



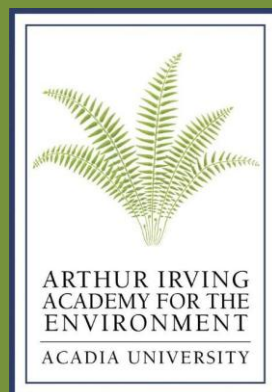
ACADIA  
UNIVERSITY

# Acadia University Sustainability Assessment

2006-2009

Prepared by:  
Arthur Irving Academy for the Environment

June 2009





## Message from the Arthur Irving Academy for the Environment

Through our work at the Arthur Irving Academy for the Environment, we support Acadia in becoming a living model of sustainability. In this endeavor we see the process as equally important and critical to the end-state. A such, we encourage creativity and discipline across the university in ensuring our activities on campus are ecologically sound, socially just and economically viable and that they will continue to be so for future generations.

Viewing the university as an open system embedded within larger social and environmental systems, we can understand that one of our most significant and lasting impacts is our graduates. We teach and influence our students through a variety of means, including lectures, class discussions, assignments, engagement activities, and modeling appropriate behaviour. Learning, however, does not only happen within the classroom. How we operate as an organization, how we treat each other, our surrounding community, and the natural environment is observed by our students and teaches them norms of behaviour that they will carry with them into their post-graduate world. Through in-class and out-of-class experiences we must impress upon our students the critical nature of environmental and sustainability related issues of our time, and teach how to understand, and adequately respond to them. If we have done this, we have served them and the society into which they will graduate well. If we have not done this adequately we have failed our students and our society; it is imperative that we get this right.

The Acadia Sustainability Assessment is our first attempt in exploring Acadia's progress in achieving this goal in all areas of campus activities. Our hope is that this report will encourage discussion on issues of sustainability and help to further our efforts in becoming a living model of sustainability.



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Arthur Irving Academy for the Environment



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## Executive Summary

At Acadia University, we understand sustainability as it relates to the social, environmental, and economic aspects of our activities. The Acadia Sustainability Assessment is a report on the state of sustainability at Acadia considering these dimensions. It has three main objectives. The primary objective is to engage students, staff and faculty in an assessment of the extent to which sustainability has been implemented in activities in all areas of the institution. Second, to rate Acadia's progress in achieving the institution's goals related to sustainability outlined in the Acadia Strategic Plan. Finally, it is intended to provide a comprehensive overview of sustainability initiatives underway at the institution. The Acadia Sustainability Assessment is based on the framework outlined in the Talloires Declaration, which was the first official commitment to environmental sustainability in higher education made by university administrators. Acadia became a signatory of the Talloires Declaration in 2006.

The Assessment was conducted using the Sustainability Assessment Questionnaire (SAQ), developed by the Secretariat for the Talloires Declaration. The questionnaire is a qualitative self-assessment tool created to help institutions assess their performance in the critical areas of activity in higher education: Curriculum, Research and Scholarship, Operations, Faculty and Staff Development and Rewards, Outreach, Service and Partnerships, Student Opportunities, and Administration, Mission and Planning, and Promotions and Communications. Interviews were conducted with seventeen selected faculty, staff and students using the questionnaire. Other staff, faculty and students were consulted for additional data and information to supplement the report. Information was included from the last three years to provide an overview of activities since signing the Talloires Declaration.

Overall, staff, faculty and students were supportive of this endeavor and pleased to participate in the process. A commitment to sustainability is evident in the many examples of contributions to sustainability in all areas of activities at Acadia. However, implementing and facilitating sustainability institutionally, i.e. consistently across all areas of campus activity, has received only "a little" attention at Acadia since 2006. Operations, Outreach, Service and Partnerships and Student Opportunities in particular have been areas of emphasis over the past few years. Faculty and Staff Development and Rewards, and Promotions and Communications are areas that require more attention based on the results of the Assessment.

Overall, there has been "some" progress toward the goals outlined in the Acadia Strategic Plan, although significant progress has not been made in any one area. Research and Scholarship, Administration, Mission and Planning, and Student Opportunities have been areas of emphasis. Goals related to Faculty and Staff Development and Rewards, Outreach, Service and Partnerships and Promotions and Communications require further attention.

In order to achieve sustainability at Acadia a coordinated and strategic approach that is focused on aligning activities with the goals outlined in the Strategic Plan and encouraging collective responsibility is necessary. Further, the public commitment demonstrated in the signing of the Talloires Declaration must become a commitment in both policy and practice at Acadia. Many recommendations for furthering Acadia's progress toward sustainability emerged from the Assessment. These recommendations, ranging from developing an energy policy, to faculty training in integrating sustainability in curriculum across all disciplines, to removing garbage bins have been included to encourage discussion and offer ideas for potential next steps for moving forward.

## About the Acadia Sustainability Assessment

### What is Sustainability?

In defining sustainability, most people make reference to the Brundtland Commission which describes sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” While this quote and the ideal that it represents resonate broadly, it is difficult to translate into operations, day-to-day decisions, behaviors, and strategic planning in organizations. At Acadia University our pursuit of sustainability involves various frameworks to assist in planning, decision making, and guiding our behavior. Most fundamentally, we understand sustainability as it relates to social, environmental, and economic aspects of our activities, the well-established “triple-bottom-line” approach. For the university this means that policies, plans, programs, and people must support the goals of continuously reducing our environmental footprint; treating all people fairly; contributing to society; and ensuring that the institution is economically viable.

### Purpose of the Assessment

The Acadia Sustainability Assessment is a report on the state of sustainability at Acadia. It has three main objectives. The primary objective is to engage students, staff and faculty in an assessment of the extent to which sustainability has been implemented in activities in all areas of the institution. Second, to rate Acadia’s progress in achieving the institution’s goals related to sustainability outlined in the Acadia Strategic Plan. Finally, to provide a comprehensive overview of sustainability initiatives underway at the Institution in order to raise awareness about existing sustainability initiatives, to encourage debate about sustainability in higher education, and to promote discussion on next steps.

### Methodology

The Acadia Sustainability Assessment (also referred to as the Assessment throughout the report) is based on the broad framework outlined in the Talloires Declaration to which Acadia became a signatory in 2006. Composed in 1990 at an international conference in Talloires, France, the Talloires Declaration was the first official commitment to environmental sustainability in higher education made by university administrators. To date it has been signed by over 350 university presidents and chancellors in over 40 countries. A copy of the Talloires Declaration is included in Appendix A.

The Assessment was conducted using the Sustainability Assessment Questionnaire (SAQ), developed by the Association of University Leaders for a Sustainable Future, which serves as the Secretariat for the Talloires Declaration. This tool was selected to be consistent with Acadia’s commitment to sustainability outlined in the Talloires Declaration. The questionnaire is a qualitative self-assessment tool created to help institutions assess their performance in the critical areas of activity in higher education: Curriculum, Research and Scholarship, Operations, Faculty and Staff Development and Rewards, Outreach, Service and Partnerships, Student Opportunities, and Administration, Mission and Planning. In consultation with the Association of University Leaders for a Sustainable Future, some questions were modified slightly for clarity and adapted to Acadia’s context and a section on Promotions and Communications was added. An assessment of the extent to which Acadia’s is

meeting its stated commitment related to sustainability as outlined in the University Strategic was also incorporated.

Interviews were conducted with seventeen selected faculty, staff and students using the questionnaire. A list of those interviewed is included in Appendix C. Individuals were selected according to the following criteria:

- Individuals who were most able to provide an informed assessment in each area of the sustainability assessment were selected. Only questions that were relevant to the individual's primary function at the university were included.
- Individuals who were familiar with the concept of sustainability were chosen to ensure that there was a common language and understanding about sustainability to facilitate the assessment.
- Individuals were selected to ensure representation from Arts, Science, Professional Studies, and Administration.
- Students were selected to ensure representation from multiple years and programs.

Participants were asked to rate Acadia's progress on implementing sustainability in activities across the institution on a scale of 0-4. They were also asked open-ended questions about initiatives and for comments. In addition, participants were asked to rate Acadia's progress on achieving the goals outlined in the Acadia Strategic Plan on a similar scale of 0-4. Participants were instructed to provide responses relative to Acadia (i.e. Acadia's size and resources) rather than to compare Acadia to other institutions. They were also asked to focus on sustainability at the institutional level as opposed to activities in specific units or departments to give a holistic assessment of the extent to which sustainability has been implemented across campus. The emphasis of the assessment was on environmental sustainability, although participants were instructed to interpret some questions broadly.

Finally, additional data and information was compiled in consultation with other staff, faculty and students in order to supplement the report and provide a comprehensive account of sustainability activity on campus. Information on initiatives was included from the last three years to provide an overview of activities since signing the Talloires Declaration. Data (e.g. water use) is from 2007/2008 unless otherwise noted as this was the most recent complete year of data at the start of the Assessment.

## Report Organization

The design of the report follows the format of the questionnaire. The first section contains notable highlights of sustainability initiatives at Acadia. Section two includes institutional background data to provide a relevant context for the Assessment. The third section contains environmental indicators to provide an overview of Acadia's performance in key areas of environmental sustainability. The results of the questionnaire in the areas of activity comprise the next sections. Ratings of Acadia's performance in achieving Strategic Plan goals and in implementing sustainability in campus activities are included in each of these sections. Details about initiatives and participant comments are also included. The next section includes a discussion of overall results and recommendations which emerged from the Assessment. Concluding comments are presented in the last section.

## Sustainability Highlights at Acadia

In 2006 Acadia signed the Talloires Declaration making a formal commitment to environmental sustainability. Since then a variety of initiatives have been implemented spanning all areas of the institution. Curriculum initiatives are helping to inspire and educate future sustainability champions. Research and scholarship activities are contributing knowledge and solutions to issues of sustainability. Many efforts to green campus operations have been implemented. The university is encouraging student, staff and faculty involvement and facilitating professional development opportunities. Outreach and service activities support sustainable development in the community and beyond and student opportunities encourage entrepreneurship and enhance the Acadia experience. Administration is committed to sustainability as a distinguishing feature of an Acadia education and a theme for campus functions. Finally, Acadia is increasingly recognizing the accomplishments of students, staff and faculty in moving toward sustainability. The following are highlights of some of the many sustainability initiatives.

### Curriculum: Applied Class Projects in Sustainability

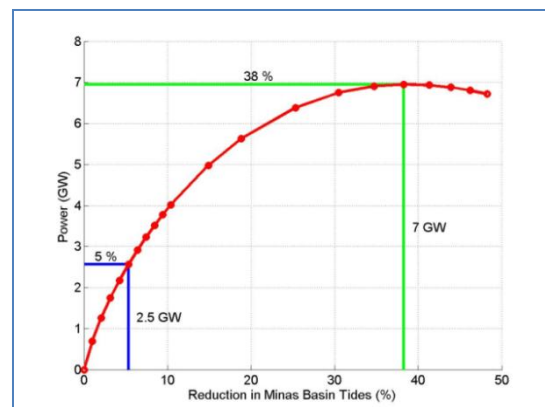


Many faculty are integrating sustainability into the curriculum by incorporating applied class projects on campus and in the community. University staff and community members serve as “clients” for these applied projects to

give students practical experience in project management. For example, students in *Strategic Issues in Business* developed an alternative energy plan for Acadia University and organized an energy symposium in November 2009. The event was open to the public and over 60 people attended to learn about potential alternative energy options for Acadia. Engineering students in *Technical Communications* designed an inexpensive retrofit to convert high-flow toilets to variable flow toilets on campus, saving 6L per flush. Toilets in DeWolfe House and EcoHouse are now variable flow models.

### Research and Scholarship: Tidal Power in the Bay of Fundy

In the Department of Mathematics & Statistics, Dr. Richard Karsten is examining the potential and impacts of tidal power in the Bay of Fundy and other high tide regions. The research has shown that previous estimates of the potential power are underestimating the maximum potential power in the Minas Passage by a factor of three to four. Equally important, the research predicts the changes in the Minas Basin and regional tides as power is extracted. The results show that while extracting the maximum power will reduce the tides significantly (up to 40%), large amounts



of power (several GW) can be extracted with only small changes in the tides. The figure



above shows the potential power versus the change in the relative amplitude in the tides. It illustrates that the power increases rapidly as a function of the change in tides. So while at the maximum possible power of 7GW the tides would be reduced by almost 40%, if 2.5GW are extracted the tides are only reduced by 5%.

### Operations: *LEED Certification*



The application to attain LEED (Leader in Energy and Environmental Design) certification for the new biology building is currently underway. The facility is designed to reduce energy use, reduce impact on the environment and create a healthy working space by improving the quality of the indoor environment for building occupants. Numerous features make this new facility a flagship for sustainability on campus. Rainwater is collected for flushing of toilets and waterless urinals have been installed. A geothermal system provides cooling to the building. Heat exchangers have been installed. Lighting is controlled by occupancy and daylight sensors to reduce energy, and recycled products were used in plasterboard, carpets and furniture.

### Faculty and Staff Development and Rewards: *Sustainability Training*



In January 2009 budget officers and building managers at Acadia participated in a sustainability training workshop. The workshop was facilitated by Dr. John Colton

and Dr. Edith Callaghan, Acadia faculty trained as Natural Step Associates. The Natural Step Framework is a comprehensive model for sustainability planning in complex systems. The workshop was designed to introduce staff and faculty to important concepts in sustainability, to explore frameworks for sustainability planning and management using the Natural Step as an example, and to discuss next steps for sustainability at Acadia.

### Outreach, Service and Partnerships: *Atlantic Canada Sustainability Initiative*



Dr. John Colton, in the Department of Recreation Management and Kinesiology, serves as the Chair of the

Atlantic Canada Sustainability Initiative which is a collaborative project designed to build capacity and momentum around sustainability in Atlantic Canada using The Natural Step framework as a guide. The initiative was developed by a grass-roots network of municipalities, businesses and NGOs in Atlantic Canada in order to better understand the challenges and opportunities of sustainability and to move the region toward sustainable solutions. Some of the members are Aliant, Halifax Regional Municipality, iNova Credit Union, the City of Saint John, NB, the Town of Wolfville, NS, and the Town of Stratford, PEI.

### Student Opportunities: *Acadia Community Sustainable Farm*



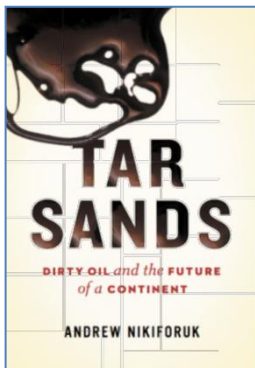
The Acadia Farm was created by students in September 2008 to become a place to learn about farming, and about the value of organic and local foods for communities and for the environment. The idea grew out of the Green Campus Summit hosted by the Arthur Irving Academy for the Environment in September 2007. The farm grows organic vegetables to serve in Wheelock Hall and surplus vegetables are donated to the local food bank. Garden plots are also available to the community to grow vegetables. The farm is managed primarily by student volunteers, however in order to expand production, integrate farm operations into curriculum, and offer more education and outreach programs students are seeking funding for a full-time coordinator.

### **Administration, Mission and Planning:** **Acadia Strategic Plan**

Acadia's commitment to sustainability is reflected in the University Strategic Plan, passed by the Board of Governors in 2006. The plan outlines numerous goals related to sustainability, particularly environmental sustainability, and its aspirations are articulated in the vision for the institution:

*"Acadia aspires to create a deep appreciation of our natural environment and an active commitment to sustainability among all members of the campus community. The University community also aspires to prepare students to understand and address complex social questions and concerns."*

### **Administration, Mission and Planning** **Focus Acadia on Energy**



High profile events help to engage faculty, staff and students on issues of sustainability. "Focus Acadia" was created in 2008 to focus the Acadia community on issues of critical importance to the institution and to

the world. In 2008 the theme was climate change and in 2009 energy was chosen as the focus of the event. *Focus Acadia on Energy* featured a special presentation by award winning journalist, Andrew Nikiforuk on his recent book "Tar Sands - Dirty Oil and the Future of a Continent". The presentation explored how the Tar Sands has profoundly changed Canada's economy, politics and labour patterns, how it fits into Canada's national energy strategy, and how the Tar Sands is contributing to climate change. Focusing on local energy issues, Neal Livingston, award winning filmmaker, renewable energy producer, and environmental activist based in Mabou, Cape Breton Island presented a vision for energy liberation in Nova Scotia. His presentation, Nova Scotia -The Next 5 Years: An Energy Plan to Avoid a Failed Society, focused on an action plan for renewable energy and energy efficiency policy and programs. Both Focus Acadia events have been very well attended by staff, faculty, students and members of the community.



### **Promotions and Communications:** **One Million Acts of Green**

In October 2008  
Acadia joined the CBC

campaign "One Million Acts of Green" intended to encourage Canadians to take action to preserve the environment. Through the onemillionactsofgreen.com website Acadia students, staff and faculty registered their acts of green to count toward the goal of one million. Not only did the campaign mobilize the Acadia community to take action, but it also generated national media coverage. Acadia was featured on the website and on the CBC show "The Hour with George Stroumboulopoulos" throughout the campaign. At last count the Acadia group had performed over 4800 acts of green!

## Institutional Background 2007/2008

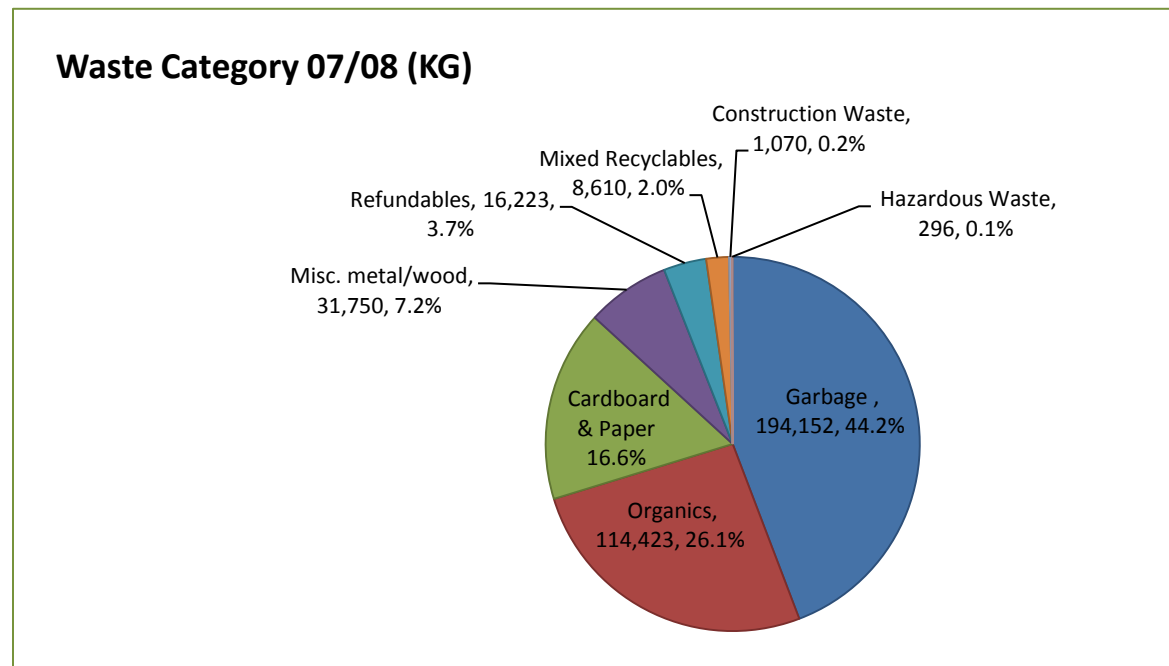
Institutional data is included to provide a relevant context for the Assessment. The table below presents a variety of background data for Acadia for 2007/2008.

<b>Assessment Boundary</b>	
<b>Total area included in assessment boundary (Main Wolfville Campus)</b> (Does not include the other Acadia properties i.e. Bon Portage, Morton, Shelburne Co., Cumberland Co. and Brier Island etc. at this time.)	~200 acres
<b>Buildings and Grounds</b>	
<b>Area of campus paved/developed</b> (Greenspaces, woods and trails are not included as developed area. Lawns are included as developed)	~60% (120 acres)
<b>Total campus conditioned building area</b> (Irving Barn and DeWolfe warehouse not conditioned)	1.7 million gross sq ft.
<b>Lab Space: Huggins, Elliot, and Horton</b> (Not including new Biology building, KCIC or Patterson)	48, 604 gross sq ft.
<b>Medical/Clinical Space</b>	
<b>Kinesiology Clinic (Arena Complex)</b>	1000 gross sq ft.
<b>Student Medical Clinic (Dennis)</b>	1500 gross sq ft.
<b>Enrollment</b>	
<b>Students in residence</b>	1063
<b>Full-time off-campus students</b>	1962
<b>Part-time off-campus students</b>	422
<b>Non-credit students</b>	1524
<b>Faculty and Staff</b>	
<b>Full-time faculty</b>	241
<b>Part-time faculty</b>	115
<b>Full-time staff</b>	265
<b>Part-time staff (Hourly)</b>	230
<b>Ancillary Services: Staff</b>	
<b>Food Services - Chartwells</b>	110-130 (in peak season)
<b>Physical Plant - Sodexho</b>	100 FT (plus 6 Seasonal)
<b>Book Store - Follett</b>	5 FT, 2 PT (plus 6 seasonal)
<b>Financial Profile</b>	
<b>Operating budget</b>	\$84,981,000
<b>Endowment</b>	\$50,303,000

## Environmental Indicators: 2007/2008

Environmental indicators have been included in the Assessment to provide an overview of Acadia's performance in key areas of environmental sustainability. Indicators include water, heating oil, electricity, waste, and an estimate of Greenhouse Gas Emissions (GHG) and Carbon Tax.

Indicators	Consumption	Cost
<b>Water</b>	34,609,000 gallons	\$188,223
<b>Heating Oil</b>	3,824,721 L Bunker "C"	\$1,762,019
<b>Electricity consumption</b>	16,160,716 kWh	\$1,007,869
<b>Demand (included in consumption total)</b>	(35,750 KVA)	\$375,788
<b>House Properties</b>	155,000 kWh	\$24,000
<b>Waste</b> <i>(see categories below)</i>	439,214 KGs	\$63,593
<b>Diversion rate</b>	54%	--
<b>GHG Emissions</b> <i>(see explanation below)</i>	23,494 MT eCO <sub>2</sub>	<i>Carbon Tax \$234,940 (\$10/tonne)</i>



Figures for water, heating oil, electricity and waste were provided by the Department of Facilities and Physical Plant. In 2007/2008 Acadia used over 34.6 million gallons of water which cost \$188,223. 3.8 million Litres of Bunker C heating oil were used, costing over 1.7 million dollars. Over 16.3 million kilowatt hours (kWh) of electricity were used, including a demand charge of 35,750 Kilo

Volt Amps (determined based on the highest demand of KVA during Dec, Jan and Feb). Total electricity costs were over 1.4 million dollars. Total waste generated at Acadia in 2007/2008 was 439,214 KG and the diversion rate was 54%. Garbage is the largest category of waste, accounting for a just over 44% of the total waste generated at Acadia, followed by organics and cardboard and paper. Waste charges were \$63,593 in 2007/2008. While efforts to recycle and compost are commendable, more attention is needed in the areas of waste sorting, reduction and reuse of materials to minimize waste generated at the university. Further, collective efforts to reduce energy consumption (heating and electricity use) across campus will benefit the environment and reduce operating costs.

Greenhouse Gas Emissions (GHG) have also been included to provide an indication of Acadia's contribution to climate change. Emissions have been estimated using the Canadian version of the Clean Air- Cool Planet Campus Carbon Calculator v6.0 developed for colleges and universities in North America. The calculator uses standard methodologies codified by the GHG Protocol Initiative and emissions factors are customized to Nova Scotia. The figure for GHG emissions is a conservative estimate only, based on only two data inputs in Scopes 1 and 2 and does not include offsets. Scopes define the operational boundaries for GHG emissions (see Appendix B for a further explanation of Scopes). The measurement includes only Residual Heating oil #6 (Bunker C in Litres) and Purchased Electricity (KWH). Emissions are expressed in Carbon Dioxide Equivalents, or eCO<sub>2</sub>, which is a measure of each gas' contribution of to climate change relative to that of carbon dioxide. In 2007/2008 Acadia produced 23,385 MT eCO<sub>2</sub> from heating and electricity use.

A simple estimate of potential tax risk associated with carbon emissions is also included to demonstrate a potential carbon liability scenario for Acadia in the future. The estimate is based on the Province of British Columbia's current carbon tax model. The BC tax rate implemented on July 1, 2008 is \$10 per tonne of CO<sub>2</sub> equivalent emissions, increasing by \$5 per tonne each year for the next four years to \$30 per tonne in 2012. Again, this is a simple estimate only, included as an indication of tax risk should Acadia become liable for Scopes 1 and 2 emissions. The actual scenario for carbon liability in Nova Scotia is unknown at this time, but there is a global trend toward a more regulated carbon market, which will have financial implications for Acadia in the future.

A complete inventory of Acadia's emissions should be conducted in the future and include emissions from Scopes 1, 2, and also 3 where practical. An inventory of GHG emissions should also account for offsets such as forest preservation, certified retail offsets, and green power certificates, which will have a net positive impact on total emissions. However, it should be noted that offsets represent only one component in an effective carbon reduction strategy which must also include infrastructure projects (retrofits and renewables), behavioral changes, and green power.

## Curriculum

### Strategic Plan Ratings

The goals listed in the table below are included in the Acadia Strategic Plan 2006 related to curriculum and sustainability. Participants were asked to rate Acadia's progress on each goal.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
Acadia will ensure that graduates leave the University with a strong awareness of environmental issues and concerns.			1 ½		
Acadia will continue to explore and support innovative teaching about environmental issues and concerns.			2		

### Questionnaire Results

As part of the Sustainability Assessment Questionnaire (SAQ), participants were asked to rate indicators of sustainability related to curriculum.

	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The extent to which Acadia offers courses related to sustainability:</i>				2 ½	
<i>The extent to which sustainability is a focus woven into traditional disciplinary education in science, math, literature, history, arts, etc:</i>			2		

### Course Offerings Related to Sustainability

Courses are offered in the Faculty of Arts, Pure & Applied Science, and Professional Studies. The following is a list of current courses in which sustainability topics are taught.

Arts	Pure & Applied Science
CREL 2413 Ecology and Religion ECON 2713 Economics of the Natural Environment ECON 3713 Environmental Economics ECON 4813 Natural Resource Economics ENGL 3523 The Writer and Nature 1 ENGL 3533 The Writer and Nature 2 HIST 2283 Environmental History HIST 3383 Canadian Environmental History IDST 3103 Environmental Law	APSC 3414 Introduction to Environmental Engineering BIOL 1113 Organisms and Their Environment 1 BIOL 1123 Organisms and Their Environment 2 BIOL 2406 Field Biology BIOL 3013 Natural History and Field Biology BIOL 3373 Aquatic Ecology BIOL 3533 Advanced Ecology 1 BIOL 3573 Environmental Micro-Biology BIOL 4213 Plant Ecophysiology

IDST 3213 Sustainable Nova Scotia PHIL 2303 Critical Perspectives on Environmental Issues POLS 3213 The Politics of Water POLS 3883 The Politics of the Environment POLS 4843 Environmental Political Theory  <b>Professional Studies</b> BUSI 4633 Ethics, Business and Society BUSI 4963 Strategic Issues in Business RECR 1163 Environment and Sustainable Society RECR 1223 Outdoor Recreation and Sustainable Tourism RECR 2463 Issues in Outdoor Recreation RECR 2563 Ecotourism RECR 3563 Environmental Education RECR 4423 Recreational Resource and Environmental Management	BIOL 4423 Conservation Biology BIOL 4543 Estuarine Biology BIOL 4653 Advanced Geology 2 CHEM 2853 Environmental Analytical Chemistry CHEM 4803 Analytical Chemistry 3 CHEM 4823 Analytical Chemistry 4 ENVS 1013 Introduction to Environmental Science 1 ENVS 1023 Introduction to Environmental Science 2 ENVS 2643 Human Activity and the Environment ENVS 3113 Legal Issues in Environmental Science ENVS 3423 Environmental Impact Assessment ENVS 3523 Field Course in Environmental Science ENVS 4013 Environmental Science Project ENVS 4023 Special Topics in Environmental Science ENVS 4423 Reductionism, Holism, Environment GEOL 1033 General Oceanography GEOL 1053 Coastal Oceanography GEOL 1073 Earth Science and Society GEOL 3723 Hydrogeology GEOL 3823 Exploration and Environmental Geophysics GEOL 4833 Exploration and Environmental Geochemistry NUTR 2613 Food Resource Management
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### Increasing Sustainability in Curriculum: Courses, Programs and Approaches

Participants identified numerous individual courses as well as programs of study that are considered essential for an education in sustainability, but that are not currently offered at Acadia. Individual courses that were suggested included:

- Sustainability Fundamentals Prerequisite (for all students)
- Environmental Leadership
- Tools and Concepts for Sustainable Community Development
- Community Engagement Research and Facilitation Methods
- Environmental Sociology
- Environmental Justice
- Environmental Political Economy
- Cultural Perspectives on Sustainability
- Mathematics of Environment & Sustainability, Chemistry & Sustainability, or a combination course such as Math, Science & Sustainability

Additional programs of study focused on sustainability were also considered essential. Participants cited three new programs currently in development at Acadia. A Major in Environmental and Sustainability Studies in the Faculty of Arts has been proposed by professors across three faculties. Within this trans-disciplinary Bachelor of Arts program students can choose one of four streams: Innovation and Entrepreneurship for Sustainability; Environmental Advocacy, Education & Activism; Environmental Thought and Practice; and Sustainable Community Development.

In the Faculty of Professional Studies, the School of Recreation Management and Kinesiology has proposed a Bachelors in Recreation Management with Environmental and Sustainability Studies. The program is an addendum to the major in Environmental and Sustainability Studies to allow students in the Recreation Management program to specialize in environmental and sustainability studies within their degree program. Both proposals have been approved by the Acadia Senate and are currently under review at MPHEC. The new courses proposed as part of the Major in Environmental and Sustainability Studies were considered essential for an education in sustainability. They are:

- ESST 1003 Sustainability Concepts and Systems
- RECR 1163 Environment and Sustainable Society
- ESST 1023 Perspectives on Environmental Philosophy, Thought & Practices
- ESST 2003 Applied Leadership in Sustainability
- ESST 3003 Investigating Sustainability Issues: Research Methods.

The third program currently in development is an undergraduate specialization in Environmental Informatics (Enviro-Informatics) in the Jodrey School of Computer Science in cooperation with Earth and Environmental Sciences. Students will learn the theory and practice of timely collection of data, processing of data into information, and dissemination of information (in all forms) for the creation of environmental knowledge.

In addition to adding new courses and programs specific to sustainability, three other approaches to address gaps in education related to sustainability emerged from the interviews. One approach suggested was to require that core courses within disciplines integrate content related to sustainability to ensure that all students are exposed to principles of sustainability as it relates to their area of study. A second approach was to expand current efforts to incorporate content in courses across all disciplines. Finally, rather than focus on additional areas of curriculum, it was suggested that sustainable living be incorporated into the classroom experience and that changes in behaviour consistent with principle of sustainability be required of all students, staff and faculty.

### **Sustainability and Traditional Disciplinary Education**

Case studies, examples, themes, and applied class projects were described as the usual strategies for integrating sustainability into traditional disciplines. For instance, in *Introduction to Political Science* environmental examples are used to explore core concepts. Themes related to environment and issues in world history such as human development, historical events, and international development are incorporated into *Global History*. Sustainability is also integrated by incorporating applied class projects into course work. For example, Students in *Strategic Issues in Business* developed an alternative energy plan for Acadia University and organized an energy symposium as a group project. In addition, the Arthur Irving Academy for the Environment's attempts to encourage integration of sustainability across disciplines in teaching, research and community engagement through its network of faculty was recognized as an important strategy.

Course content related to sustainability was considered to be woven well into curriculum in some disciplines, such as in engineering, but is less integrated into others. It was noted that if the proposed new Major is approved there will be more integration of sustainability in the Arts. While numerous successful efforts at integration were cited, participants felt that departments need to discuss how to integrate sustainability strategically into courses across all disciplines so that students, regardless of program of study are exposed to important concepts in sustainability. Again,



integrating sustainable lifestyles into the classroom was considered as important as curriculum content.

### Undergraduate Sustainability Requirement

Undergraduates at Acadia are not currently required to take a course on issues related to the environment or sustainability, but this was considered an essential curriculum component by participants.

### Acadia's Role in Ecological and Social Systems

Participants were asked to assign a grade to key areas of curriculum related to the role of the institution in its social and ecological systems that are integrated either through individual, group or departmental efforts. These areas are listed below and each is assigned a grade based on Acadia's grading system.

A = Excellent

B = Good

C = Average

D = Pass

F = Fail

• How the campus functions in the ecosystem (e.g. its sources of food, water, energy, as well as the endpoint of waste and garbage)	<b>C</b>
• A sense of place: the natural features, biota, history and culture of the region	<b>B</b>
• The institution's contribution to a sustainable economy and sustainable local communities	<b>C</b>
• How the institution views and treats its employees (such as staff and faculty involvement in decision-making, their status and benefits)	<b>C</b>
• The basic values and core assumptions that shape the content and methods of the academic disciplines. (i.e. this relates to the value of sustainability within each discipline)	<b>C</b>

Participants recognized that there are some efforts to address these areas in individual courses, but that none of the areas are addressed methodologically in the overall curriculum. Attention is uneven across the departments and it is believed that these topics are not reaching the general student audience, but a small portion of students only. Seriously integrating sustainability into the overall curriculum is not viewed as a priority at Acadia at this time. Further, it was mentioned that students are more exposed to these areas as part of the whole Acadia experience, including extra-curricular activities. For example, though participation in student events and initiatives such as the Acadia Farm and various Academy initiatives exposure to sustainability issues is increased and understanding is enhanced.

## Research and Scholarship

### Strategic Plan Rating

The following goals are included in the Acadia Strategic Plan 2006 related to research and scholarship and sustainability. Participants were asked to rate Acadia's progress on each goal.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
Acadia will become a recognized centre for discussion of environmental issues.			2		
Acadia will continue to promote environmental research and scholarship.			2		
The Arthur Irving Academy for the Environment will bring together scholars and teachers from many departments and schools to consider environmental issues, strengthen teaching about the environment, and address challenges of sustainability.			2		

### Questionnaire Results

Participants were asked to rate indicators of sustainability related to research and scholarship.

	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The amount of research and scholarship being done in the various disciplines of sustainability:</i>				2 ½	
<i>The amount of student research and scholarship being done in the various disciplines of sustainability:</i>			2		

### Estimates of Teaching and Research on Sustainability

There is no centralized registry of environmental or sustainability research on campus. Thus, citing research and scholarship on topics of sustainability as a percentage of total research activity presents a challenge. Instead the Assessment relies on participants' estimates of activity and examples of research as an indication of the extent that sustainability is a focus of research and scholarship activity at the institution. Participants were asked to estimate the amount of overall research and teaching related to sustainability, interpreted broadly. They were also asked to estimate the level of interest in expanding teaching and research in this area.

The estimated percentage of faculty teaching or doing research on sustainability issues was considered to be **25%**. The estimated percentage of faculty members that would be interested in

doing more teaching and research on sustainability issues (provided resources were available to support additional work in this area) was considered to be **35%**.

These figures are averages; interestingly the actual figures reported were widely divergent among participants. Estimates of the percentage of teaching and research were between 10% and 60%. Similarly, estimates of the potential interest in doing more teaching and research were between 12% and 75%.

### **Examples of Research and Scholarship Activities**

Many examples of research and scholarly activities in the area of sustainability were cited by participants. For example, Dr. Richard Karsten in the department of Mathematics and Statistics is examining the potential and impacts of tidal power in the Bay of Fundy and other high tide regions. In the department of political science, Dr. Cynthia Alexander has been engaged in a long-term community-based research program with Inuit of Nunavut to develop sustainable communities that draw on Inuit traditional knowledge and ways of being. Dr. Nelson O'Driscoll's Environmental Biogeochemistry lab in the KC Irving Center is examining the links between changes in climate and contaminant movements in ecosystems. Regional and global models are being developed to predict long-term changes in mercury in soil, freshwater lakes, salt marshes, ocean water, and bioaccumulation in a variety of organisms. In the school of Recreation Management and Kinesiology, Dr. Alan Warner is examining youth engagement in social and environmental justice and formative influences on environmental leadership. Dr. John Colton, also in the school of Recreation Management and Kinesiology, and Dr. Edith Callaghan in the School of Business are studying how municipalities manage their community capital for sustainability. In the School of Engineering, Dr. Paul Arnold's research includes solid waste management and in particular organic waste management.

Student research was considered to mirror faculty research. For example, in the School of Business Ashley Hannon's Honours Thesis (2009) examines senior executive perceptions of sustainability and its translation into operations. In Political Science, Alex Redfield's Honours Thesis (2009) "Small Potatoes: Acting Productively Against the Dominant Agricultural Paradigm" explores local agriculture. Also in the Department of Political Science, Stefan Morales' Master's Thesis (2010) is an exploration of the genealogy of soil over the past 100 years with emphasis on examining the contemporary science of organics in its relationship to social and political discourses.

### **Multidisciplinary/Interdisciplinary Structures**

A number of multidisciplinary and interdisciplinary structures for research, education and public policy development on sustainability issues in place at Acadia were identified. These included the interdisciplinary curriculum program within the Faculty of Arts (i.e. IDST courses) which provides a framework for interdisciplinary education in Arts, and the proposed new Major in Environmental and Sustainability Studies. The KC Irving Environmental Science Centre, the Acadia Centre for Social and Business Entrepreneurship and the Acadia Centre for Estuarine Research were acknowledged as centres that facilitate interdisciplinary activity at Acadia. In addition, the Arthur Irving Academy for the Environment was recognized as a centre for interdisciplinary scholarship, education and advocacy on environmental issues. In particular, the seed grants for interdisciplinary research, which are provided through the Academy, were considered important in facilitating interdisciplinary

research. It was also noted that sustainability is inherently interdisciplinary and that Acadia, due to the nature of the institution (i.e. its small size and structure), is ideally suited to interact in cross disciplinary collaboration.

Although these structures were cited in the interviews, not all participants could identify structures in place at Acadia to facilitate interdisciplinary research, education and policy indicating a low awareness about their interdisciplinary focus. In addition, it was noted that although some structures may exist they are not well supported in terms of resources. For example, the coordinators of interdisciplinary programs are not compensated for work that is above and beyond their positions, and considered “overtime”, and there is little, if any, administrative support. Also, it was mentioned that these structures may not be well supported by faculty in the context of the “body count” required in programs and courses; consequently there may be a reluctance to encourage students to take courses outside a department undermining efforts to promote interdisciplinary activities. Finally, it was noted that the extent to which the Academy addresses the three main areas of its mandate, i.e. scholarship, education and advocacy, should be examined. Attention to public policy issues in particular was not considered to be well addressed by the Academy.

## Operations

### Strategic Plan Rating

The goals listed below are included in the Acadia Strategic Plan 2006 and Campus Master Plan related to operations and sustainability.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
Acadia's commitment to appreciating, preserving, protecting, and sustaining the natural environment is reflected in its facilities, academic centres, research, and academic programmes.			2		
Acadia will continue to renew and sustain natural spaces consistent with the environmental principles of the Campus Master Plan			2		
<i>Campus Master Plan- Planning Principle:</i> Acadia must become a pedestrian-oriented campus.			2		

### Questionnaire Results



Participants were asked to rate indicators of sustainability related to operations.



	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The extent to which Acadia has implemented sustainability practices in overall facilities and operations:</i>				3	
<i>The extent to which operational practices are integrated into the educational and scholarly activities of the school:</i>				2 ½	

### Sustainability in Facilities and Operations

The following table presents an overview of sustainable practices in operations and facilities. The focus of the Assessment is on practices that are implemented at the institutional level although some department/unit level practices have been included where relevant to more than one unit. Current areas of focus at the institution in terms of implementing sustainability in operations are identified with a check mark. A rating is also included to assess the extent to which sustainability practices have been implemented in each area. The scale used is the same as above.

Operations Area	Area of Focus	Rating 0-4	Sustainable Practices
<b>Building Construction &amp; Renovation</b>		<b>3 ½</b>	<ul style="list-style-type: none"> <li>The application for Gold LEED status for the new biology building is currently underway. Building features include geothermal cooling system, occupancy sensors, heat exchangers in the ventilation system, interface carpeting, and certified wood products, etc.</li> <li>KCIC green building features include geothermal cooling system, Rumford Fireplace (60% efficiency), natural materials, energy efficient climate research facilities (phytotrons) and fluorescent lighting.</li> <li>Huggins elevator replaced with energy efficient model (KONE EcoSpace MRL uses less energy, and no hydraulic oil).</li> </ul>
<b>Energy Conservation</b>		<b>3</b>	<ul style="list-style-type: none"> <li>Johnson Controls campus energy audit has been conducted and retrofits are in progress. Eighteen measures are recommended (e.g. lighting, domestic water fixture replacement, building automation systems) and are in various stages of implementation.</li> <li>Recent redesign of the Arena Ice Plant saves energy. Some features include heat recovery to the pool, infrared sensing of ice temp, and system modification according to usage schedule.</li> <li>Soot blowers have been added to the central heating plant resulting in a 4% increased efficiency.</li> <li>New hybrid boilers installed in 2008 are capable of burning both No. 6 and No. 2 fuel and are also certified for natural/Bio gas. However, alternative fuels are not available at this time and Acadia is still using Bunker "C" oil.</li> </ul>
<b>Waste Reduction</b>  (i.e. efforts to reduce generation of waste as opposed to waste management)		<b>2</b>	<ul style="list-style-type: none"> <li>A webpage has been created for Senate members to access documents electronically to reduce production of paper documents.</li> <li>HR is planning to eliminate paper payroll advices and replace them with an electronic version. The changeover is planned for spring 2009.</li> <li>A student campaign resulted in the elimination of the extra page produced by each print job at user support.</li> <li>Chartwells eliminated Styrofoam from operations.</li> <li>Chartwells is now using compostable cups, soup bowls, unbleached napkins, wooden stir sticks in retail, and bulk sugar and cream. However, some of these products are confusing for consumers and are not accepted at the local waste facility.</li> <li>In partnership with students, Chartwells established two tray-less days per week at Wheelock Hall.</li> </ul>
<b>Waste Reuse &amp; Recycling</b>		<b>3</b>	<ul style="list-style-type: none"> <li>A four stream waste management program is in place at Acadia (includes plastic/metal recyclables, organics, paper, garbage).</li> <li>Multi-stream waste containers are located in all facilities.</li> <li>Arena and Residence waste sorting guides have been developed.</li> <li>The Dump &amp; Run is held each spring to encourage re-use.</li> <li>AES Free-Store established in Jan. 2009.</li> <li>A surplus equipment/materials policy is in place to encourage redistribution of office furniture and equipment and reduce costs.</li> </ul>
<b>Sustainable</b>		<b>2</b>	<ul style="list-style-type: none"> <li>Approximately 60% of food is purchased locally by Chartwells. Local is defined as within Nova Scotia for this Assessment. However, local</li> </ul>

Operations Area	Area of Focus	Rating 0-4	Sustainable Practices
<b>Food Program</b>			<p>purchasing includes food procured from local suppliers, producers and growers, thus not all locally purchased food is actually grown or produced in Nova Scotia. Taking this into account the percentage of food grown locally would be substantially lower.</p> <ul style="list-style-type: none"> <li>• Examples of local food purchasing includes Just US coffee, Foxhill cheese, and Stirling apples.</li> <li>• 30% of coffee and 20% of tea purchased by Chartwells are organic and fair trade certified.</li> <li>• Chartwells joined the OceanWise Sustainable Seafood Program in 2008 which involves product replacement and educational initiatives.</li> <li>• Use of transfat oil has been eliminated on campus.</li> <li>• The Acadia Community Sustainable Farm supplies organic produce to Wheelock Hall, and supports the local food bank. This produce is carbon neutral in its delivery and requires no disposable packaging.</li> <li>• Fair Trade coffee and tea is available at the KCIC café, and other retail locations on campus.</li> </ul>
<b>Water Conservation</b>		<b>3 ½</b>	<ul style="list-style-type: none"> <li>• Only rarely are Acadia's grounds irrigated. With the recent installation of synthetic turf on Raymond Field, Acadia now has no regularly scheduled irrigation; lawn is only watered when new sod is laid or in front of University Hall in periods of extreme drought. Any water used to irrigate new sod is drawn from the municipal water supply and is potable.</li> <li>• The grounds of the K.C. Irving Environmental Science Centre are an exception. The 3 acres of lawn are watered twice weekly if necessary and water is drawn from its own well and is considered potable. There is no data available on the volume of water used for this purpose.</li> <li>• H2O free urinals have been installed in high volume areas (Uhall, Festival Theatre, BAC, Huggins, Seminary, Wheelock, Biology). Others to be replaced as necessary.</li> <li>• Low flush/automatic toilets have been installed. Others are to be replaced as necessary.</li> <li>• Rainwater harvesting was installed for toilets in the new biology building.</li> <li>• Foam hand soap dispensers have been installed, reducing water use.</li> </ul>
<b>Sustainable Landscaping</b>		<b>3</b>	<ul style="list-style-type: none"> <li>• There is no policy in place regarding sustainable landscaping, however Acadia follows the Town of Wolfville's "Pesticide Management Policy" which endorses "Sustainable Plant Health Care" defined as "an approach to caring for plants that uses, to the greatest extent possible, natural methods that foster healthy disease and pest resistant plants, such that the need for the use of pesticides (or fertilizers) is eliminated."</li> <li>• Chemical fertilizer is not used on the Acadia campus, except on the grounds of the K.C. Irving Environmental Science Centre as required.</li> <li>• Ice-melt used on campus is a biodegradable alternative.</li> <li>• KCIC/HIBG Acadia Forest Region restoration program, native gardens, and maritime seed bank contribute to a sustainable landscape at Acadia.</li> </ul>
<b>Sustainable Transportation</b>		<b>2 ½</b>	<ul style="list-style-type: none"> <li>• Pedestrian oriented campus plan has been implemented with parking relocated mainly to the periphery of campus.</li> </ul>

Operations Area	Area of Focus	Rating 0-4	Sustainable Practices
			<ul style="list-style-type: none"> <li>Bike racks installed in some locations across campus.</li> <li>Electric club cars have been added to the Physical Plant fleet.</li> <li>The AES created a rideshare program <a href="http://www.theasu.com/rideshare">www.theasu.com/rideshare</a> to encourage carpooling.</li> <li>Acadia Shuttle Bus Service is available.</li> <li>A Walkhome Service is available.</li> </ul>
<b>Green Purchasing</b>		<b>2</b>	<ul style="list-style-type: none"> <li>Ecolab is the primary vendor for cleaning products. 90% of the cleaning products and some equipment used on campus are Green Seal certified.</li> <li>The primary vendor for paper products (e.g. paper towel, toilet paper) is Kimberly Clark. Kimberly Clark is a member of the Green Building Council and all products supplied to Acadia contain some recycled material (varies by product), and are designed to reduce packaging.</li> <li>Green purchasing standards have been implemented for the new biology building to comply with LEED criteria.</li> <li>Acadia participates in the Sustainable Procurement Network through Interuniversity Services Inc.(ISI). Collective purchasing areas include fine paper (30% RC), photocopiers, car rental, courier services, plumbing &amp; electrical supplies, waste bags, etc. ISI has also established a Sustainability Task Force, and recently developed a draft sustainability policy.</li> <li>Sustainability objectives are considered in the tendering process, although a formal policy has not been developed.</li> <li>Acadia is a founding member of the Annapolis Valley Resource Sharing Group which is a network of industries and institutions created to facilitate purchasing of used and surplus equipment and parts.</li> </ul>
<b>Reduction of Toxic Materials &amp; Radioactive Waste</b>		<b>2 ½</b>	<ul style="list-style-type: none"> <li>A Toner and ink cartridge collection depot is located at the post office.</li> <li>A new exterior storage centre and chemical audit is in progress.</li> <li>Reduction of toxins is considered in new construction e.g. low VOC paints.</li> <li>Battery collection bins are located around campus. Used batteries are delivered directly to Valley Waste for disposal.</li> </ul>
<b>Environmental / Sustainability assessments or audits</b>		<b>3</b>	<ul style="list-style-type: none"> <li>First comprehensive Acadia Sustainability Assessment has been conducted.</li> <li>AASHE STARS (Sustainability Tracking, Assessment &amp; Ratings System) pilot participation (selected sections)</li> <li>Residence Footprint Project (selected indicators)</li> <li>Campus Sustainability Assessment Framework (CSAF) – A multi-stakeholder committee was formed in 2006 to begin a CSAF Assessment, which is traditionally student/faculty driven. The process involved discussion and several class projects and although a full assessment was not implemented, the initiative paved the way for future assessments such as AASHE STARS and the Acadia Sustainability Assessment.</li> </ul>
<b>Other</b>	<b>NA</b>	<b>NA</b>	<ul style="list-style-type: none"> <li>FieldTurf on Raymond Field eliminates the need for herbicides, pesticides, fertilizers and water. Recycled rubber from tires is used as infill and 95% of turf materials can be recycled. <i>(NB: Although there are benefits in terms of reduced maintenance and inputs, the full environmental costs of artificial vs. natural materials over the life cycle of the product has yet to be determined).</i></li> </ul>



## Visible Signs of Sustainability at Acadia

Participants were asked to identify visible signs that the institution was committed to sustainability from the perspective of a visitor or prospective student. The following signs of sustainability were reported:

- |  |  |
|--|--|
| ✓ Harriet Irving Botanical Gardens / Woodland Trails (& native species interpretive signage) | ✓ Sustainability in action signage at Meal Hall          |
| ✓ Woodlands maintained in a natural manner   | ✓ Green campus (trees and greenspace)                    |
| ✓ KCIC Research Centre & Seedbank  | ✓ Ecohouse   |
| ✓ Farmer's Market  | ✓ Wind turbine/solar panel at SUB                        |
| ✓ Dump & Run   | ✓ Electric cars  |
| ✓ Blue bins and multi-stream waste receptacles, especially compost                           | ✓ Smoke-free campus                                      |
| ✓ Washrooms: dual flush toilets, low-flush toilets, H <sub>2</sub> O free urinals            | ✓ Pedestrian-oriented campus                             |
| ✓ Natural materials visible in new construction  | ✓ Rainwater use in new bio building                      |
| ✓ New lighting (fluorescents)  | ✓ Posters around campus encouraging the 3Rs              |
| ✓ Residence Education signs (e.g. reduce water use, turn off lights)                         | ✓ Posters advertising environmental events around campus |
|  | ✓ People using reusable mugs                             |
|  | ✓ Acadia Farm (but somewhat tucked away)                 |

## Visible Signs of Unsustainable Practices at Acadia

Visible signs around campus that the university is *not* committed to sustainability are equally important as they undermine engagement, education and promotions efforts. The following are considered visible signs of *unsustainable* practices at Acadia, again reported from the perspective of a visitor or prospective student:

- |  |  |
|--|--|
| ✗ Disposable water bottles   | ✗ Not enough signage/messaging to highlight sustainability initiatives               |
| ✗ Windows open on cold days  | ✗ Smoke stack @ heating plant  |
| ✗ Inadequate heating regulation within buildings i.e. temperature extremes                         | ✗ Amount of garbage on campus  |
| ✗ Vehicles idling on campus and lack of anti-idling signs  | ✗ Garbage bins full of bottles and paper (not sorted/ contamination of recycling)    |
| ✗ Lots of cars around for a small campus   | ✗ Litter on University ave. (esp. Macdonald's bags)                                  |
| ✗ Parking lot size; lots of space devoted to parking   | ✗ Limited fair trade coffee options on campus  |
| ✗ Car "traffic" on University Avenue and Uhall   | ✗ Ease of access to elevators and high usage   |
| ✗ Gas & diesel powered vehicles  | ✗ Old, under-maintained, inefficient houses  |
| ✗ Leaf blowers   | ✗ Artificial turf  |
| ✗ Lights left on in unoccupied facilities across campus (offices, classrooms, sports fields, etc.) | ✗ Turf mowing (need more hardscapes and meadows)                                     |
| ✗ Lights weren't shut off for earth hour   | ✗ Too much manicured lawn  |
| ✗ Lights on in early AM, and at other unnecessary times (e.g. Learning Commons. Dining hall)       | ✗ Too many paved walkways  |
| ✗ Lawn watering/irrigation   | ✗ Salting  |
|  | ✗ Not enough trees (lost trees not replaced)   |
|  | ✗ Unsustainable practices are all around us, so specific ones don't jump out as much |

## **Integration of Operations**

Participants reported that efforts to integrate operational practices related to sustainability into educational and scholarly activities are generally focused on waste management procedures and facilities operations. For example, Physical Plant staff meet with students at the beginning of the year to provide a facilities orientation mainly involving a review of the heating/ventilation system, and instruction in sorting waste and recycling. They also provide support for student educational and outreach activities such as Dump & Run, Heap Day and No Paper Towel Days in participating residences. Some information on waste management is provided to new faculty and staff. Finally, as described above, integration of operations is often accomplished through applied class projects. For example, a recent project with students in engineering involved evaluating opportunities for collecting waste heat from warm wastewater in order to pre-heat water on campus. In these projects staff from Facilities, Physical Plant, and other departments work directly with students.

## Faculty and Staff Development and Rewards

### Strategic Plan Rating

There are no goals included in the Acadia Strategic Plan that address faculty and staff development specific to sustainability. However, the Department of Human Resources has incorporated two objectives related to Acadia's strategic goals regarding the environment into the HR department strategic plan. The Executive Director of Human Resources was asked to rate the department's progress on achieving those objectives using the same scale as for the Acadia Strategic Plan goals.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
Through staff and faculty orientation programs and other means, inform employees about the University's environmental sustainability initiatives.		1			
Examine and implement means for improving the environmental sustainability of the HR Department's work processes and methods.			2		

### Questionnaire Results

Participants were asked to rate indicators of sustainability related to faculty and staff development and rewards.

	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The extent that hiring criteria recognizes faculty member contributions to sustainability (in scholarship, teaching, or campus and community activities:</i>		1			
<i>The extent that criteria for tenure and promotion recognize faculty member contributions to sustainability:</i>			1 ½		
<i>The extent that criteria for hiring and promotion recognizes staff member contributions to sustainability (in regular responsibilities and campus and community activities:</i>		1			
<i>The extent to which the university provides significant faculty and staff development opportunities to enhance understanding, teaching and research in sustainability:</i>			2		

### **Faculty Hiring and Promotion Policy**

Participants reported that criteria for hiring and promotion are focused mainly on scholarship and service. Contributions related to sustainability are only considered specific to certain relevant positions rather than given broad consideration among all faculty hiring and promotion. However, it was noted that although the collective agreement doesn't specifically address sustainability, it doesn't discount it either. Criteria include service to the university and to the community "based on the candidate's academic or professional expertise" which can be interpreted specific to contributions to sustainability. Further, service could be broadly interpreted to include sustainability as a focus for all faculty regardless of area of expertise. It was also noted that the "openness" to interpretation in the collective agreement at Acadia is unusual compared to research intensive institutions that have more rigid requirements for faculty performance and that this is beneficial for Acadia. In addition, it was suggested that course evaluations could incorporate teaching related to sustainability.

### **Staff Hiring and Promotion Policy**

There are no criteria for recognizing staff contributions to sustainability, except in the case of staff positions that are focused on aspects of sustainability. For example, in the Department of Facilities and Physical Plant there is some recognition for improving efficiency and fiscal savings, but overall the focus on sustainability is limited. It was suggested that although there are no explicit considerations for staff contributions to sustainability in terms of standard objectives, sustainability could be made a criteria in work performance objectives and expectations among all staff.

### **Professional Development Opportunities**

A number of professional development opportunities for enhancing understanding, teaching and research in sustainability for staff and faculty across campus were reported by participants. Many of these are events and activities facilitated through the Academy, such as the Green Campus Summit and Focus Acadia. The Academy research seed funding program was also mentioned as a professional development opportunity for faculty. In addition, as part of the student-run Eco-Olympics event held in March 2008, a number of students, staff and faculty participated in the SEEC (Sustainable Energy Education & Communications) e-learning modules developed by Johnson Controls. In January 2009 budget officers and building managers participated in a sustainability training workshop facilitated by Dr. John Colton and Dr. Edith Callaghan. Finally, many professional development opportunities were reported by Physical Plant. For example, staff meet for weekly toolbox meetings to discuss matters such as recycling on campus. There are also activities related to regulation compliance and trade specific and supplier training (e.g. use of coldwater chemicals). These activities were considered important, but participants felt that the University needs to provide more professional development opportunities related to sustainability in higher education.

## Outreach, Service and Partnerships

### Strategic Plan Rating

The following goals are included in the Acadia Strategic Plan 2006 related to outreach, service, and partnerships. These broad goals have been interpreted specific to sustainability for the purpose of the Assessment.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
Acadia will help campus educators develop both classroom and out-of-classroom learning opportunities that place students in the community for educational purposes while addressing community [sustainability] issues and concerns through research (including, especially, undergraduate research), programmes, or services.			1 ½		
Acadia will continue to affirm and support [sustainability related] volunteer service in the community by students, faculty, and staff, and will recognize and highlight their community contributions and achievements.			1 ½		

### Questionnaire Results

Participants were asked to rate indicators of sustainability related to outreach, service and partnerships.

	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The extent to which Acadia is involved in sustainable development work through formal partnerships or relationships at regional, national or international levels:</i>				2 ½	

### Formal Partnerships and Relationships

Many examples of partnerships and formal relationships between Acadia and other organizations at regional, national and international levels were cited by participants. For example, in 2008 Acadia and Ducks Unlimited developed a long term partnership to provide funding for student research. The funding is for joint wetland and waterfowl research in the Atlantic region such as salt marsh, dykeland and wetland ecosystem conservation and restoration projects for the next ten years. In 2007, Outward Bound Canada and Acadia University partnered to offer university students accredited courses that combine outdoor experiential education and Outward Bound leadership development training. The Acadia Centre for Estuarine Research, established in 1985 to focus research attention on estuaries and near shore coastal waters, particularly the estuarine systems of

the Bay of Fundy and the hydrographically-related Gulf of Maine and Georges Bank, encourages multidisciplinary research involving scientists and students from different disciplines and different institutions at regional, national, and international levels.

Through participation in and support of conferences Acadia effectively develops partnerships and relationships that support sustainable development. The Environmental Science Sustainability Conference and the Atlantic Provinces Council on the Sciences (APICS) Atlantic Undergraduate Biology Conference are recent examples.

Acadia faculty also serve in volunteer positions to support sustainable development at regional, national, and international levels. Dr. Edith Callaghan, Director of the Arthur Irving Academy for the Environment, serves as member of the Nova Scotia Round Table on the Environment and Sustainable Prosperity. The nineteen member committee advises the Minister of Environment on issues relating to environmental sustainability, public health and economic competitiveness. Dr. John Colton, Recreation Management and Kinesiology, serves as the Chair of the Atlantic Canada Sustainability Initiative, which facilitates sustainability in Atlantic Canada. In addition, a number of Acadia faculty are involved in SAMPAA (Science and Management of Protected Areas Association). SAMPAA is a national not for profit which works on behalf of the entire protected areas community and the national office is based at Acadia.

### **Local Outreach, Community Service and Service Learning**

Participants also cited many examples of sustainability related local community service, outreach and service learning initiatives in place at Acadia. For example Dr. Glyn Bissix, Dr. Edith Callaghan and Dr. John Colton were instrumental in the development of the Wolfville Sustainability Initiative through their involvement in the Centre for Rural Sustainability. Also, Dr. Alan Warner works closely with Just Us promoting and advocating for fair trade and social justice issues.

Events open to the public were viewed as important outreach opportunities to raise awareness about sustainability issues and share expertise on campus with the local community. Recent examples included the Science Café, various guest speakers, and Focus Acadia.

In addition, many faculty have developed ongoing local partnerships to facilitate student service learning opportunities. Projects with the Town of Wolfville such as the recent Wolfville Streetlight Assessment conducted by engineering students provide significant learning opportunities outside the classroom as well as provide the community with useful services related to sustainable development. Projects with the Kentville Agricultural Centre provide students with unique learning opportunities as well. Also, it was noted that Acadia has co-op placements for students, but is unknown how many of these placements may relate to sustainability.

## Student Opportunities

### Strategic Plan Rating

The following goal is included in the Acadia Strategic Plan 2006 related to student opportunities and sustainability.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
Introduce residence programming that supports the objectives of Acadia's academic mission. Programming will include activities that foster an appreciation for the environment, explore cultural diversity and encourage responsible citizenship.			2		

### Questionnaire Results

Participants were asked to rate indicators of sustainability related to student opportunities.

	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The extent that students groups across campus are directly involved in sustainability initiatives.</i>				2 ½	

### Student Opportunities and Organizations

Participants reported on various opportunities for involvement and learning related to sustainability available to students at Acadia. A check indicates that the opportunity is currently available; an x indicates that the opportunity is not available, and both marks indicate that an opportunity is somewhat available, but is not yet adequately developed in terms of facilitating sustainability.

#### ✓ Student Environmental Centre

Acadia's student environmental centre is located on the second floor of the Students' Union Building. The centre is shared by the Acadia Sustainability Office (SO) and the Acadia Environmental Society (AES). The office is also home to the AES FreeStore.

#### ✓ Ecology House or Sustainable Dormitory

The Acadia Eco-House is university owned property on Westwood Ave. and was created in 2008 to house likeminded students who were interested in the environment and issues of sustainability. In addition to living in an environment built around the idea of promoting sustainable living Eco-House students are involved in many campus initiatives and work closely with other student groups with similar interests. Eco-House was the brainchild of Kenton Lambert, a 4th year Biology student and second year Resident Assistant and was developed in

partnership with the Department of Residence Life, University Administration, the Arthur Irving Academy for the Environment, and members of Acadia's faculty.

✓✗ **Orientation Programs on Sustainability for Students**

New students receive an orientation related to sustainability, but it is generally limited to facilities operations (e.g. HVAC system) and waste sorting. In 2008/2009 the orientation for Resident Assistants and Assistant Resident Directors was expanded. The Director of the Arthur Irving Academy for the Environment provides a presentation on foundations of sustainability to explore principles of sustainability as it relates to the student experience.

✓ **Student Groups with an Environmental Focus**

*ASU Sustainability Office (SO)*

The SO is an internal organization of the Acadia Students' Union dedicated to strengthening and accelerating sustainability action at Acadia University. With student support, the SO advocates for green policy change in the University and the ASU.

*Acadia Environmental Society (AES)*

The AES, also an internal organization, is committed to creating awareness on campus and in the Wolfville community about environmental issues.

*Environmental Science Student Organization (ESSO)*

ESSO is a club comprised of students in Environmental Science. The club's mandate is to promote camaraderie and student to student mentorship in partnership with the Earth & Environmental Science Department. The organization hosts and promotes events that encourage environmental stewardship and increase knowledge and understanding of the natural world.

*Chase Court Environmental Group (CEG)*

The Chase Court Environmental Group is a group of students living in residence who are concerned about environmental issues and who are committed to taking action in their residence and on campus. Members of CEG work with and support the activities of the Sustainability Office and the Acadia Environmental Society.

✓ **Other Groups/Opportunities**

*Acadia Community Sustainable Farm*

The Acadia Farm was created by students in September 2008 to grow organic vegetables to serve in Wheelock Hall. Garden plots are also available to the community and surplus vegetables are donated to the local food bank.

*Acadia Student Environment Network*

The Acadia Student Environment Network was created in 2008 to facilitate information sharing and cooperation among students on campus to lead to a more coordinated approach to campus sustainability initiatives involving students. Membership includes representatives from student environmental groups and individual students who are actively engaged in sustainability initiatives on campus. The network meets monthly and is hosted by the Arthur Irving Academy for the Environment.



#### *Residence Eco-Reps*

Although not required for each house, many residences have elected Eco-Reps. Eco-Reps coordinate environmental or sustainability oriented activities in their residences, work with the AES and SO, and some are members of the Acadia Student Environment Network. Some RAs and ARDs serve in this capacity depending on their level of interest.

#### *Eco-Olympics 2008/2009*

This annual student-run competition between residences and off campus students involves a series of events designed to educate students about environmental issues and to reduce energy, waste and water on campus. The grand prize of \$1000, provided by Arthur Irving, is donated by the winning team to a charity of their choice. Prize recipients have included the Wadeng Wings of Hope, the Acadia Farm, and the Kids Action Program in Canning.

#### *AES FreeStore*

The Acadia Environmental Society started a “FreeStore” in January 2009 open to the Acadia community and the general public. Located on the second floor of the Student Union Building, the store is a trading post for school and art supplies, clothes, small household and other items.

### **Commitment to Sustainability and Career Planning**

Participants also reported on student commitments to sustainability and career planning and development opportunities. Again, a check indicates that the opportunity is currently available; an x indicates that the opportunity is not available, and both marks indicate that an opportunity is somewhat available, but is not fully developed.

#### **✗ Job fairs and career counseling focused on sustainable enterprises**

Faculty and staff offer support and encouragement to students interested in making sustainability a career focus, but career development programs, which span all disciplines, are not available at an institutional level.

#### **✗ Pledge of social and environmental responsibility**

A university wide pledge of social and environmental responsibility is not required of students; however some pledges have been initiated by students themselves on a voluntary basis such as “No Tray Pledge”, “No Paper Towel Pledge”, and the Eco-Olympics “Pledge of Green”.

#### **✓ Other**

The proposed interdisciplinary Major in Environment and Sustainability Studies was identified by students as a significant educational and career opportunity related to sustainability.

### **Student Involvement on Campus**

Participants reported that the extent of involvement in sustainability initiatives at Acadia is dependent on the particular student group and their mandate. It was noted that many students are willing to participate in activities, such as signing petitions or events, but that a much smaller group of students are actively engaged, and other students simply have different interests. It was also mentioned that students need more “top down support” from administration. Many projects that are student driven on campus need more willingness and involvement on the part of administration to make big changes.

## Administration, Mission and Planning

### Strategic Plan Rating

The following goal is included in the Acadia Strategic Plan 2006 related to administration, mission and planning and sustainability.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
The "Tides are Turning" Campaign will emphasize fundraising for environmental initiatives.*			2		
The University will review its administrative policies and contracts regarding facilities and services to ensure sustainability.			2		

\* In almost all cases, there were minimal variations in ratings among participants; however there were a wide range of responses to the "Tides are Turning" goal. Some rated no progress on this goal and some rated that the goal was achieved. The extent to which this campaign resulted in funding for environmental initiatives is unclear.

### Questionnaire Results

Participants were asked to rate indicators of sustainability related to administration, mission and planning.

	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The extent that formal written statements describing the purposes and objectives of the university (e.g. brochures, planning documents) reflect a commitment to sustainability</i>				2 ½	

### Documentation of Sustainability

The University Strategic Plan was cited as an official document that incorporates content related to sustainability and the environment. The vision for the university includes creating a deep appreciation of our natural environment and an active commitment to sustainability, and the environment is included among the eight strategic planning themes. However, it was noted that the goals were not always clearly stated and that the university needs to implement sustainability in department and unit plans as well. Other university documents were not considered to have much content that reflected a commitment to sustainability.

### Positions, Committees and Administrative Practices

The following positions, committees and practices created to reinforce sustainability were identified at Acadia. A check indicates that the position, committee or practice is in place; an x indicates that it

is not, and both marks indicate that it is partially in place, but is not addressed adequately in terms of facilitating sustainability.

✓ **Environmental Council or Task Force**

Some participants reported that there was no council or task force in place at Acadia to facilitate sustainability. However, others were aware that a multi-stakeholder Sustainability Team was formed by Dr. Tom Herman, Acting President and Vice-Chancellor in February 2009. It was also mentioned that the Academy Council could serve in this capacity, although not in its current form or function.

✓ **Environmental Coordinator- ( ✓ )student or ( ✓ )staff member**

Most participants were aware of at least some of the positions on campus dedicated to sustainability or environmental initiatives. In terms of staff, students and faculty whose primary responsibility involves coordinating environmental programs and initiatives, there are four dedicated positions at Acadia. The Sustainability Office and the Acadia Environmental Society, both internal organizations of the ASU, employ student coordinators who are responsible for environmental initiatives involving students on campus. The Sustainability Projects Coordinator is a staff position in the Arthur Irving Academy for the Environment that works collaboratively with faculty, staff and students. Specifically, this position is responsible for data and information collection and dissemination, coordinating and facilitating various sustainability projects, education, outreach and communications initiatives. Also, Physical Plant staff includes an Environmental Services Coordinator responsible for custodial services, grounds services and waste management including recycling.

✓ **Dean of Environmental Programs or Director of Sustainability Programs**

(i.e. A high level officer responsible for these activities)

The Director of the Arthur Irving Academy for the Environment is considered by most to be the high level officer responsible for sustainability activities on campus. The Director has a broad role at Acadia related to research, advocacy, outreach, operations, and education and is supported by a Council of academics who oversee the activities of the Academy. It was noted that the Director does not however, serve as a Dean of academic programs related to the environment or sustainability.

✓✗ **Energy Officer**

Most participants reported that Acadia did not have an energy officer, but a few recognized that Physical Plant is involved in energy monitoring and management. The Physical Plant Operations & Maintenance Manager oversees the energy management function of the organization. This role is primarily focused on energy management, air quality and energy conservation services related to HVAC systems on campus. It was noted that this role is focused mainly on facilities management, and was reactive rather than proactive in its approach (i.e. managing systems rather than exploring alternatives, and innovative energy solutions from a sustainability perspective).

✓✗ **Green Purchasing Coordinator**

Again, most reported that Acadia does not have a green purchasing coordinator, but a few participants were aware that some green purchasing was being done by Physical Plant (e.g. cleaners, ice-melt). In addition, as described in the operations section, there are a number of

efforts to purchase environmentally conscious products for Acadia, however, no one is formally charged with this responsibility and there is no policy in place to guide green purchasing.

✓ **Institutional Declaration of Commitment to Sustainability/Environmental Responsibility**

A few participants were aware that Acadia was a signatory to the Talloires Declaration, but most were not.

✓ ✗ **Orientation programs on sustainability for faculty and staff**

Most participants were not aware of existing orientation programs on sustainability, but HR does provide information and brochures on the recycling program for new staff and faculty. Also, for the past two years the Director of the Academy has presented on campus sustainability at Acadia in new faculty orientations. Orientation programs in Physical Plant are trade specific.

✓ ✗ **Socially responsible investment practices and policies**

Most participants were not aware of any investment policies in place at Acadia. A few however, were aware that there was intent at Board of Governors to address this issue, but were not sure of the status of this initiative. No one was aware that the ASU has an ethical investment policy.

✓ **Regularly conducted environmental audits**

Various types of environmental audits were identified. These included reports on monthly waste diversion rate, and other waste figures, monthly energy audit, and ongoing water, electricity, and oil monitoring. However, these tend to be focused on environmental monitoring rather than auditing. The Johnson Controls project was mentioned as an example of an environmental audit as well as the work of engineering students on class projects related to sustainability on campus. Also, the Sustainability Assessment was mentioned as a good beginning of a comprehensive audit of the institution.

✓ **Other:**

*Atlantic Universities and Colleges Sustainability Network*

Acadia is a member of the Atlantic Universities and Colleges Sustainability Network, which is comprised of sustainability coordinators, facilities managers, and other staff charged with sustainability responsibilities at colleges and universities in Atlantic Canada. The mandate of the group is to facilitate information sharing, networking and collaborative projects.

*Canadian Alliance of College and University Sustainability Professionals (CUSP)*

Acadia also participates in the recently formed Canadian Alliance of College and University Sustainability Professionals. The initial mandate of this group is to share information, encourage collaboration, and facilitate joint learning and professional development opportunities.

*TNS Learning Network*

Acadia is a founding member of The Natural Step Learning Network. The TNS Learning Network involves a variety of learning events and programs as well as an interactive online resource database and networking platform. It convenes its members through national, regional and sector-specific conferences and events, provides peer-to-peer webinars and guest expert webinars, provides eLearning courses, distance learning courses and certification for professionals.

*Association for the Advancement of Sustainability in Higher Education (AASHE)*

AASHE is an association of colleges and universities in the U.S. and Canada working to facilitate a sustainable future. AASHE aims to advance the efforts of the entire campus sustainability community by uniting diverse initiatives and connecting practitioners to resources and professional development opportunities. The mandate and goals of AASHE are well matched to the holistic approach that Acadia University takes toward sustainability. Acadia has been a member of AASHE since 2007.

## **Campus Events and Activities**

A concern for sustainability is given visibility on campus through a variety of events and activities. Numerous events have taken place at Acadia over the past few years. Examples cited by participants included:

Science café – various dates	Acadia Farm Tomato Symposium – August 2008
Conferences – various dates	Renewable Energy Symposium – November 2008
Green Campus Summit - September 2007	Waste Reduction Week & Heap Day – Oct. 2008
Wolfville EcoFair- October 2007	One Million Acts of Green– Oct. 2008-Jan. 2009
Eco-Olympics - March 2008 and Oct. 2008	Housewarming workshops - February 2009
Focus Acadia on Climate Change – March 2008	World Water Week – March 2009
Focus Acadia on Energy – March 2009	Global Village Art Exhibit – March-May 2009

## **Strengths and Weaknesses in Educating for Sustainability**

Participants reported numerous strengths and weaknesses at Acadia in educating for sustainability. It was noted that as an educational institution, Acadia is in a strategic position in society to educate for sustainability and that faculty, staff and students all have a role to play. Faculty who are concerned about issues of sustainability, who try to work together, and who bring sustainability into the classroom were considered an important strength. In particular, experts in education on campus who are knowledgeable about how to spread the sustainability message were viewed as an asset. Students involved in initiatives on campus were also considered to be a strength at Acadia. Participants also felt that a commitment to sustainability at the senior level of administration was important.

Programs of study related to sustainability, such as Recreation Management, were also considered a strength at Acadia. It was also noted that content woven into many courses was important, although these efforts are not very visible (especially in terms of attracting students). Further, having sustainability or environmental programs as well as courses incorporating content related to sustainability was considered important. It was also recognized that the university has done a good job introducing a quality program in environmental science for students who are interested in this area. In particular, ENVS 2463: Human Impact and the Environment, which is open to non-majors and has 70 students enrolled from a variety of disciplines was viewed as a strength.

Finally, the location of Acadia was also considered an asset in educating for sustainability in that the Town of Wolfville has paid attention to sustainability issues, which facilitates community engagement and a supportive local culture. Thus, the university and the town are not operating in

complete isolation. The no-smoking policy was cited as an example of a mutually supportive initiative.

A variety of weaknesses at Acadia in educating for sustainability were identified. Participants felt that the current academic and administrative structures inhibit interdisciplinary sustainability work on campus. Structures are not adequate to support these collaborative endeavors and there are too many barriers to overcome. The challenges in creating the new interdisciplinary ESST program in the Arts and Professional Studies were cited as an example. It was also mentioned that there are not enough opportunities for bringing people together to facilitate collaboration. In addition, the inherently diverse nature of the institution (in disciplines and various functions of the university) was viewed as a challenge in mobilizing everyone around a single issue. Lack of resources available to support sustainability efforts was also viewed as a weakness. Finally, participants felt that sustainability doesn't have a very high profile on campus and that this was a weakness in terms of educating for sustainability.

### **Next Steps at Acadia: In Progress**

A variety of “next steps” are currently in progress at Acadia to strengthen the institution’s commitment to sustainability. Initiatives underway include:

- The new Environmental and Sustainability Studies, and Enviro-Informatics programs are scheduled to accept students in fall 2009.
- The Department of Human Resources is developing a “share-the-air” initiative (including the no-smoking policy and sensitivity on the use of scented products, etc.) that will be incorporated in the staff and faculty orientation.
- The Acadia Community Farm is planning to expand production, outreach and education programs if funding can be secured for a full-time Farm Manager.
- Preliminary discussions have taken place regarding alternative energy options for Acadia.
- Physical Plant and the Department of Facilities are preparing a new landscape plan with the Sodexo Landscape Consultant. One initiative is to convert the turf behind tennis court to a low maintenance naturalized meadow.
- Physical Plant is looking into solar panel installation for the electric clubs cars.
- A waste sorting station is being established on campus to improve the diversion rate.
- A cardboard bailer has been purchased to compact cardboard for use by Minas Basin Pulp and Power.
- A microfiber cleaning system is in being implemented in the new biology building; additional systems will be added as replacements are required and resources permit.
- Food waste from campus has been designated as feed for a local biodigester.
- The Department of Facilities is undertaking an energy analysis for buildings.
- The Department of Facilities is developing a chemical exchange program (ChemEx)
- Many projects are underway at the Academy such as a collaborative GHG emissions inventory and policy assessment with the Atlantic Universities and Colleges Sustainability Network in partnership with ISI. In 2009/2010 the Housewarming program will be expanded, phase two of the Residence Footprint program will be implemented, and various waste

management initiatives are planned in partnership with Physical Plant and the Department of Facilities.

### **Next Steps at Acadia: Advancing Sustainability**

“Next steps” not currently in progress, but that participants felt should be implemented at Acadia to advance sustainability include:

- Develop a sustainability policy and energy policy to ensure a coordinated plan at the University.
- Incorporate sustainability to various HR functions (e.g. interview questions, orientation, staff training, and evaluations where appropriate)
- Find alternatives to oil-steam production i.e. biofuel or natural gas.
- Actively pursue alternative energy sources for Acadia.
- Focus on creating/enhancing visible indicators of sustainability at Acadia.
- Offer more training opportunities for staff and faculty.
- Offer workshops or other opportunities to discuss and explore ideas
- Continue the work of the recently formed Sustainability Team.
- Increase and coordinate communications related to sustainability across campus.
- Develop operations (i.e. department/unit) plans to achieve the goals in the Strategic Plan.
- Facilitate faculty involvement in initiatives on campus to tap expertise.
- Take garbage bins out of the classroom (again).
- Offer more training and develop policies related to faculty and staff waste sorting.
- Replace lost trees on campus.
- Develop policies based on existing sustainability practices on campus.
- Increase R value in buildings (e.g. replace windows, add insulation)
- Build a recharging station for hybrid and electric vehicles.

## Promotions and Communications

### Strategic Plan Rating

The goals listed below are included in the Acadia Strategic Plan 2006 Plan related to promotions and communications and sustainability.

	0 no progress	1 a little	2 some	3 significant	4 goal achieved
All sectors and units of the University will collaborate to encourage environmental stewardship and innovation among students and celebrate their involvement through an active communications strategy.		1			
The University community will support students, faculty, and staff in their promotion of environmental awareness and sound environmental policies.			2		

### Questionnaire Results

Participants were asked to rate indicators of sustainability related to administration, mission and planning.

	0 don't know	1 none	2 a little	3 quite a bit	4 a great deal
<i>The extent to which the University Website positions the university as an institution committed to sustainability:</i>			1 ½		



## Discussion and Recommendations

### Discussion

This section presents general observations, overall results and recommendations that emerged from the Assessment. Overall, staff, faculty and students were supportive of this endeavor and pleased to participate in the assessment process. It was apparent that all participants were proud of current efforts to become sustainable and eager for further developments on campus. At the same time, significant challenges were identified and concern was expressed about the ability to move forward successfully without a clear vision, a coordinated and strategic approach, additional resources, and a stronger collective commitment.

Responses among interview participants were generally consistent indicating an appropriate sample size for this first Assessment. Significant variations in responses have been noted in the Assessment. In particular, uncertainty about the results of the “Tides are Turning” campaign was reflected in the wide range of ratings. Generally, participants tended to be most aware about the areas in which they were most directly involved. This is to be expected, however, the low level of awareness about many significant initiatives on campus was unexpected. For example, many questions were raised about the status of the Johnson Controls project and most were not aware that Acadia was a signatory to the Talloires Declaration. Clearly, more communications are required about sustainability initiatives on campus.

In terms of data and information collection, in some instances information required for the assessment was difficult to obtain. Either the information needed was not available or not easily accessible. Ensuring that data and information is accessible requires significant staff time in some cases and a willingness on the part of the institution to be transparent. This in itself is an important aspect of being a sustainable institution.

Incorporating ancillary services into the Assessment presented some challenges. The Assessment captured activities in each area of service (i.e. physical plant, bookstore, and food service), but a comprehensive analysis was not feasible within the scope of this first Assessment as there are separate corporate policies and procedures for each service on campus. Instead the Assessment focused on Physical Plant activities as these services pervade all campus functions and facilities. A more detailed analysis of ancillary services should be conducted in the future.

A further challenge is that there appears to be a “disconnect” between ancillary services and the rest of Acadia. For example, ancillary services have a limited awareness about activities across campus, and Acadia faculty, staff and students have a limited level of awareness about activities within ancillary services. As described above, this is to be expected since naturally people are most familiar with activities within their unit; however this issue appears to be pronounced in relation to Ancillary Services.

Further, the level of consistency in terms of priorities, policies and procedures between Acadia and Ancillary services is uncertain. In other words, is understanding about sustainability consistent across campus and is the focus of operations reflective of Acadia or respective corporate policies and procedures? It is important to ensure that sustainability is addressed relative to the goals of the

institution so that everyone is “singing from the same songbook” and not working at cross-purposes. This issue should be examined further. At the same time Ancillary services provide additional benefit to Acadia in that there are resources available through their Corporate Operations to facilitate sustainability activities. For example, Chartwells and Sodexo both have corporate staff involved in developing policies and procedures for sustainability. These resources can be tapped to support initiatives on campuses, as has been done with the naturalization of various areas of the grounds.

Finally, the integration of priorities, policies and procedures is critical to achieving sustainability across campus. In contractual relationship, the extent of integration is determined by the contracting organization; thus facilitating consistency in operations, communications, and integration of activities is ultimately the responsibility of Acadia.

## **Overall Results: Sustainability at Acadia**

Many examples of significant contributions to sustainability among individual faculty, staff and students, and individual departments or units on campus are evident in the results of the Sustainability Assessment. However, as described above, the emphasis of the Assessment is on initiatives at the institutional level; Acadia’s efforts to implement and facilitate sustainability broadly across campus. In this sense, sustainability has been given only “a little” attention at Acadia since 2006.

Operations, Outreach, Service and Partnerships and Student Opportunities in particular have been areas of emphasis over the past few years. Recently Curriculum has also been a focus and with the implementation of the three new programs related to sustainability Acadia will significantly enhance its offerings in this area in the coming year. In Operations, the majority of initiatives have focused on new construction, energy conservation, and recycling. In all areas of operations there are some practices in place, however most are not institutionalized (i.e. developed into formal policies and procedures which guide decision making), but are implemented on a somewhat ad hoc basis by concerned staff, faculty and students. Faculty and Staff Development and Rewards, and Promotions and Communications are areas that require more attention based on the results of the Assessment.

In terms of the Acadia Strategic Plan, there has been “some” progress toward the goals outlined in the plan, although significant progress has not been made in any one area. Research and Scholarship, Administration, Mission and Planning, and Student Opportunities have been areas of emphasis. As mentioned above, there are no goals in the Strategic Plan related to Faculty and Staff Development and Rewards, which should be addressed. Outreach, Service and Partnerships and Promotions and Communications are areas that require further attention.

In order to achieve sustainability at Acadia a coordinated and strategic approach that is focused on aligning activities with the goals outlined in the Strategic Plan and encouraging collective responsibility is necessary. In the context of limited resources it is particularly imperative to identify priorities and specific objectives; “random acts of green” will not lead to significant long term changes and savings for the institution. Further, the public commitment demonstrated in the signing of the Talloires Declaration must become a commitment in both policy and practice at Acadia. Only then can the most critical issues facing the institution be addressed such as attaining carbon reductions consistent with the Kyoto Protocol and providing an education that produces citizens committed to living and not just learning about sustainability.

Recommendations for furthering Acadia's progress toward sustainability emerged from the Assessment and are summarized below. It should be noted that this is not an exhaustive list of recommendations for initiatives that should or could be undertaken by the institution, but some potential next steps for moving forward based on the Assessment results. Also, the development of a comprehensive strategy for sustainability should involve consultation with staff, faculty, students and members of the community.

## Recommendations

### Curriculum

- Implement and promote the proposed new programs of study in the Arts, Professional Studies, and Pure & Applied Science.
- Require a course related to sustainability for all students in degree programs at Acadia.
- Facilitate professional development opportunities and offer faculty training in integrating sustainability into curriculum across all disciplines.
- Develop a university-wide strategy to integrate sustainability content into curriculum across departments.
- Ensure that sustainable behaviors are modeled in the classroom and across the institution by all staff and faculty.

### Research and Scholarship

- Develop a central registry (e.g. online database or annual report) of research activities in the area of sustainability accessible to all staff, faculty, students and the general public.
- Promote existing opportunities for interdisciplinary for research and education; enhance and increase support to these structures.
- Engage the Academy Council about the role of the organization and facilitate increased involvement in achieving the mandate of the organization among Council members, particularly with respect to advocacy and policy.

### Operations

- Institutionalize the various sustainable practices already in place on campus by developing formal policies and procedures to guide decision making.
- Develop operations plans with specific objectives for departments and units to achieve the goals outlined in the Strategic Plan.
- Develop and implement an energy strategy. Initiatives should include: education and training, renewable energy, increase the R value in buildings (e.g. replace windows, and add insulation), behavior change and alternatives to Bunker C.
- Ensure that all new construction and renovation projects are carbon neutral; they should not add to the institution's existing carbon emissions.

- Address the visible signs of unsustainable practices; enhance visible signs of sustainable practices.
- Develop a waste management strategy. Initiatives should include: reinstate the AWARE program to coordinate outreach, take garbage bins out of the classroom, offer regular training for faculty, staff, and students about waste sorting; and conduct a campus-wide waste audit.
- Continue replacement of all food service disposables on campus with compostable (BPI certified) or recyclable products. They should be clearly marked to avoid confusion.
- Support the development of the Acadia Community Sustainable Farm.
- Implement the revised landscape plan for campus. Initiatives should include selective naturalization, replacing lost trees, and redesign of pedestrian pathways.
- Conduct an annual Sustainability Assessment and GHG inventory.

### **Faculty and Staff Development and Rewards**

- Incorporate goals for sustainability related to staff and faculty development and rewards into the Acadia Strategic Plan.
- Incorporate contributions to sustainability into faculty and staff hiring and promotion and performance expectations.
- Enhance orientation programs for new faculty and staff specific to sustainability.
- Offer additional training for faculty and staff on topics of sustainability.
- Explore ways to tap expertise on campus to facilitate and support campus initiatives.

### **Outreach, Service and Partnerships**

- Identify and enhance strategic partnerships for sustainability.
- Provide more support and resources for out-of-classroom student learning opportunities that address community and campus sustainability issues.
- Encourage and support volunteer service related to sustainability in the community by students, faculty, and staff.

### **Student Opportunities**

- Integrate student positions, such as the ASU Sustainability Office Coordinator, formally into decision making structures within the ASU and the University administration. For example, the ASU Sustainability Office Coordinator could serve as an ex-officio member of the ASU executive. Alternatively, an additional executive position could be created within the ASU, such as VP-Sustainability or VP Environment. Students should continue to serve on the Sustainability Team.
- Require the election of Eco-Reps for all residences and establish a formal communications mechanism for this group within the House Council.

- Require a pledge of social and environmental responsibility for all students such as “Students will serve as stewards of the natural environment and of the community in which they live and learn.”
- Expand Eco-House outreach and education programs targeted to on and off campus students.
- Encourage and provide support for student extracurricular activities.

### **Administration, Mission and Planning**

- Develop a Sustainability Policy and Plan with specific objectives.
- Adopt a vision and a framework for sustainability that will help to guide decision making across all areas of the institution.
- Formalize and promote the role of the Sustainability Team within the university.
- Designate an energy officer to be responsible for energy conservation and renewable energy solutions for the university.
- Offer workshops or other opportunities to discuss and explore ideas for solutions to sustainability issues.

### **Promotions and Communications**

- Increase and coordinate communications related to sustainability across campus.
- Create a “Sustainable Acadia” page in “About Acadia” on the website with highlights of sustainability initiatives.
- Continue to raise the profile of sustainability on campus through high profile events, promotional materials, and communications.
- Provide an update on the status and results of the Johnson Controls project to the Acadia community.

## Conclusions

The Acadia Sustainability Assessment has served as an opportunity to reflect on Acadia's progress and accomplishments in becoming a more sustainable institution. It has also served as an account of sustainability activities to raise awareness about what is happening across the various areas of campus function and to identify challenges and opportunities for moving forward. The Assessment should be viewed as a living document, intended to encourage discussion and provide general direction rather than present a decisive action plan. Ideally, the Sustainability Assessment will serve as a first step in managing, monitoring and reporting our progress on sustainability on an ongoing basis.

The methods for conducting the Assessment should be viewed similarly, as a living process in engagement and education which should evolve. For example, in the future, a more extensive consultation would be beneficial in terms of engaging more people on campus and in the community on issues of sustainability. Focus groups or charrettes could be adopted as a format for consultation to encourage discussion, to capture additional perspectives, and to facilitate collective reflection. Also, the Sustainability Assessment Questionnaire can be modified further to capture additional information of interest to Acadia.

The Assessment is an examination of the various areas of activity of the institution; however, it became clear from the Assessment that there is considerable overlap between these areas as it relates to sustainability. For instance, Acadia faculty create learning opportunities for students in the community through a variety curriculum initiatives which achieves goals in community service, curriculum and student opportunities. Further, these activities often involve staff, faculty, students and members of the community. This interdisciplinary and interdepartmental approach serves Acadia well in furthering sustainability at the institution.

Sustainability is a broad concept and it is not always clear how to move forward, however there are significant social, financial and environmental implications for not addressing issues at Acadia. On the positive side, new opportunities, increased enrollment, campus pride, financial security, food security, social well-being, institutional integrity, and environmental and human health are potential gains from achieving the goals outlined the Acadia Strategic Plan related to becoming a more sustainable institution of higher education.

## References

- Acadia University Business Office. (2008) *Acadia University statement of operations year ended March 31, 2008*. Available from [www.acadiau.ca/busioff/Acadia%20Financial%20Statements%20-%20March%2031,%202008.pdf](http://www.acadiau.ca/busioff/Acadia%20Financial%20Statements%20-%20March%2031,%202008.pdf)
- Acadia University Division of Research and Graduate Studies. (2006) *Acadia University strategic research plan*. Available from <http://research.acadiau.ca>.
- Acadia University Faculty Association. (n.d.) *Twelfth collective agreement between the Board of Governors of Acadia University and the Acadia University Faculty Association 01 July 2007 – 30 June 2010*. Available from <http://www.caut.ca/aufa/agreements/index.htm>
- Acadia Students' Union. (2006) *Acadia Student's Union draft financial policy manual 2006-2007*. Wolfville, NS: Acadia University.
- Amec. (2008) *Boiler installation review final report* (Job No. 158243-3.5). Halifax, NS: Amec.
- Association of University Leaders for a Sustainable Future. (1990) *Talloires declaration*. Available from [http://www.ulsf.org/programs\\_talloires.html](http://www.ulsf.org/programs_talloires.html)
- Clean Air-Cool Planet. (2008) *Canadian Version: Campus Carbon Calculator v.6*. Available from <http://www.cleanair-coolplanet.org/toolkit/inv-calculator.php>.
- Clean-Air Cool Planet. (2008) *Clean Air-Cool Planet Campus Carbon Calculator User's Guide Version 6*. Available From <http://www.cleanair-coolplanet.org/toolkit/inv-calculator.php>.
- K.C. Irving Environmental Science Centre. (n.d.) *K.C. Irving Environmental Science Centre & Harriet Irving Botanical Gardens tour book*. Wolfville, NS: Acadia University.
- Ministry of Finance. (n.d.) *How the carbon tax works*. Province of British Columbia. Available from <http://www.fin.gov.bc.ca/scp/tp/climate/A4.htm>.
- Office of the Vice President – Academic. (2009) *Acadia University environmental and sustainability studies proposal*. Wolfville, NS: Acadia University.
- Office of the Vice-President - Academic. (2006) *Strategic plan for Acadia University: Personalized education for a complex world*. Available from <http://www.acadiau.ca/vpaoffice/newsite/planning/planning.htm>
- Robert A.M. Stern Architects, Novell Tullett Landscape Architects and Geoplan Consultants Inc. (2001) *Acadia University Campus Plan*. New York, NY: Robert A.M. Stern Architects.
- Town of Wolfville. (2006) *Pesticide Management Policy*. Revision date January 24, 2006. Wolfville, NS: Town of Wolfville.
- World Commission on Environment and Development. (1987) *Report of the world commission on environment and development: Our common future*. Available from <http://www.un-documents.net/wced-ocf.htm>

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Neil Carruthers, Vice President Administration  
Pam Dimock, Assistant Registrar - Student System and Institutional Research  
Marcia Elliot, Planning Services Coordinator, Town of Wolfville  
Brad Keddy , H.E. Keddy Bros. Ltd.  
Debbie Kiely, Coordinator Community and Professional Development, Open Acadia  
Garry McIver, Coordinator Purchasing Services, Business Office  
Cathy MacDonald, Administrative Assistant, Vice-President (Academic)  
Mike McKinnon, Chef, Chartwells at Acadia  
Lianna Meredith, ASU VP Finance (2008-2009)  
Donna Murphy, Acadia Senate Recording Secretary  
Andy Murray, Senior Director of Food Services, Chartwells  
Drew Peck, Director of Facilities  
Melanie Priesnitz, Conservation Horticulturist, Harriet Irving Botanical Gardens and KC IC  
Craig Quartermain, Plant Operations Manager, Physical Plant  
Jay Rees, Environmental Services Manager, Physical Plant  
Peter Romkey, Director, K.C. Irving Environmental Science Centre and Harriet Irving Botanical Gardens  
David Slabotsky, Parks Foreman, Town of Wolfville  
Akivah Starkman, Executive Director Department of Human Resources  
Kyle Steele, ASU President (2008-2009)  
Cathy Walsh, Executive Secretary, Vice-President (Administration)



## Appendix A

### **Association of University Leaders for a Sustainable Future The Talloires Declaration 10 Point Action Plan (1994 Updated Version)**

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.



ULSF

Association of University Leaders for a Sustainable Future

**HIGHER EDUCATION INSTITUTION  
SIGNATORY FORM**

As an institution of higher education concerned about the state of the world environment and the advancement of sustainable development, we shall strive to promote actions that will achieve a sustainable future. We endorse the Talloires Declaration and agree to support environmental citizenship at all levels including senior managers, administrators, faculty, staff, and students. Together we shall endeavor to advance global environmental literacy and sustainable development by implementing the ten-point action plan of the Talloires Declaration.

**Talloires Declaration Signatory**  
**Chancellor/President/Rector/Provost**  
(please type or print)

Gail Dinter-Gottlieb President + Vice-Chancellor

Name

Title

Acadia University

Institution

Gail Dinter-Gottlieb

Signature

Date

6/11/06

Mailing Address: Office of the President

Acadia University

City: Wolfville State/Province: Nova Scotia Postal Code: B4P 2R6

Country: Canada E-Mail: president@acadiau.ca

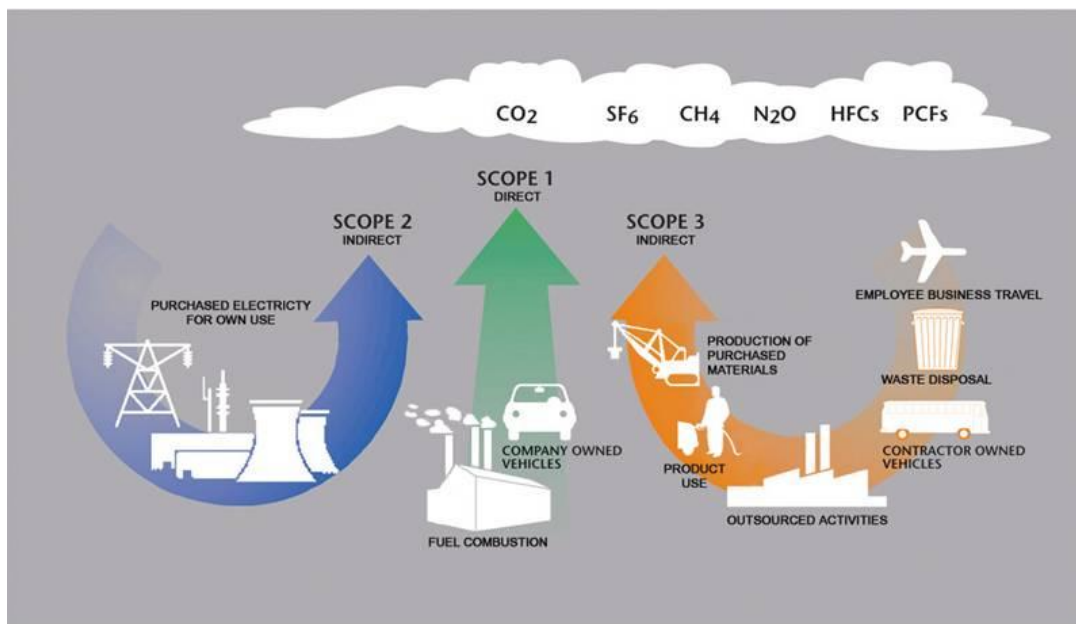
Phone: 902-585-1218 Fax: 902-585-1077

[Please send signed copy to ULSF at 2100 L St., NW, Washington, DC 20037]

6/00

## Appendix B

### Emissions Operational Boundaries (Scopes)



(Source: Graphic developed by the World Resources Institute. Available from Clean Air-Cool Planet)

Scope 1 emissions include direct emissions from sources that are owned and/or controlled by the institution such as combustion of fossil fuels in facilities and vehicles, fugitive emissions from refrigeration, and emissions from on-campus agriculture.

Scope 2 includes indirect emissions from sources that are neither owned nor operated by the institution but whose products are directly linked to on-campus energy consumption such as purchased electricity.

Scope 3 emissions are other indirect emissions from sources that are neither owned nor operated by the institution but are either directly financed such as air travel, food production, or linked to campus via influence or encouragement such as commuting, or air travel for study abroad programs.

Source: Clean-Air Cool Planet. (2008) *Clean Air-Cool Planet Campus Carbon Calculator User's Guide Version 6*. Available From <http://www.cleanair-coolplanet.org/toolkit/inv-calculator.php>.

## Appendix C

Interviews were conducted with the following individuals:

Dr. Andrew Biro	Canada Research Chair, Political Ecology and Assistant Professor	Arts (Political Science)
Dr. Edith Callaghan	Director, Arthur Irving Academy for the Environment and Associate Professor	Professional Studies (Business)
Dr. John Colton	Associate Professor	Professional Studies (Recreation Management & Kinesiology)
Dr. Richard Karsten	Associate Professor	Pure and Applied Science(Mathematics and Statistics)
Dr. Heather Hemming	Dean	Faculty of Professional Studies
Dr. Robert Perrins	Dean	Faculty of Arts
Dr. Robert Raeside	Acting Dean	Faculty of Pure and Applied Science
Drew Peck	Director	Department of Facilities Management
Marcel Falkenham	Assistant Director	Department of Facilities Management
Jay Rees	Environmental Services Manager	Physical Plant (Sodexo)
Dr. Akivah Starkman	Executive Director	Department of Human Resources
Amy Buckland-Nicks	Coordinator, ASU Sustainability Office 08/09	2 <sup>nd</sup> year Environmental Science Student
Dewey Dunnington	Coordinator, Acadia Environmental Society 08/09	2 <sup>nd</sup> year Environmental Science Student
Kenton Lambert	Coordinator, EcoHouse 08/09	4 <sup>th</sup> year Environmental Science Student
William Roberts	Eco-Rep 08/09	1 <sup>st</sup> year Biology/French Student
Alex Redfield	Acadia Farm Coordinator	4 <sup>th</sup> year Political Science Student
Brynne Sinclair-Waters	ARD Chase Court 08/09	4 <sup>th</sup> year Political Science Student