defined and may include environmental, economic and social dimensions.

The signatory institution agrees to undertake the following:

- Establish a sustainability policy;
- Incorporate the principles and best practices of sustainability in corporate documents and reports such as mission statements, strategic plans, annual reports, and policies;
- Develop an institutional sustainability plan that includes mechanisms for tracking progress;
- Integrate the principles of sustainability within curriculum to enable students and communities to develop competencies and commitment to contribute to a sustainable future;
- Incorporate sustainability practices in procedures and operations such as green standards for buildings, alternate energy sources, Energy Star certification for products, and energy efficient transportation;
- Integrate sustainability principles in cultural, sports, recreational and other activities;
- Participate in sustainability networks and consortia, sharing exemplary practices, research, and models; and,
- Work collaboratively with government, business and the community to develop and implement joint strategies to move society toward sustainability.

Appendix 5: Rio+20 Declaration of Higher Education Institutions (HEI)

As Chancellors, Presidents, Rectors, Deans and Leaders of Higher Education Institutions and related organizations, we acknowledge the responsibility that we bear in the international pursuit of sustainable development. On the occasion of the United Nations Conference on Sustainable Development, held in Rio de Janeiro from 20-22 June 2012, we agree to support the following actions:

- **Teach sustainable development concepts**, ensuring that they form a part of the core curriculum across all disciplines so that future higher education graduates develop skills necessary to enter sustainable development workforces and have an explicit understanding of how to achieve a society that values people, the planet and profits in a manner that respects the finite resource boundaries of the earth. Higher Education Institutions are also encouraged to provide sustainability training to professionals and practitioners;
- **Encourage research on sustainable development issues**, to improve scientific understanding through exchanges of scientific and technological knowledge, enhancing the development, adaptation, diffusion and transfer of knowledge, including new and innovative technologies.
- **Green our campuses** by: i) reducing the environmental footprint through energy, water and material resource efficiencies in our buildings and facilities; ii) adopting sustainable procurement practices in our supply chains and catering services; iii) providing sustainable mobility options for students and faculty; iv) adopting effective programmes for waste minimization, recycling and reuse, and v) encouraging more sustainable lifestyles.
- **Support sustainability efforts** in the communities in which we reside, working with local authorities and civil society to foster more liveable, resource-efficient communities that are socially inclusive and have small environmental footprints.
- **Engage with and share results through international frameworks**, such as the UN Decade of Education for Sustainable Development, led by UNESCO, the UN University system, the UN Academic Impact, the Global Compact, the UN-supported Principles for Responsible Management Education initiative and the UN Environment Programme's Environmental Education and Training initiatives, in order to exchange knowledge and experiences and to report regularly on progress and challenges.

Appendix 6: Activities of Canadian Provincial and Territorial ESD Working Groups[11]

Working group facilitates collaboration and synergy for the development of formal education projects/programs

- BCWG [British Columbia Working Group] in collaboration with The Ministry of Education, and BC Hydro has developed *Conceptualizing Environmental Learning: An Interdisciplinary Guide for Teachers* and a curriculum map to assist teachers of all subjects and grades to integrate environmental concepts into teaching and learning.
- BCWG is developing *The Taking Stock* document to look at what is happening with regard to sustainability at universities and colleges across BC (www.walkingthetalk.bc.ca/node/468).
- BCWG in Collaboration with the Ministry of Advanced Education has created 2 one-year walkingthetalk scholarships for master's or PhD students working on a topic related to sustainability education.
- MESDWG [Manitoba Education for Sustainable Development Working Group] is creating ESD-focused education resources intended for the grade 12 level with the support of the Minister of Education and Manitoba Education Citizenship and Youth
- EASO [Education Alliance for a Sustainable Ontario] - provided input to the Grades 1 – 10 Science and Technology curriculum review, provided input into the Working Group on Environmental Education, provided input to the Ministry of Education's proposed high school "Specialist High Skills Major" (SHSM) program in Energy and Environment, participated in the review of Environmental Education Standards being developed by the Ministry of Education as a follow up to the Bondar Report
- EASO, Ontario Teachers' Federation, Ministry of Education, Ministry of Natural Resources are facilitating the development and delivery of 9 (6 English, 3 French) summer camps to provide Ontario teachers with developmental professional learning on biodiversity and other sustainability issues in support of the Bondar report.
- SESDWG [Saskatchewan ESD Working Group] has organized four youth forums, bringing together more than 300 students to learn about sustainability issues and engage in action projects, 2007 Forums will take place in Saskatoon and Ile la Cross. SESDWG is exploring an opportunity to partner with Action Research: Community Problem Solving (AR:CPS) in Quebec to have access to Youth Action Forum programming for grade K – 12 in French.
- SENSE [Nova Scotia ESD Working Group called Sustainability Education in Nova Scotia for Everyone] has delivered Natural Step and Footprint programs to schools and communities in NS

Working Group facilitates projects and programs in non-formal ESD

- ABWG developing a carbon neutral eco-village.
- Sask. WG is acting advisory board for the new Green Life TV series, a documentary-style series to facilitate real and lasting change that will engage the Saskatchewan community in environmental issues.
- SENSE launched the Ecological Footprint project and Schools Facilities Management Greening program in schools across Nova Scotia SENSE has delivered Natural Step to businesses and communities.

[11] This is Appendix C from Bell, 2009.

Working groups facilitate dialogue and networking

- BCWG www.walkingthetalk.bc.ca—communicative online gathering place which has 295 members representing 50 communities across BC and 11 communities internationally.
- BCWG "What is sustainability education?" dialogue held at the Wosk Centre for Dialogue in March 2007, bringing together more than 75 sustainability educators and decision-makers from across BC, and the development of ten principles of sustainability education out of the dialogue.
- ABWG–Alberta Working Group] hosted a three-day envisioning [process] with 35 formal, non-formal and informal education stakeholders to develop a shared vision, form groups with common themes, and develop action plans.
- MESDWG is hosting an International ESD Conference in Winnipeg on November 26 to 28th, 2008 in collaboration with the Science Teachers Association of Manitoba. The conference being held in the Winnipeg Convention Centre is expected to attract upwards of 700 registrants.
- SESDWG hosted a Symposium on April 19 & 20, 2007 entitled Toward a Sustainable Future.
- SESDWG is exploring an opportunity to partner with Action Research: Community Problem Solving (AR: CPS) in Quebec to have access to Youth Action Forum programming for grade K–12 in French.
- Education for Sustainable Development Networking Forum held on September 21, 2006 at Downsview Park. Engaged 180 individuals. In total, 37 groups displayed information about their organization and their ESD activities.
- SENSE is hosting the First Annual Sustainability Education Symposium and Public Forum on Sustainability Education in March 2008
- Saskatchewan International RCE meeting is planned for May 25th–27th. Severn Cullis-Suzuki, from the David Suzuki Foundation, has been confirmed as the keynote speaker on May 25th.
- The NB Working Group functions in a fully bilingual manner. All meetings have simultaneous translation; all documents produced for the Working Group are in both official languages. Both francophone and anglophone participants are strongly engaged in the Working Group.

Working groups facilitate communication to the broader public

- MESDWG has created a web page on the Manitoba Education Citizenship & Youth website and is planning the development of a Website for the WG and International Conference.
- MESDWG is working with Green Manitoba and the Manitoba Forestry Association to facilitate a series of Educating the Educator workshops that addresses topics of interest to the ESD and EL community. Four workshops have been presented to the public since June 2007.
- SENSE has created a Sustainable Development Resource Directory.
- SESDWG is creating www.saskesd.ca, a website serving as information portal and networking tool to advance sustainability education in the province.
- EASO has created a newsletter that is sent out quarterly to its members and networks, and is creating a website.
- NBWG has created a website (www.nben.ca/seanb) and listserv for the working group.

- BCWG has developed the "walking the talk" website and newsletter as a way of sharing ideas and connecting sustainability educators from the K–12, higher education, and non-formal sectors. (currently more than 430 members).

WG facilitate research

- MESDWG has, in partnership with the International Institute for Sustainable Development, [and] Manitoba Education Citizenship and Youth is undertaking research to expand the IISD Policy Bank Initiative as well as baseline data project to measure ESD attitudes pre and post decade.
- EASO, the Toronto Regional Centre for Expertise, the University of Toronto and Learning for a Sustainable Future have collaborated on the creation of a survey tool to collect data on ESD programs and activities through the NESDEC, WGs and RCEs.

WG group facilitate change–modeling SD

- ABWG is modeling sustainability in the events by ensuring the food is organic, vegetarian/vegan, low waste, and carpooling/busing is encouraged.

Initiatives relating specifically to Environmental Sustainability

- SENSE has launched the Ecological Footprint project and Schools Factilities Management Greening program in schools across Nova Scotia SENSE has delivered Natural Step to businesses and communities.
- SENSE has launched the Atlantic Canada Sustainability Initiative that is assisting organizations, municipalities and businesses with sustainability planning.
- EASO provided input into the Provincial Environmental Education policy, curriculum review and implementation. Through input into the Working Group on Environmental Education, Chaired by Roberta Bondar, Shaping our School, Shaping our Future contained 32 recommendations to strengthen ESD in Ontario schools. EASO provided input into the Environmental Education Policy and EE standards. EASO coordinated input from 14 organizations into the Science and Technology curriculum review. EASO is coordinate stakeholders from the health and environment sector to provide input into the Health and Phy Ed curriculum review process.
- EASO, Ontario Teachers' Federation, Ministry of Education, Ministry of Natural Resources are facilitating the development and delivery of 9 (6 English, 3 French) summer camps to provide Ontario teachers with developmental professional learning on biodiversity and other sustainability issues in support of the Bondar report.
- EASO Biodiversity Survey - During the fall of 2007, the Biodiversity Education and Awareness Network (BEAN) subcommittee of EASO surveyed providers of biodiversity education and awareness programs, materials and activities. The purpose of the survey was to provide BEAN with information with which to effectively plan strategic, cost-effective actions related to the promotion and delivery of biodiversity education and awareness. One hundred fifteen groups responded–30% of all responses were formal activities, 29% were non-formal activities and 41% were informal activities.

- MESDWG is partnering with the St. James School Division and Green Manitoba to support the development and dissemination of an ESD Resource Kit that the school division has developed for use within their division. The intent is to pilot and develop the ESD Resource Kit for implementation across Manitoba School Divisions over the next two years.
- NBWG has developed a green schools web portal for teachers, a resources kit to help schools/colleges initiate composting and energy conservation projects, they are sharing of resources with teachers, and looking into a provincial green school policy, and funding proposals.

Appendix 7: Manitoba Post-Secondary Institution Interview Questions

1. Can you tell me about some of the sustainability initiatives at your college/ university?

2. What vision do you have for your institution in regards to a "sustainable" college/ university?

3. How is that vision incorporated into your strategic plan/operational plan?

4. How are the sustainability efforts of your institution being supported by senior management and the board?

5. Can you describe some of the greatest strengths of your institution in terms of sustainability?

6. What role do you feel your institution has in achieving a sustainable future in Manitoba/Canada?

7. What is your institution doing to ensure that all students have basic sustainability literacy upon graduation?

8. How important are relationships outside your institution with the community, NGOs, business, and government to your sustainability efforts and in what ways?

9. Has the Manitoba SD Act influenced at all the sustainability initiatives at your institution? If so, in what ways?

10. Has the United Nations Decade for Education for Sustainable Development influenced at all the Sustainability initiatives at your institution? If so, in what ways?

11. Has your university made a national or international commitment by signing on to one of the declarations of sustainability (e.g. Talloires and Halifax)? If yes, why did your institution sign on?

12. What are the conditions necessary that will help promote the growth of sustainability in post-secondary- education in Manitoba? Can you talk about the barriers and drivers at your institution?

13. Finally, how does your institution know whether the sustainability efforts are making a difference?

Appendix 8: Survey for higher education study

The following survey was posted on SurveyMonkey for completion by representatives of the colleges and universities. Questions for the survey were selected from the Council of Ontario Universities (COU) study, *Ontario Universities: Going Greener–Report of Campus Sustainability Initiatives* and modified to fit our areas of interest. For the "Students, curriculum and research" area, we complemented the COU model with questions from the College Sustainability Report Card and the AASHE–STARS reporting frameworks.

About this study

In response to the UN Decade for Education for Sustainable Development, Manitoba's Department of Education has made a commitment to the reorientation of the formal K-12 education system towards sustainability. As an outcome of this commitment, students in the K-12 system in Manitoba are being introduced to the knowledge, values and skills needed to become responsible citizens, building a more sustainable world.

Manitoba Education would now like to explore how ESD concepts and practices are being implemented within colleges and universities in Manitoba in order to gain a better picture of the overall ESD efforts being undertaken within formal education. We would like to increase our understanding of what sustainability opportunities are available within the province in Higher Education once students graduate from secondary schools. We are also interested in exploring whether the campus reflects a "whole school" learning environment, in which what the students are being taught is being reflected in the day to day operations of the campuses around them (consistent with the approaches now being taken in several K-12 school divisions across the province). We know there are excellent sustainability initiatives happening in our colleges and universities. However, to the best of our knowledge, a comprehensive view of how ESD is being addressed within universities and colleges in Manitoba has not been compiled.

What is ESD?

The most common definition of Sustainable Development (SD) is development that “meets the needs of the present without compromising the ability of future generations to meet their own need.” Education for Sustainable Development entails a reorientation of education towards the goal of preparing learners to become informed and engaged citizens in moving towards a sustainable future. It calls for transdisciplinary understanding of the intersection of economic prosperity, social equity and environmental protection, the three pillars of sustainability. The aim of ESD is to help people “develop the attitudes, skills and knowledge to make informed decisions for the benefit of themselves and others, now and in the future, and to act upon these.” In recognition of the importance of ESD, the United Nation’s General Assembly declared 2005-2014 the UN Decade of Education for Sustainable Development (DESD). In addition to economic prosperity, social equity and environmental protection, it considers a fourth pillar, that of cultural sensitivity. ESD touches every aspect of education including planning, policy development, program implementation, finance, curricula, research, teaching, learning, assessment, administration, operations and facilities.

Outline of the survey

Part I: Policy, administration and partnerships
Part II: Operations and facilities
Part III: Students, curriculum and research
Part IV: Other

The survey is composed of 73 questions, most of which are multiple choice, and about half of which are a simple yes/ no. It should take less than one minute per question to answer or about one hour in total.

Please respond by Friday June 29, 2012.

Thanks in advance for your participation.

Manitoba

iisd International Institute for Sustainable Development / Institut international du développement durable

***1. Name:**

***2. Title:**

***3. Department:**

***4. E-mail:**

***5. Name of institution:**

Please select from drop-down menu.

***6. Number of students (in total, including full- and part-time for year 2010/2011):**

Part I: Policy, administration and partnerships

*7. Does your institution have a staff person or administrator who is responsible for sustainability issues?

- ◯ Yes
- ◯ No

*8. Does your campus have a multi-stakeholder environmental/sustainability task force, committee or council (composed of staff, students and professors)?

- ◯ Yes
- ◯ No

9. In what ways are students involved in your institution's sustainability program (select all that apply)?

- ☐ They are key drivers of change
- ☐ They are an integral part of identifying sustainability goals and practices
- ☐ They are a key partner in developing strategies and goals, but do not drive the decision-making process
- ☐ The involvement of students and faculty in finding solutions to the institution's sustainability challenges is encouraged within specially designed educational and/or research programs
- ☐ Students have the opportunity to contribute towards solving the institution's sustainability challenges through extracurricular activities and/or as part of their on-campus living arrangements

Please briefly describe how you are engaging students in sustainability efforts:

*10. Does your campus have a campus sustainability office ?

- ◯ Yes
- ◯ No

If yes, where (in what Department) is it located; who does it report to?

*11. Does your institution have its own formal sustainability policy and/or sustainability plan?

- ◯ Yes
- ◯ No

***12. Does your institution have principles of sustainability incorporated in its strategic plan?**

- ◯ Yes
- ◯ No

***13. Does your institution have a website detailing its sustainability initiatives?**

- ◯ Yes
- ◯ No

If yes, please provide URL

***14. Has your campus established any partnerships with businesses, local organizations or government to promote sustainability?**

- ◯ Yes
- ◯ No

If yes, please list:

15. List any awards/ recognition related to sustainability practices that your institution received.

***16. Please describe any three sustainability initiatives at your institution.**

Part II: Operations and facilities

RECYCLING AND WASTE

*17. Does your institution have a waste reduction plan?

- ◯ Yes
- ◯ No

*18. Please indicate which items your campus collects for recycling or appropriate disposal (select all that apply):

	Yes	No
- Higher grades of paper (e.g., office paper, computer printout)	◯	◯
- Lower grades of paper (e.g., mixed paper, colored paper, junk mail, newspaper, boxboard, magazines, craft paper)	◯	◯
- Corrugated cardboard	◯	◯
- Aluminum cans	◯	◯
- Glass bottles and jars	◯	◯
- Plastic bottles	◯	◯
- Food scraps	◯	◯
- Landscape trimmings for composting or mulching	◯	◯
- Construction and demolition waste (scrap metal, wood, concrete, bricks or stone)	◯	◯
- Non-construction scrap wood	◯	◯
- Non-construction metal	◯	◯
- Electronics (printers, computers, fax machines)	◯	◯
- Printer cartridges	◯	◯
- Batteries	◯	◯
- Polystyrene	◯	◯
- Fluorescent tubes and CFL	◯	◯
- Hand towels from washrooms	◯	◯
- Coffee cups	◯	◯
- Motor oils	◯	◯
	◯	◯

- Grease and frying oils	◯	◯
- Other	◯	◯

If other, please specify:

***19. What was your institution's diversion rate in 2010/2011?**

***20. Does your campus have a materials surplus, exchange or recovery program, for example, for computers, furniture, office supplies or lab equipment?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***21. Does your campus have any programs (i.e. behaviour modification campaigns) specifically targeted at material use and reduction?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***22. Have you seen reductions or increases in total amount of waste (incl. recycling and compost)?**

- ◯ Yes
- ◯ No
- ◯ Unknown

PURCHASING AND PROCUREMENT

23. What environmentally friendly sustainable purchasing strategies has your institution implemented (select all that apply)?

	*
- Specifying that products must contain recycled content	◯
- Specifying that products must be energy efficient	◯
- Specifying that products must come from sustainably managed sources	◯
- Specifying that products must come from local sources	◯
- Other	◯

If other, please specify:

24. What socially minded sustainable purchasing strategies has your institution implemented (select all that apply)?

	*
- Specifying that products must be fair-trade	◯
- Specifying that products must be sweat-shop free	◯
- Other third party certifications	◯

If other, please specify:

25. What sustainable food strategies has your institution implemented (select all that apply)?

	*
- Vegetarian food options	◯
- Vegan food options	◯
- Fair-trade food options	◯
- Local food options	◯
- Seasonally sensitive food options	◯
- Other	◯

If other, please specify:

***26. Please list and describe your university's key initiatives in the area of purchasing and procurement aimed at promoting environmental sustainability:**

27. Does your institution require third party verification of environmental cleaning products (e.g. Green Seal, EcoLogo)?

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***28. Is there a sustainability representative on the purchasing and procurement committee?**

- ◯ Yes
- ◯ No

TRANSPORTATION

***29. Does your institution offer free or discounted public transit passes to students?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***30. Does your institution offer free or discounted public transit passes to faculty and staff?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***31. Does your institution offer a carpooling or vanpooling program?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***32. Does your institution have a bike or car sharing program?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

*33. Does your institution offer adequate and protected bicycle racks?

- ◯ Yes
- ◯ No
- ◯ Plan to develop

ENERGY MANAGEMENT

*34. Has your institution implemented any significant new energy management programs to curb CO2 and other greenhouse gas emissions in the past 3 years?

- ◯ Yes
- ◯ No

35. Which of the following installations does your institution have (select all that apply)?

	*
- District energy system	◯
- Cogeneration operation	◯
- Tri-generation operation	◯

36. Which of the following renewable energy installations does your institution have (select all that apply)?

	*
- Wind	◯
- Solar electric (photovoltaic)	◯
- Solar thermal	◯
- Biomass	◯
- Hydroelectric	◯
- Geothermal	◯
- Landfill gas	◯
- Fuel cells	◯
- Other	◯

If other, please specify:

*37. Approximately what percentage of your energy comes from on-campus generated renewable sources?

BUILDINGS

***38. Has your institution implemented any efficiency standards for new buildings or retrofits of existing buildings?**

- ◯ Yes
- ◯ No

***39. Has your institution implemented any LEED (Leadership in Energy and Environmental Design) certification or other standards (eg. BOMA) for new buildings?**

- ◯ Yes
- ◯ No

***40. Has your institution implemented any LEED certification or other standards (eg. BOMA) for retrofits of existing buildings?**

- ◯ Yes
- ◯ No

***41. Has your institution adopted LEED or other standards (eg. BOMA) as an accepted practice for new construction or retrofits without seeking certification?**

- ◯ Yes
- ◯ No

***42. Has your institution implemented any green roofs on buildings (roofs planted with vegetation)?**

- ◯ Yes
- ◯ No

WATER MANAGEMENT

43. What water efficiency upgrades has your institution implemented (select all that apply)?

	*
- Low flow toilets	◯
- Low flow shower heads	◯
- Low flow faucets	◯
- Recirculating fountains	◯
- Chilled water	◯
- Other	◯

If other, please specify:

44. What water reuse strategies has your institution implemented (select all that apply)?

	*
- Grey water use	◯
- Black water use	◯
- Storm water use	◯
- Other	◯

If other, please specify:

45. Have you implemented any of the following rain or storm water management techniques (select all that apply)?

	*
- Bioswales	◯
- Detention ponds	◯
- Cisterns	◯
- Permeable paving	◯
- Rain gardens	◯
- Other	◯

If other, please specify:

FLEET

*46. Thinking about the fleet vehicles on campus, roughly how many does the institution lease or own?

*47. About how many fleet vehicles on campus use alternative energy sources or fuels (e.g., electric, hybrid electric, natural gas, propane, biodiesel, biofuels, etc.)?

Part III: Students, curriculum and research

With regards to the definition of Education for Sustainable Development (ESD) in curriculum, we differentiate between a sustainability-related course and a sustainability-focused course. As stated earlier, the three pillars of sustainable development are economic prosperity, social equity and environmental protection. The UN Decade for Sustainable Development (DESD) adds a fourth pillar, cultural sensitivity.

Sustainability-related courses fall within one or more of the foour pillars (Environment, Society, and Economy + Cultural Sensitivity) and either incorporate sustainability as a distinct course component or module, or concentrate on a sustainability principle or issue.

Sustainability-focused courses either concentrate on the concept of sustainability, including its environmental, social and economic dimensions (overlap of the four pillars), or examine an issue or topic using sustainability as a lens.

Some institutions have used key word searches to identify the sustainability-related and sustainability-focused courses among a list of courses offered. Others have surveyed their faculty members regarding the courses they teach. For the purpose of this survey, respondents may use any method that is deemed appropriate. Given time and resource limitations, we realize that some institutions will have to resort to “best guess” estimation techniques (questions 60-63 below).

STUDENT INVOLVEMENT

*48. Does a portion of your new student orientation specifically cover sustainability?

- ◯ Yes
- ◯ No
- ◯ Plan to develop

49. If yes to question above, please check and describe all ways in which sustainability is incorporated into new student orientation:

	*
- Skits, speakers, or presentations that take place in large venues that most or all first-year students attend. Topics must include at least one of the following: promoting the Office of Sustainability, student campus sustainability groups, or sustainability as an important campus issue.	◯
- Incorporating sustainability information into presentations made by RAs to individual hallways.	◯
- Active engagement of students in activities that raise awareness about sustainability, highlight how sustainability occurs on campus, or in which students take part in a productive activity, such as volunteer work or projects (e.g., working in the on-campus garden).	◯
- Making orientation more sustainable through efforts such as a zero-waste meal or carbon offsets.	◯
- Other	◯

If other, please deescribe:

*50. Does your institution organize any sustainability challenges/competitions for your campus and/or with other colleges?

◯ Yes

◯ No

◯ Plan to develop

If yes or plan to develop, please list and describe:

***51. Does your institution have active student-run organizations devoted to sustainability efforts on campus?**

- ◯ Yes
- ◯ No

If yes, please list:

***52. Does your institution provide student scholarships related to sustainability?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***53. Does the career services office provide any guidance specifically about careers related to sustainability/ sustainable development?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

***54. Does your campus have a recruiting program to attract students interested in studying environmental and or sustainability issues?**

- ◯ Yes
- ◯ No
- ◯ Plan to develop

CURRICULUM

***55. Does your institution offer any of the following (for colleges, select no to those that do not apply)?**

	Yes	No	Plan to develop
- an undergraduate major/ specialist, or a diploma/ certificate in environmental or sustainability studies	◯	◯	◯
- an undergraduate minor in environmental or sustainability studies	◯	◯	◯
- an undergraduate interdisciplinary degree in environmental or sustainability studies	◯	◯	◯
- an undergraduate certificate or other recognition in environmental or sustainability studies	◯	◯	◯
- direct-entry environmental or sustainability Masters program	◯	◯	◯
- collaborative environmental or sustainability Masters program between multiple departments or units	◯	◯	◯
- direct-entry environmental or sustainability Doctoral program	◯	◯	◯
- collaborative environmental or sustainability Doctoral programs between multiple departments or units	◯	◯	◯

***56. Do departments in the following areas offer any undergraduate courses on environmental/and or sustainability issues?**

	Yes	No	Not applicable
- Natural Sciences	◯	◯	◯
- Physical Sciences	◯	◯	◯
- Health Sciences	◯	◯	◯
- Social Sciences	◯	◯	◯
- Humanities	◯	◯	◯
- Engineering	◯	◯	◯
- Architecture and Design	◯	◯	◯
- Business	◯	◯	◯
- Education	◯	◯	◯
- Other	◯	◯	◯

If other, please describe:

***57. Does your institution incorporate sustainability into your experiential learning service program or other volunteer programs? If so, please provide some examples.**

◯ Yes

◯ No

◯ Plan to develop

Examples:

***58. Please describe your institution's key initiatives in the area of integrating sustainability concepts into curriculum. If your institution developed a definition of sustainability in the curriculum, please include in your description.**

***59. Does your definition of sustainability in the curriculum distinguish between courses that focus or concentrate on the concept of sustainability throughout the course and courses that relate to an aspect of sustainability or include sustainability as part of the course?**

◯ Yes

◯ No

◯ Not applicable

***60. Please provide a list of and/or a link to the sustainability course offerings available at your institution, including department affiliation.**

***61. Approx. how many sustainability-focused courses were offered in 2010/2011?**

***62. Approx. how many sustainability-related courses were offered in 2010/2011?**

***63. Approx. how many courses were offered in total at your institution in 2010/2011?**

***64. Approx. how many students graduated in 2010/11 from a degree that has, as a learning outcome, the aim to develop specific sustainability knowledge and skills?**

***65. What was the total number of graduates in 2010/11?**

***66. Please provide the name of each sustainability-focused undergraduate degree, diploma or certificate programs.**

67. Please provide the name of each sustainability-focused graduate degree program.

***68. Does your institution offer incentives to assist faculty to expand sustainability course offerings? Incentives may include providing release time, funding for professional development, and trainings offered by the institution.**

- ◯ Yes
- ◯ No

If possible, please provide a brief description:

RESEARCH

69. Has your institution developed a definition of sustainability research?

- [ ] Yes
- [ ] No

If yes, please provide below:

***70. Approx. how many faculty members are engaged in sustainability research?**

***71. What is the total number of faculty engaged in research?**

***72. Please describe some of the sustainability research activities and initiatives?**

73. If possible, please provide a few names and department affiliations of faculty engaged in sustainability research AND/ OR the website URL where the information is available.

***74. Does your institution have a program to encourage students to undertake sustainability research?**

- ◯ Yes
- ◯ No

If yes, please describe in a few lines.

***75. Does your institution have a program to encourage faculty members to undertake sustainability research?**

- ◯ Yes
- ◯ No

If yes, please describe in a few lines:

***76. Does your institution give positive recognition to sustainability research during faculty promotion and tenure decision?**

- ◯ Yes
- ◯ No

Please provide a brief description of the policy and website URL if available:

Part IV: Other

These questions are optional. We wanted to give you the chance to talk about these issues, and you may include as much or as little detail as you desire.

77. What are the opportunities for furthering sustainability at your institution?

78. What are the barriers to sustainability at your institution?

79. Please describe any other sustainability efforts your institution is undertaking which do not fit into the above responses (e.g. social inclusion policies, sustainable financial investment practices, etc).

Thank you

Thank you for your participation.

You may contact us at:

Gabriel A. Huppe
International Institute for Sustainable Development
Phone: +1.204.958.7753 | E-mail: ghuppe@iisd.ca

Carolee Buckler
Manitoba Education
E-mail: carolee.buckler@gov.mb.ca

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International Institute for Sustainable Development
Head Office
161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba, Canada R3B 0Y4
Tel: +1 (204) 958-7700 | Fax: +1 (204) 958-7710 | Website: www.iisd.org